



GOLDER

REPORT

# 2020 Annual Groundwater Monitoring and Corrective Action Report

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

Submitted to:

**Ameren Missouri**

1901 Chouteau Avenue, St. Louis, Missouri 63103

Submitted by:

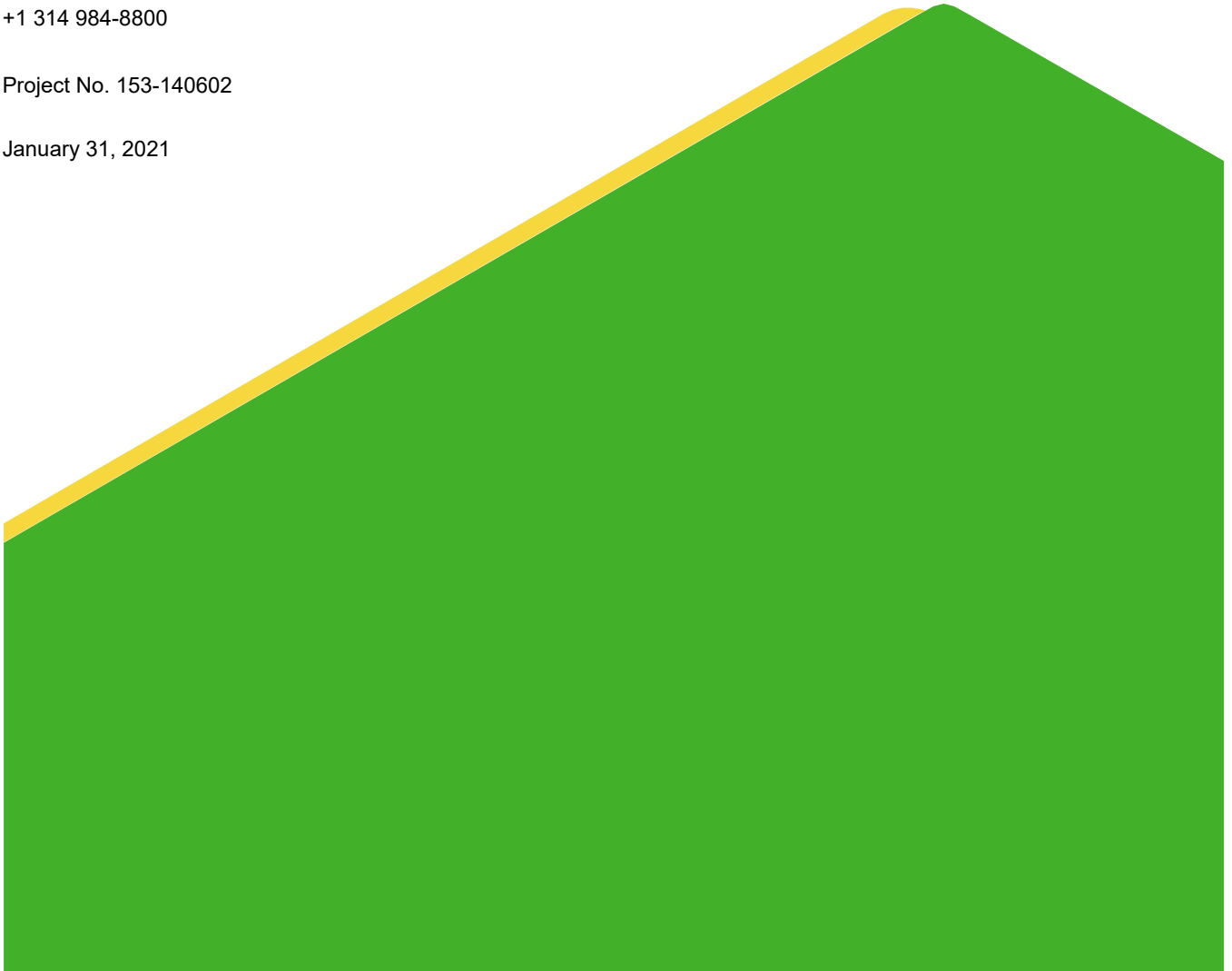
**Golder Associates Inc.**

13515 Barrett Parkway Drive, Suite 260, Ballwin, Missouri, USA 63021

+1 314 984-8800

Project No. 153-140602

January 31, 2021



## 1.0 EXECUTIVE SUMMARY AND STATUS OF THE SCPA GROUNDWATER MONITORING PROGRAM

This annual report was developed to meet the requirements of United States Environmental Protection Agency (USEPA) 40 CFR Part 257 “Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities; Final Rule” (the CCR Rule). The CCR Rule requires owners or operators of existing CCR units to produce an Annual Groundwater Monitoring and Corrective Action Report (Annual Report) each year (§ 257.90(e)). Ameren Missouri (Ameren) has determined that the SCPA Coal Combustion Residuals (CCR) Surface Impoundment at the Sioux Energy Center (SEC) is subject to the requirements of the CCR Rule. This Annual Report for the SCPA describes CCR Rule groundwater monitoring activities from January 1, 2020 through December 31, 2020, including verification results related to late 2019 sampling.

Throughout 2020, the SCPA has been in Corrective Action Monitoring with Detection and Assessment Monitoring continuing concurrently. Semi-annual groundwater sampling associated with Detection Monitoring has been ongoing since 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 are provided in **Table 1**.

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

**Table 1 – Summary of 2020 SCPA Sampling Events, Previous Year Verification, and Statistical Evaluations**

Event Name	Type of Event and Sampling Dates	Laboratory Analytical Data Receipt	Parameters Collected	Verified SSIs	SSLs	SSI & SSL Determination Date
November 2019 Sampling Event	Detection & Assessment Monitoring, November 13-15, 2019	December 3, 2019	Appendix III, Detected Appendix IV (See Note 1), & Major Cations and Anions	<b>pH:</b> UMW-2D <b>Boron:</b> UMW-2D, UMW-3D, UMW-4D, UMW-5D, UMW-6D, AM-1S, AM-1D <b>Calcium:</b> UMW-2D, UMW-3D, UMW-4D <b>Chloride:</b> UMW-1D, UMW-2D, UMW-3D, UMW-4D, UMW-5D, UMW-6D, AM-1S, AM-1D <b>Fluoride:</b> UMW-2D, UMW-3D, UMW-4D, UMW-5D, UMW-6D, AM-1S, AM-1D <b>Sulfate:</b> UMW-2D, UMW-3D, UMW-4D, UMW-5D, UMW-6D, AM-1D <b>TDS:</b> UMW-2D, UMW-3D, UMW-4D, UMW-5D	<b>Molybdenum:</b> UMW-2D, UMW-3D, UMW-4D, UMW-5D, AM-1D	March 2, 2020
	Verification Sampling, January 2-3, 2020	January 13, 2020	Detected Appendix III parameters (See Note 2)			
April-May 2020 Sampling Event	Detection & Assessment Monitoring, April 22-29, 2020 and May 18, 2020	June 10, 2020	Appendix III, Appendix IV, & Major Cations and Anions	<b>Boron:</b> UMW-1D, UMW-2D, UMW-3D, UMW-4D, UMW-5D, UMW-6D <b>Calcium:</b> UMW-2D, UMW-3D, UMW-4D <b>Chloride:</b> UMW-1D, UMW-2D, UMW-3D, UMW-4D, UMW-5D, UMW-6D <b>Fluoride:</b> UMW-2D, UMW-3D, UMW-5D, UMW-6D	<b>Molybdenum:</b> UMW-2D, UMW-3D, UMW-4D, UMW-5D	August 20, 2020

Event Name	Type of Event and Sampling Dates	Laboratory Analytical Data Receipt	Parameters Collected	Verified SSIs	SSLs	SSI & SSL Determination Date
	Verification Sampling, June 17, 2020	June 26, 2020	Detected Appendix III parameters <sup>(See Note 2)</sup>	<b>Sulfate:</b> UMW-2D, UMW-3D, UMW-4D, UMW-5D, UMW-6D <b>TDS:</b> UMW-2D, UMW-3D, UMW-4D, UMW-5D		
November 2020 Sampling Event	Detection & Assessment Monitoring, November 11-16, 2020	December 17, 2020	Appendix III, Detected Appendix IV <sup>(See Note 3)</sup> , & Major Cations and Anions	To be determined after statistical analysis and Verification Sampling are completed in 2021.		

Notes:

- 1) Testing was completed for Appendix IV analytes that were detected above the Practical Quantitation Limit (PQL) during the August 2019 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 2020 sampling event.
- 4) SSI – Statistically Significant Increase.
- 5) SSL – Statistically Significant Level.
- 6) TDS – Total Dissolved Solids.

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

- 1) Source control, stabilization and containment of CCR by installation of a low permeability geomembrane cap (a minimum 1 x 10<sup>-7</sup> centimeters per second (cm/sec) versus 1 x 10<sup>-5</sup> 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 is currently in Phase 1, and closure of the SCPA is scheduled to be completed by the end of 2021. Currently, Phase 2 of the corrective measures remedial plan as outlined in the Remedy Selection Report is scheduled to commence by the end of 2021, with the first MNA sampling event and associated statistical analysis planned for 2022.

In addition to the Remedy Selection Report, the CCR Rule outlines that, at a minimum, Corrective Action Monitoring must meet the requirements of an assessment monitoring program under §257.95 (Assessment Monitoring Program). Therefore, to comply with the requirements of the CCR Rule, three (3) baseline sampling events were completed in 2020 for the Corrective Action Monitoring Well Network.

# Table of Contents

**1.0 EXECUTIVE SUMMARY AND STATUS OF THE SCPA GROUNDWATER MONITORING PROGRAM.....ES-1**

**2.0 INSTALLATION OR DECOMMISSIONING OF MONITORING WELLS ..... 1**

**3.0 GROUNDWATER SAMPLING RESULTS AND DISCUSSION ..... 1**

    3.1 Detection Monitoring Program ..... 1

    3.2 Assessment Monitoring Program..... 1

    3.3 Corrective Action Monitoring Program .....2

    3.4 Groundwater Elevation, Flow Rate and Direction .....2

    3.5 Sampling Issues..... 3

**4.0 ACTIVITIES PLANNED FOR 2021.....3**

**TABLES**

- Table 1** - Summary of 2020 SCPA Sampling Events, Previous Year Verification, and Statistical Evaluations
- Table 2** - Summary of Well Construction Details
- Table 3** - Summary of Detection and Assessment Groundwater Network Sampling Dates
- Table 4** - Summary of Corrective Action Groundwater Network Sampling Dates
- Table 5** - November 2019 Detection Monitoring Results
- Table 6** - April-May 2020 Detection Monitoring Results
- Table 7** - November 2020 Detection Monitoring Results
- Table 8** - November 2019 Assessment Monitoring Results
- Table 9** - April-May 2020 Assessment Monitoring Results
- Table 10** - November 2020 Assessment Monitoring Results
- Table 11** - April 2020 Corrective Action Monitoring Results
- Table 12** - June 2020 Corrective Action Monitoring Results
- Table 13** - November 2020 Corrective Action Monitoring Results
- Table 14** - Additional 2020 Corrective Action Monitoring Results

**FIGURES**

- Figure 1** - Sioux Energy Center Groundwater Monitoring Programs and Monitoring Well Location Map

**APPENDICES**

- APPENDIX A** - Laboratory Analytical Data
- APPENDIX B** - November 2019 Assessment Monitoring Statistical Evaluation
- APPENDIX C** - April-May 2020 Assessment Monitoring Statistical Evaluation
- APPENDIX D** - 2020 Potentiometric Surface Maps
- APPENDIX E** - Well Modification Records

## 2.0 INSTALLATION OR DECOMMISSIONING OF MONITORING WELLS

There are currently two different networks used for monitoring the SCPA, the monitoring well network established under §257.91 for Detection and Assessment Monitoring and the network established under §257.98 for Corrective Action Monitoring, see **Figure 1**. No new wells were installed or decommissioned in 2020, however, based on further evaluations of the site, AM-1D (UMW-7D or AM-1M) and AM-1S (UMW-7S) were removed from the Detection and Assessment Groundwater Monitoring Network after the November 2019 sampling event and added to the Corrective Action Monitoring Well network prior to the April 2020 sampling event. A summary of the well construction details for monitoring wells in both networks is provided in **Table 2**. Further details including well construction diagrams for these wells are provided in previous annual reports for the SCPA.

## 3.0 GROUNDWATER SAMPLING RESULTS AND DISCUSSION

The following sections review the sampling events completed for the SCPA CCR Unit in 2020. **Tables 3 and 4** provide a summary of the groundwater samples collected in 2020 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.

### 3.1 Detection Monitoring Program

A Detection Monitoring sampling event was completed November 13-15, 2019. Verification sampling and the statistical analysis to evaluate for SSIs for the November 2019 event were not completed until 2020 and are therefore included in this report. Detections of Appendix III analytes triggered a Verification sampling event, which was completed on January 2-3, 2020 and verified SSIs. **Table 5** summarizes the results and the statistical analysis of the November 2019 Detection Monitoring event.

Detection Monitoring samples were collected April 22-29 and May 18, 2020 and testing was completed for all Appendix III analytes, as well as major cations and anions. As discussed above, prior to this event, AM-1S and AM-1D were removed from the Detection and Assessment Monitoring Well Networks and added to the Corrective Action Monitoring Well Network. Statistical analysis of the data determined SSIs. Detections of Appendix III analytes triggered Verification sampling, which was completed June 17, 2020 and the testing results verified SSIs. **Table 6** summarizes the results and the statistical analysis of the April-May 2020 Detection Monitoring event.

A Detection Monitoring sampling event was completed November 11-16, 2020 and testing was performed for all Appendix III analytes, as well as major cations and anions. Statistical analyses to evaluate for SSIs in the November 2020 data were not completed in 2020 and will be included in the 2021 Annual Report. **Table 7** summarizes the results of the November 2020 Detection Monitoring event.

### 3.2 Assessment Monitoring Program

An Assessment Monitoring sampling event was completed November 13-15, 2019 and testing was completed for Appendix IV parameters detected during the August 2019 sampling event. The statistical evaluation for this event was completed in 2020 and is included in this report. **Table 8** summarizes the results of the November 2019 Assessment Monitoring event. Based on the analysis, one new SSL was identified in the November 2019 sampling event for Molybdenum at monitoring well AM-1D. The results from this analysis and a table that displays the site-specific GWPS are provided in **Appendix B**. The SSLs for the SCPA for the November 2019 sampling event are:

- Molybdenum at UMW-2D, UMW-3D, UMW-4D, UMW-5D, and AM-1D

An Assessment Monitoring sampling event was completed April 22-29 and May 18, 2020 and testing was completed for all Appendix IV analytes. As discussed above, prior to this event, AM-1S and AM-1D were removed from the Detection and Assessment Monitoring Well Network and added to the Corrective Action Monitoring Well Network. Statistical analysis of the data is provided in **Appendix C** and determined there were no new SSLs. **Table 9** summarizes the results of the April-May 2020 Assessment Monitoring event. The SSLs for the SCPA for the April-May 2020 sampling event are as follows:

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

An Assessment Monitoring sampling event was completed November 11-16, 2020 and testing was completed for Appendix IV analytes that were detected above the Practical Quantitation Limit (PQL) during the April-May 2020 sampling event from either the Assessment or Corrective Action Groundwater Monitoring Well Networks. **Table 10** summarizes the results of the November 2020 Assessment Monitoring event; however, statistical analyses to evaluate SSLs were not completed in 2020. Results of the statistical evaluation will be included in the 2021 Annual Report.

### 3.3 Corrective Action Monitoring Program

The initial baseline Corrective Action sampling event was completed April 22-30, 2020 and testing was completed for all Appendix IV analytes, as well as other selected MNA parameters, and major cations and anions. A summary of the April 2020 Corrective Action sampling event results is provided in **Table 11**. A Corrective Action sampling event was completed June 15-18, 2020 and testing was completed for all Appendix III analytes, detected Appendix IV analytes (above the PQL) from either the April-May 2020 Assessment Monitoring sampling event or the April 2020 Corrective Action sampling event, and major cations and anions. The results of the June 2020 Corrective Action sampling event are provided in **Table 12**.

A Corrective Action sampling event was completed November 11-17, 2020 and testing was completed for Appendix III analytes, detected Appendix IV parameters from the April 2020 and April-May 2020 sampling events, as well as major cations and anions. **Table 13** summarizes the results of the November 2020 Corrective Action sampling event.

Supplemental Corrective Action sampling events were also completed in 2020 for statistical data collection. These supplemental events were completed because a minimum of four (4) values are required, and eight (8) are recommended by the Unified Guidance (USEPA, 2009) for statistical analysis. Therefore, prior to the initiation of Phase 2 of the Corrective Action Remedial Plan, a minimum of eight (8) sample results were collected for parameters present at an SSL (Molybdenum) for all monitoring wells within the Corrective Action Groundwater Monitoring Well Network. Results from this sampling are provided in **Table 14**.

### 3.4 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 D**. As shown on the potentiometric surface maps, groundwater flow direction within the uppermost aquifer is dynamic and directly controlled by the river stages of the Mississippi and Missouri Rivers, since the alluvial aquifer is hydraulically connected to these water bodies. Groundwater in the alluvial aquifer will generally flow from the higher of the two rivers toward the lower elevation river. The SCPA Surface Impoundment and Poeling Lake also

locally affect water levels and flow directions. Water flows into and out of the alluvial aquifer as a result of fluctuating river water levels that produce “bank recharge” and “bank discharge” conditions. At this facility, groundwater can flow north or south toward the Mississippi and Missouri Rivers, depending on river levels.

Groundwater flow direction and hydraulic gradient were estimated for the alluvial aquifer wells at the SEC using commercially available software. Results from this assessment indicate that while groundwater flow direction is variable, the overall net groundwater flow at the SCPA was toward the northeast/east but ranged from north to south. Horizontal gradients calculated by the program range from 0.00006 to 0.001 feet/foot with an estimated net annual groundwater movement of approximately three (3) feet in the prevailing downgradient direction.

### 3.5 Sampling Issues

Verification sampling and a Corrective Action Sampling event for the SEC were planned to start June 1, 2020. However, from approximately June 1, 2020 to June 14, 2020 some of the monitoring wells at the SEC were not accessible and partially submerged due to the flooding of the Mississippi and Missouri Rivers which caused a delay in the planned sampling dates. Prior to collecting water levels or groundwater samples, Golder performed a post-flood monitoring well inspection and based on this evaluation, no monitoring wells were impacted by the flood.

On April 29, 2020, the above-ground protective covers for monitoring wells LMW-1S and UMW-1D were modified to a flush-mount well protector due to ongoing construction at the SEC. The Missouri Department of Natural Resources (MDNR) Well Reconstruction Registration Reports and updated well construction diagrams can be found in **Appendix E**.

Monitoring well UMW-6D was originally sampled on April 23, 2020, for Detection and Assessment Monitoring. However, due to laboratory error the sample was not processed or analyzed at the lab within the hold time for several parameters. The laboratory contacted Golder regarding the error on May 13, 2020. Due to this error, UMW-6D was re-sampled on May 18, 2020.

No other notable sampling issues were encountered at the SCPA in 2020.

### 4.0 ACTIVITIES PLANNED FOR 2021

Detection and Assessment Monitoring are scheduled to continue on a semi-annual basis in the second and fourth quarters of 2021. Statistical analysis of the November 2020 Detection and Assessment Monitoring data will be completed in 2021 and will be included in the 2021 Annual Report.

The SCPA is in Phase 1 of the corrective measures remedial plan as outlined in the Remedy Selection Report. Therefore, semi-annual baseline sampling of the Corrective Action Monitoring Well Network is scheduled to continue in second and fourth quarters of 2021. Closure of the SCPA is anticipated to be completed in 2021, at which time the SCPA will begin following post-closure care requirements and move into Phase 2 of the corrective measures remedial plan discussed in the Remedy Selection Report.

## Tables



**Table 2**  
**Summary of Well Construction Details**  
**SCPA Surface Impoundment**  
**Sioux Energy Center, St. Charles County, MO**

Monitoring Well ID	Installation Date	Location		Top of Casing Elevation	Ground Surface Elevation	Top of Screen Elevation	Base of Well	Total Depth
		Northing <sup>1</sup>	Easting <sup>1</sup>	(FT MSL) <sup>2</sup>	(FT MSL) <sup>2</sup>	(FT MSL) <sup>2</sup>	(FT MSL) <sup>2</sup>	(FT BGS) <sup>3</sup>
<b>CCR RULE COMPLIANCE NETWORK</b>								
UMW-1D*	12/15/2015	1121321.4	879420.3	444.95	445.4	383.9	373.7	71.7
UMW-2D	12/17/2015	1120266.7	878981.6	433.86	431.7	386.6	376.4	55.4
UMW-3D	12/16/2015	1120570.4	878251.1	431.67	430.1	384.3	374.1	56.0
UMW-4D	12/16/2015	1121077.9	877859.9	423.52	421.7	380.7	370.5	51.2
UMW-5D	12/17/2015	1121815.0	877799.1	446.66	444.8	384.8	374.6	70.2
UMW-6D	12/18/2015	1122312.0	878639.5	447.02	444.9	384.1	373.9	71.0
BMW-1D	12/8/2015	1121713.6	876740.9	428.28	426.0	383.1	372.9	53.2
BMW-3D	11/8/2016	1121798.8	875798.3	426.41	424.2	381.8	371.6	52.6
<b>CORRECTIVE ACTION MONITORING WELL NETWORK</b>								
LMW-1S*	12/15/2015	1121320.4	879427.6	445.07	445.4	414.8	404.6	40.8
LMW-2S	12/16/2015	1120332.8	879283.7	447.16	445.2	414.7	404.5	40.8
LMW-4S	12/8/2015	1119226.6	879561.5	429.40	427.3	412.4	402.2	25.1
LMW-5S	12/14/2015	1119250.6	880348.6	447.36	445.5	410.1	399.9	45.6
LMW-6S	12/14/2015	1119782.0	880867.8	446.00	444.1	414.1	403.9	40.2
BMW-1S	12/8/2015	1121709.2	876755.6	427.77	426.0	412.0	401.8	24.2
BMW-3S	11/8/2016	1121792.9	875809.5	426.69	424.1	410.2	400.0	24.2
UMW-7S (AM-1S)	7/11/2018	1122151.7	877672.3	425.56	423.3	408.5	398.2	25.1
UMW-7D (AM-1D)	7/11/2018	1122156.7	877672.7	425.47	423.5	378.7	368.4	55.1
PZ-1S	6/17/2018	1121157.5	877799.8	423.94	422.1	402.4	391.7	30.5
PZ-9D	6/19/2018	1119526.8	881125.3	434.30	432.4	377.2	366.5	65.9
UG-3	12/16/2007	1118608.5	880519.4	429.71	427.1	410.0	399.7	27.4
TP-2D	7/9/2018	1123221.1	881698.8	429.26	426.7	347.3	342.2	84.4
TP-3D	7/9/2018	1120614.0	882877.1	434.82	432.1	356.1	351.0	81.1
TP-4D	7/8/2018	1118472.8	882589.0	428.72	426.4	349.3	344.2	82.2
TP-5D	7/6/2018	1118812.3	879517.5	429.60	427.1	352.5	347.4	79.7
TP-6S	7/11/2018	1119284.6	876381.5	428.07	426.1	408.1	403.0	23.0
TP-6D	7/11/2018	1119284.6	876381.5	428.06	426.1	345.6	340.5	85.6
TP-8D	7/14/2018	1114533.1	881307.7	431.30	428.8	351.7	346.6	82.3

Notes:

- 1) Horizontal Datum: State Plane Coordinates NAD83 (2000) Missouri East Zone feet.
- 2) FT MSL - Feet above mean sea level.
- 3) FT BGS - Feet below ground surface.
- 4) Vertical Datum: NAVD88 feet.
- 5) \*UMW-1D and LMW-1S were modified on 04/29/2020.

**Table 3**  
**Summary of Detection and Assessment Groundwater Network Sampling Dates**  
**SCPA Surface Impoundment**  
**Sioux Energy Center, St. Charles County, MO**

Groundwater Monitoring Wells	Date of Sample Collection				Total Number of Samples
	January 2020 Verification Sampling	April-May 2020 Assessment/ Detection Monitoring	June 2020 Verification Sampling	November 2020 Assessment/ Detection Monitoring	
<b>CCR Rule Compliance Monitoring Well Network</b>					
<b>BMW-1D</b>	-	4/22/2020	-	11/16/2020	2
<b>BMW-3D</b>	-	4/22/2020	-	11/16/2020	2
<b>UMW-1D</b>	-	4/28/2020	6/17/2020	11/11/2020	3
<b>UMW-2D</b>	-	4/28/2020	-	11/13/2020	2
<b>UMW-3D</b>	1/2/2020	4/28/2020	-	11/13/2020	3
<b>UMW-4D</b>	1/3/2020	4/28/2020	-	11/13/2020	3
<b>UMW-5D</b>	1/2/2020	4/29/2020	-	11/13/2020	3
<b>UMW-6D</b>	-	5/18/2020	-	11/12/2020	2
<b>Assessment or Detection Monitoring</b>	Detection	Assessment/ Detection	Detection	Assessment/ Detection	NA

Notes:

- 1.) Detection Monitoring results provided in Tables 5-7.
- 2.) Verification Sampling results provided in Tables 5-6.
- 3.) Assessment Monitoring results provided in Tables 8-10.
- 4.) "-" No sample collected.
- 5.) NA - Not Applicable.

**Table 4**  
**Summary of Corrective Action Groundwater Network Sampling Dates**  
**SCPA Surface Impoundment**  
**Sioux Energy Center, St. Charles County, MO**

Groundwater Monitoring Wells	Corrective Action Monitoring Well Network					Total Number of Samples
	April 2020 Sampling Event	June 2020 Sampling Event	July 2020 Sampling Event	September 2020 Sampling Event	November 2020 Sampling Event	
<b>LMW-1S</b>	4/23/2020	6/17/2020	-	-	11/11/2020	3
<b>LMW-2S</b>	4/23/2020	6/16/2020	-	-	11/12/2020	3
<b>LMW-4S</b>	4/23/2020	6/16/2020	-	-	11/12/2020	3
<b>LMW-5S</b>	4/23/2020	6/17/2020	-	-	11/11/2020	3
<b>LMW-6S</b>	4/23/2020	6/17/2020	-	-	11/11/2020	3
<b>UMW-7S (AM-1S)</b>	4/22/2020	6/16/2020	-	-	11/16/2020	3
<b>UMW-7D (AM-1D)</b>	4/22/2020	6/15/2020	-	-	11/16/2020	3
<b>PZ-1S</b>	4/29/2020	6/18/2020	7/21/2020	9/29/2020	11/13/2020	5
<b>PZ-9D</b>	4/30/2020	6/17/2020	7/21/2020	9/29/2020	11/12/2020	5
<b>UG-3</b>	4/27/2020	6/16/2020	-	-	11/17/2020	3
<b>TP-2D</b>	4/29/2020	6/18/2020	-	9/29/2020	11/17/2020	4
<b>TP-3D</b>	4/29/2020	6/18/2020	-	9/29/2020	11/17/2020	4
<b>TP-4D</b>	4/29/2020	6/16/2020	-	9/29/2020	11/17/2020	4
<b>TP-5D</b>	4/27/2020	6/16/2020	-	9/29/2020	11/17/2020	4
<b>TP-6S</b>	4/29/2020	6/16/2020	-	9/29/2020	11/16/2020	4
<b>TP-6D</b>	4/29/2020	6/16/2020	-	9/29/2020	11/16/2020	4
<b>TP-8D</b>	4/27/2020	6/16/2020	-	9/29/2020	11/16/2020	4
<b>BMW-1S</b>	4/22/2020	6/16/2020	-	-	11/16/2020	3
<b>BMW-3S</b>	4/22/2020	6/16/2020	-	-	11/16/2020	3
<b>Event Type</b>	Corrective Action	Corrective Action	Corrective Action	Corrective Action	Corrective Action	NA

Notes:

- 1.) Corrective Action sampling results provided in Tables 11-13.
- 2.) Additional Corrective Action sampling results from July 2020 through September 2020 provided in Table 14.
- 3.) "-" No sample collected.
- 4.) NA - Not Applicable.

**Table 5**  
**November 2019 Detection Monitoring Results**  
**SCPA Surface Impoundment**  
**Sioux Energy Center, St. Charles County, MO**

ANALYTE	UNITS	PREDICTION LIMITS	BACKGROUND		GROUNDWATER MONITORING WELLS							
			BMW-1D	BMW-3D	UMW-1D	UMW-2D	UMW-3D	UMW-4D	UMW-5D	UMW-6D	AM-1S	AM-1D
<b>November 2019 Detection Monitoring Event</b>												
DATE	NA	NA	11/13/2019	11/13/2019	11/15/2019	11/15/2019	11/15/2019	11/15/2019	11/13/2019	11/13/2019	11/13/2019	11/13/2019
pH	SU	6.308-7.828	7.14	6.98	7.53	7.93	7.66	7.06	7.37	7.22	7.16	7.26
BORON, TOTAL	µg/L	416.3	173	73.6 J	226	13,000	30,500	28,600	19,000	1,370	10,500	11,300
CALCIUM, TOTAL	µg/L	147,892	118,000	116,000	63,000	172,000	249,000	203,000	108,000	82,400	84,200	83,000
CHLORIDE, TOTAL	mg/L	11.2	5.8	11.1	15.9	19.8	14.7	22.9	26.3	12.5	25.3	25.6
FLUORIDE, TOTAL	mg/L	0.3646	0.29	0.39	0.25	0.49	1.0	0.79	0.81	0.45	0.63	0.57
SULFATE, TOTAL	mg/L	44.89	39.6	ND	42.3	369	755	592	143	71.8 J	ND	72.3
TOTAL DISSOLVED SOLIDS	mg/L	513	494	512	296	917	1,270	1,130	617	372	423	441
<b>January 2020 Verification Sampling Event</b>												
DATE	NA	NA					1/2/2020	1/3/2020	1/2/2020			
pH	SU	6.308-7.828										
BORON, TOTAL	µg/L	416.3										
CALCIUM, TOTAL	µg/L	147,892					224,000 J					
CHLORIDE, TOTAL	mg/L	11.2										
FLUORIDE, TOTAL	mg/L	0.3646				1.2						
SULFATE, TOTAL	mg/L	44.89										
TOTAL DISSOLVED SOLIDS	mg/L	513							565			

**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. 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. NA - Not applicable.
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: EMS  
Checked By: BTT  
Reviewed By: SCP

**Table 6**  
**April-May 2020 Detection Monitoring Results**  
**SCPA Surface Impoundment**  
**Sioux Energy Center, St. Charles County, MO**

ANALYTE	UNITS	PREDICTION LIMITS	BACKGROUND		GROUNDWATER MONITORING WELLS					
			BMW-1D	BMW-3D	UMW-1D	UMW-2D	UMW-3D	UMW-4D	UMW-5D	UMW-6D
<b>April-May 2020 Detection Monitoring Event</b>										
DATE	NA	NA	4/22/2020	4/22/2020	4/28/2020	4/28/2020	4/28/2020	4/28/2020	4/29/2020	5/18/2020
pH	SU	6.308-7.828	7.02	6.97	7.40	7.79	7.65	7.03	7.23	6.83
BORON, TOTAL	µg/L	416.3	195	ND	1,550	15,100	30,400 J	30,100	14,000	874
CALCIUM, TOTAL	µg/L	147,892	132,000	107,000	65,100	182,000	254,000 J	228,000	98,900	86,100
CHLORIDE, TOTAL	mg/L	11.2	6.0	7.5	17.7	19.1	12.0	16.8	27.9	15.5
FLUORIDE, TOTAL	mg/L	0.3646	0.30	0.31	0.25	0.50	0.49	0.31	1.0	0.49
SULFATE, TOTAL	mg/L	44.89	50.7	30.8	57.1	385	832	647	145	71.7
TOTAL DISSOLVED SOLIDS	mg/L	513	524	430	312	831	1,370	1,230	547	394
<b>June 2020 Verification Sampling Event</b>										
DATE	NA	NA			6/17/2020					
pH	SU	6.308-7.828								
BORON, TOTAL	µg/L	416.3			664					
CALCIUM, TOTAL	µg/L	147,892								
CHLORIDE, TOTAL	mg/L	11.2								
FLUORIDE, TOTAL	mg/L	0.3646								
SULFATE, TOTAL	mg/L	44.89			43.9 J					
TOTAL DISSOLVED SOLIDS	mg/L	513								

**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. 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. NA - Not applicable.
5. Prediction Limits calculated using Sanitas Software.
6. Values highlighted in yellow indicate a Statistically Significant Increase (SSI).
7. Values highlighted in green indicate an initial exceedance above the prediction limit that was not confirmed by Verification Sampling (not an SSI).
8. Only analytes/wells that were detected above the prediction limit and that had not already been verified were tested during Verification Sampling.
9. UMW-6D was originally sampled on 4/23/2020, but due to laboratory error the well was re-sampled on 5/18/2020.

Prepared By: EMS  
Checked By: BTT  
Reviewed By: MNH

**Table 7**  
**November 2020 Detection Monitoring Results**  
**SCPA Surface Impoundment**  
**Sioux Energy Center, St. Charles County, MO**

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS					
		BMW-1D	BMW-3D	UMW-1D	UMW-2D	UMW-3D	UMW-4D	UMW-5D	UMW-6D
<b>November 2020 Detection Monitoring Event</b>									
DATE	NA	11/16/2020	11/16/2020	11/11/2020	11/13/2020	11/13/2020	11/13/2020	11/13/2020	11/12/2020
pH	SU	7.12	7.12	7.40	8.10	8.03	7.32	7.28	7.24
BORON, TOTAL	µg/L	199	59.1 J	266	18,300 J	30,600	30,100	20,200	829
CALCIUM, TOTAL	µg/L	130,000	103,000	64,300	250,000 J	270,000	226,000	110,000	85,500
CHLORIDE, TOTAL	mg/L	7.1	8.1	17.1	19.8 J	14.3	15.2	27.1	14.1
FLUORIDE, TOTAL	mg/L	0.30	0.30	0.25	0.22	0.53	0.42	0.58	0.40
SULFATE, TOTAL	mg/L	58.0	25.2	50.4	599	711	681	181	75.5
TOTAL DISSOLVED SOLIDS	mg/L	498	395	304	1,090	1,370	1,290	625	391

**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.

Prepared By: BTT  
Checked By: EMS  
Reviewed By: MNH

**Table 8**  
**November 2019 Assessment Monitoring Results**  
**SCPA Surface Impoundment**  
**Sioux Energy Center, St. Charles County, MO**

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS							
		BMW-1D	BMW-3D	UMW-1D	UMW-2D	UMW-3D	UMW-4D	UMW-5D	UMW-6D	AM-1S	AM-1D
<b>FIELD PARAMETERS</b>											
DATE	NA	11/13/2019	11/13/2019	11/15/2019	11/15/2019	11/15/2019	11/15/2019	11/13/2019	11/13/2019	11/13/2019	11/13/2019
DISSOLVED OXYGEN	mg/L	0.23	0.26	0.24	0.11	0.16	0.23	0.23	0.29	0.16	0.21
pH	SU	7.14	6.98	7.53	7.93	7.66	7.06	7.37	7.22	7.16	7.26
REDOX POTENTIAL	mV	111.9	128.3	-26.7	149.4	161.7	173.8	168.8	-114.3	152.7	136.5
SPECIFIC CONDUCTIVITY	mS/cm	0.860	0.780	0.487	1.070	1.530	1.430	0.850	0.619	0.690	0.700
TURBIDITY	NTU	4.71	1.21	4.65	1.14	2.07	1.01	1.84	4.23	1.29	3.09
<b>APPENDIX IV PARAMETERS</b>											
ARSENIC, TOTAL	µg/L	0.27 J	0.48 J	1.8	3.4	0.43 J	0.41 J	0.50 J	0.30 J	1.2	0.24 J
BARIUM, TOTAL	µg/L	320	173	121	66.7	69.5	74.3	370	126	145	258
CADMIUM, TOTAL	µg/L	ND	0.047 J	0.040 J	0.41 J	1.5	3.1	0.89	0.046 J	0.17 J	0.22 J
FLUORIDE, TOTAL	mg/L	0.29	0.39	0.25	0.49	1.0	0.79	0.81	0.45	0.63	0.57
LITHIUM, TOTAL	µg/L	8.5 J	ND	9.9 J	18.8	21.0	34.9	28.5	9.7 J	25.4	29.2
MOLYBDENUM, TOTAL	µg/L	ND	ND	21.2	943	3,630	7,660	2,230	102	319	501

- NOTES
1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, 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. Statistical Analysis for the November 2019 Assessment Monitoring data is provided in Appendix B.

**Table 9**  
**April-May 2020 Assessment Monitoring Results**  
**SCPA Surface Impoundment**  
**Sioux Energy Center, St. Charles County, MO**

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS					
		BMW-1D	BMW-3D	UMW-1D	UMW-2D	UMW-3D	UMW-4D	UMW-5D	UMW-6D
<b>FIELD PARAMETERS</b>									
DATE	NA	4/22/2020	4/22/2020	4/28/2020	4/28/2020	4/28/2020	4/28/2020	4/29/2020	5/18/2020
DISSOLVED OXYGEN	mg/L	0.22	0.17	1.09	0.19	0.15	0.08	0.21	0.30
pH	SU	7.02	6.97	7.40	7.79	7.65	7.03	7.23	6.83
REDOX POTENTIAL	mV	-97.3	-79.3	230.5	192.0	148.9	127.6	148.8	208.5
SPECIFIC CONDUCTIVITY	mS/cm	0.848	0.711	0.461	1.103	1.595	1.491	0.859	0.655
TURBIDITY	NTU	1.96	4.76	4.54	1.16	0.78	1.09	1.52	2.67
<b>APPENDIX IV PARAMETERS</b>									
ANTIMONY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
ARSENIC, TOTAL	µg/L	0.20 J	ND	1.2	2.8	0.32 J	0.28 J	0.39 J	0.46 J
BARIUM, TOTAL	µg/L	323	659	116	70.7	70.7	79.8	334	127
BERYLLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
CADMIUM, TOTAL	µg/L	ND	ND	ND	0.38 J	1.3	3.4	0.84	ND
CHROMIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
COBALT, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
FLUORIDE, TOTAL	mg/L	0.30	0.31	0.25	0.50	0.49	0.31	1.0	0.49
LEAD, TOTAL	µg/L	ND	ND	ND	ND	ND	9.5 J	ND	ND
LITHIUM, TOTAL	µg/L	14.6	22.3	13.7	20.0	22.5	30.2	31.7	19.2
MERCURY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
MOLYBDENUM, TOTAL	µg/L	ND	ND	29.0	980	3,290	8,860	2,240	82.4
RADIUM [226 + 228]	pCi/L	ND	ND	ND	ND	1.630	ND	ND	ND
SELENIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
THALLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND

**NOTES**

1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeter, and NTU - nephelometric turbidity units.
2. J - Result is an estimated value.
3. NA - Not Applicable.
4. ND - Constituent was analyzed 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 for the April-May 2020 Assessment Monitoring data is provided in Appendix C.
7. UMW-6D was originally sampled on 4/23/2020, but due to laboratory error the well was re-sampled on 5/18/2020.



**Table 10**  
**November 2020 Assessment Monitoring Results**  
**SCPA Surface Impoundment**  
**Sioux Energy Center, St. Charles County, MO**

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS					
		BMW-1D	BMW-3D	UMW-1D	UMW-2D	UMW-3D	UMW-4D	UMW-5D	UMW-6D
<b>FIELD PARAMETERS</b>									
DATE	NA	11/16/2020	11/16/2020	11/11/2020	11/13/2020	11/13/2020	11/13/2020	11/13/2020	11/12/2020
DISSOLVED OXYGEN	mg/L	0.42	0.18	0.29	0.27	5.94	0.22	0.30	0.26
pH	SU	7.12	7.12	7.40	8.10	8.03	7.32	7.28	7.24
REDOX POTENTIAL	mV	-115.6	-118.6	-87.8	-92.6	-138.0	-121.9	-117.1	-91.2
SPECIFIC CONDUCTIVITY	mS/cm	0.856	0.728	0.537	1.500	1.693	1.631	0.935	0.693
TURBIDITY	NTU	1.85	4.54	3.72	1.47	1.00	0.81	1.46	3.17
<b>APPENDIX IV PARAMETERS</b>									
ARSENIC, TOTAL	µg/L	0.23 J	0.097 J	7.4	3.2	ND	ND	ND	ND
BARIUM, TOTAL	µg/L	312	658	233	89.3	77.8	74.9	346	125
CADMIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	0.59	ND	ND
COBALT, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
FLUORIDE, TOTAL	mg/L	0.30	0.30	0.25	0.22	0.53	0.42	0.58	0.40
LEAD, TOTAL	µg/L	ND	ND	ND	4.9 J	ND	ND	ND	ND
LITHIUM, TOTAL	µg/L	20.6	24.5	12.7	30.2	18.1	31.5	31.3	5.2 J
MOLYBDENUM, TOTAL	µg/L	ND	ND	50.3	1,060	3,400	9,040	2,400	63.0
RADIUM [226 + 228]	pCi/L	ND	ND	ND	ND	ND	ND	ND	ND
SELENIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND

**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 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 11**  
**April 2020 Corrective Action Monitoring Results**  
**SCPA Surface Impoundment**  
**Sioux Energy Center, St. Charles County, MO**

ANALYTE	UNITS	BMW-1S	BMW-3S	LMW-1S	LMW-2S	LMW-4S	LMW-5S	LMW-6S	TP-6S	PZ-1S	UG-3	AM-1S	AM-1D	PZ-9D	TP-2D	TP-3D	TP-4D	TP-5D	TP-6D	TP-8D
<b>FIELD PARAMETERS</b>																				
DATE	NA	4/22/2020	4/22/2020	4/23/2020	4/23/2020	4/23/2020	4/23/2020	4/23/2020	4/29/2020	4/29/2020	4/27/2020	4/22/2020	4/22/2020	4/30/2020	4/29/2020	4/29/2020	4/29/2020	4/27/2020	4/29/2020	4/27/2020
DISSOLVED OXYGEN	mg/L	0.23	0.29	0.77	0.40	2.46	2.07	2.57	0.67	0.10	0.30	0.21	0.16	0.72	0.42	0.66	0.62	0.14	0.83	0.13
REDOX POTENTIAL	mV	166.7	73.0	279.1	281.3	29.3	-46.7	12.3	68.7	183.5	190.1	170.1	99.7	-132.3	107.8	-118.3	-124.3	77.9	-148.5	155.0
SPECIFIC CONDUCTIVITY	mS/cm	0.773	0.795	0.540	1.124	1.099	2.218	2.170	0.840	1.533	0.858	0.621	0.529	1.259	1.914	0.791	0.738	0.806	0.782	0.523
TURBIDITY	NTU	0.61	1.55	0.19	0.38	1.03	3.82	1.76	1.60	4.30	1.68	0.65	4.92	9.54	3.95	3.60	1.50	0.97	1.08	0.69
<b>APPENDIX III PARAMETERS</b>																				
BORON, TOTAL	µg/L	114	95.9 J	1,030	11,100	2,020	17,300	19,400	129	37,500	313	10,400	7,280	2,850	127	50.1 J	87.6 J	6,640	83.4 J	89.6 J
CALCIUM, TOTAL	µg/L	150,000	134,000	83,300	170,000	182,000	294,000	324,000	137,000 J	220,000	129,000	84,400	78,200	182,000	287,000	112,000	116,000	116,000	120,000	106,000
CHLORIDE, TOTAL	mg/L	8.0	13.2	20.4	64.3	13.8	30.9	5.0	9.6	18.3	51.6	26.6	25.7	18.3	81.5	7.7	9.0	26.5	12.8	12.8
pH	SU	6.54	6.90	7.10	6.98	6.93	7.04	6.98	7.02	7.16	7.12	6.48	6.79	7.05	6.80	7.10	7.13	7.18	7.14	6.76
SULFATE, TOTAL	mg/L	27.0	29.6	106	321	107	1,100	996	38.3	635	68.2	55.1	80.1	432	503	86.1	93.2	227	67.6	45.5
TOTAL DISSOLVED SOLIDS	mg/L	565	472	412	862	729	1,900	1,900	490	1,160	579	427	421	879	1,280	490	477	596	471	416
<b>APPENDIX IV PARAMETERS</b>																				
ANTIMONY, TOTAL	µg/L	ND	ND	0.34 J	0.15 J	0.18 J	0.11 J	0.18 J	0.11 J	ND	0.11 J	ND	ND	ND	ND	ND	ND	ND	0.86 J	0.21 J
ARSENIC, TOTAL	µg/L	1.0	0.58 J	2.0	0.87 J	0.55 J	0.81 J	0.79 J	0.43 J	0.43 J	0.43 J	1.5	0.21 J	0.34 J	0.14 J	0.12 J	1.3	0.24 J	0.14 J	1.5
BARIUM, TOTAL	µg/L	144	132	155	109	210	58.9	54.2	295	194	226	139	243	113	61.1	549	564	146	441	347
BERYLLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CADMIUM, TOTAL	µg/L	0.11 J	0.077 J	0.080 J	0.91	ND	1.5	0.84	0.061 J	3.5	0.29 J	0.18 J	0.29 J	ND	ND	ND	ND	0.079 J	ND	ND
CHROMIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.33 J	ND	ND	ND	ND	0.33 J	ND
COBALT, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	10.7	ND	ND	1.5 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
FLUORIDE, TOTAL	mg/L	0.37	0.43	0.44	0.41	0.23	0.37	0.20	0.36	1.0	0.39	0.48	0.52	0.30	0.23	0.30	0.33	0.44	0.34	0.37
LEAD, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	13.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
LITHIUM, TOTAL	µg/L	ND	9.3 J	22.2	31.8	27.4	49.6	22.1	42.0	21.6	25.3	32.9	33.8	32.2	45.4	30.0	32.7	26.5	26.9	31.9
MERCURY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MOLYBDENUM, TOTAL	µg/L	2.7 J	2.4 J	108	1,230	ND	2,420	ND	3.1 J	9,190	3.4 J	284	554	4.7 J	2.4 J	ND	ND	147	ND	ND
RADIUM [226 + 228]	pCi/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.677	ND	ND	ND
SELENIUM, TOTAL	µg/L	0.32 J	0.28 J	5.8	ND	0.64 J	ND	ND	0.96 J	ND	0.93 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
THALLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>ADDITIONAL PARAMETERS</b>																				
ALKALINITY	mg/L	438	395	216	248	501	294	382	385	139	346	265	239	228	444	340	288	199	348	314
IRON, FERRIC, TOTAL	mg/L	0.003 J	0.024 J	ND	0.026 J	ND	0.082	0.025 J	0.075	8.4	0.003 J	3.2	2.2	9.8	16.6	7.4	7.2	6.3	8.5	5.9
IRON, FERROUS, TOTAL	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	0.51 J	ND	0.084 J	0.092 J	1.5 J	0.43 J	0.088 J	0.082 J	2.0 J	0.18 J	0.12 J
IRON, TOTAL	µg/L	ND	ND	ND	ND	ND	82.4	ND	75.1	8,950	ND	2,330	3,290	11,300	17,000	7,520	7,240	8,320	8,660	5,990
MAGNESIUM, TOTAL	µg/L	31,500	26,000	20,800	27,100	38,800	59,200	82,600	30,300	29,200	24,800	18,700	17,200	42,500	80,100	27,100	28,700	28,200	32,100	23,400
MANGANESE, TOTAL	µg/L	434	318	64.9	290	20.7	1,770	678	170	1,250	706	555	374	1,130	1,400	591	519	893	527	394
POTASSIUM, TOTAL	µg/L	378 J	490 J	6,980	8,640	4,600	5,070	5,580	3,060	10,800	5,550	7,730	7,380	4,820	5,850	3,800	3,470	4,280	3,990	3,630
SODIUM, TOTAL	mg/L	5.0	5.5	24.3	65.4	17.6	188	123	10.5	67.7	31.8	24.1	22.9	17.4	22.5	6.4	7.5	21.0	6.4	5.2
SULFIDE, TOTAL	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.095	ND

**NOTES**

1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeter, and NTU - nephelometric turbidity units.
2. J - Result is an estimated value.
3. ND - Constituent was analyzed 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 12**  
**June 2020 Corrective Action Monitoring Results**  
**SCPA Surface Impoundment**  
**Sioux Energy Center, St. Charles County, MO**

ANALYTE	UNITS	BMW-1S	BMW-3S	LMW-1S	LMW-2S	LMW-4S	LMW-5S	LMW-6S	TP-6S	PZ-1S	UG-3	AM-1S	AM-1D	PZ-9D	TP-2D	TP-3D	TP-4D	TP-5D	TP-6D	TP-8D
<b>FIELD PARAMETERS</b>																				
DATE	NA	6/16/2020	6/16/2020	6/17/2020	6/16/2020	6/16/2020	6/17/2020	6/17/2020	6/16/2020	6/18/2020	6/16/2020	6/16/2020	6/15/2020	6/17/2020	6/18/2020	6/18/2020	6/16/2020	6/16/2020	6/16/2020	6/16/2020
DISSOLVED OXYGEN	mg/L	0.27	0.96	0.88	0.55	0.16	0.27	2.01	0.14	0.13	0.33	0.33	0.58	0.16	1.54	0.13	0.19	0.71	0.12	0.19
REDOX POTENTIAL	mV	168.1	132.0	108.1	81.2	94.5	78.9	68.6	134.5	30.4	56.1	134.3	-126.3	-121.6	-94.5	-5.7	-129.2	-131.4	-8.4	24.2
SPECIFIC CONDUCTIVITY	mS/cm	0.924	0.768	0.678	1.271	1.126	2.297	2.222	0.817	1.553	1.097	0.698	0.652	1.242	1.835	0.824	0.771	0.889	0.761	0.642
TURBIDITY	NTU	1.15	1.40	0.48	2.47	2.82	4.10	4.95	2.15	2.04	2.58	1.57	8.14	2.24	2.03	1.89	1.37	2.30	1.07	3.68
<b>APPENDIX III PARAMETERS</b>																				
BORON, TOTAL	µg/L	66.1 J	71.9 J	1,160	11,400	3,050	17,400	19,600	118	36,700	930	9,620	7,210	3,060	120	91.5 J	78.1 J	6,980	79.1 J	76.9 J
CALCIUM, TOTAL	µg/L	149,000	131,000	83,300	170,000 J	176,000	286,000	329,000	132,000	219,000	150,000	80,700	76,100	188,000	276,000	120,000	109,000	113,000	112,000	96,600
CHLORIDE, TOTAL	mg/L	7.9	12.3	18.7	62.6	19.9	29.0	4.8	9.5	19.0	83.6	26.1	25.8	18.0	75.7	7.9	9.1	26.2	12.8	9.7
pH	SU	6.81	6.86	7.11	7.03	6.73	6.85	6.81	6.82	6.94	6.99	7.01	7.35	7.11	6.90	6.75	7.04	7.09	6.83	6.93
SULFATE, TOTAL	mg/L	28.1	31.1	84.1	304	145	1,050	923	41.5	676	114	62.3	72.5	436	484	87.1	102	227	66.0	36.9
TOTAL DISSOLVED SOLIDS	mg/L	543	458	388	871	730	1,900	1,790	504	1,210	663	411	414	904	1,340	504	488	612	470	396
<b>APPENDIX IV PARAMETERS</b>																				
ARSENIC, TOTAL	µg/L	1.1	0.62 J	2.0	0.95 J	0.71 J	0.75 J	0.68 J	0.49 J	0.47 J	0.45 J	1.3	0.23 J	0.28 J	0.11 J	0.12 J	1.5	0.24 J	0.17 J	1.6
BARIUM, TOTAL	µg/L	147	122	150	104	213	57.0	53.5	266	190	243	133	231	112	59.0	586	520	138	400	311
CADMIUM, TOTAL	µg/L	0.11 J	ND	0.063 J	0.45 J	0.10 J	0.68	1.3	0.058 J	0.73	0.38 J	0.062 J	ND	ND	ND	ND	ND	ND	ND	ND
COBALT, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	10.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FLUORIDE, TOTAL	mg/L	0.33	0.36	0.47	0.37	0.23	0.46	0.21	0.36	1.2	0.38	0.49	0.62	0.35	0.21	0.28	0.30	0.42	0.32	0.36
LEAD, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	7.5 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
LITHIUM, TOTAL	µg/L	7.3 J	10.3	14.7	34.9	32.7	43.4	19.3	38.1	15.5	36.8	36.6	36.3	28.4	42.7	31.8	32.8	31.7	30.7	32.5
MOLYBDENUM, TOTAL	µg/L	2.5 J	2.1 J	105	1,170	3.2 J	2,740	ND	3.4 J	8,990	2.3 J	308	588	7.6 J	ND	ND	ND	171	ND	ND
RADIUM [226 + 228]	pCi/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.560	ND	ND	ND	2.319	ND
SELENIUM, TOTAL	µg/L	0.37 J	0.35 J	29.0	ND	0.30 J	ND	ND	0.29 J	ND	0.57 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>ADDITIONAL PARAMETERS</b>																				
ALKALINITY	mg/L	424	389	217	240	486	275	381	389	142	334	238	208	218	450	322	274	176	339	293
IRON, TOTAL	µg/L	81.9	ND	ND	ND	35.3 J	130	89.1	ND	8,370	ND	2,610	3,180	11,300	16,300	7,900	6,800	8,140	7,700	5,370
MAGNESIUM, TOTAL	µg/L	29,900	24,900	20,000	28,200	38,200	55,100	78,800	29,600	25,600	31,600	18,200	16,800	45,500	74,600	29,500	27,100	30,100	30,200	22,300
MANGANESE, TOTAL	µg/L	848	336	69.2	87.1	50.7	1,720	681	295	1,190	644	535	366	1,220	1,340	666	489	908	486	369
POTASSIUM, TOTAL	µg/L	389 J	521	6,600	8,570	4,580	5,100	5,640	2,630	11,200	6,140	7,240	7,420	4,790	5,740	4,020	3,360	4,420	3,810	3,670
SODIUM, TOTAL	mg/L	5.0	5.6	18.3	65.7	17.9	194	120	9.5	65.1	26.4	23.7	23.0	17.9	23.6	6.9	7.4	22.4	5.9	5.0

**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 13**  
**November 2020 Corrective Action Monitoring Results**  
**SCPA Surface Impoundment**  
**Sioux Energy Center, St. Charles County, MO**

ANALYTE	UNITS	BMW-1S	BMW-3S	LMW-1S	LMW-2S	LMW-4S	LMW-5S	LMW-6S	TP-6S	PZ-1S	UG-3	AM-1S	AM-1D	PZ-9D	TP-2D	TP-3D	TP-4D	TP-5D	TP-6D	TP-8D
<b>FIELD PARAMETERS</b>																				
DATE	NA	11/16/2020	11/16/2020	11/11/2020	11/12/2020	11/12/2020	11/11/2020	11/11/2020	11/16/2020	11/13/2020	11/17/2020	11/16/2020	11/16/2020	11/12/2020	11/17/2020	11/17/2020	11/17/2020	11/17/2020	11/16/2020	11/16/2020
DISSOLVED OXYGEN	mg/L	0.31	0.37	1.23	0.30	0.57	0.35	0.44	0.14	0.14	0.30	0.19	0.24	0.19	0.18	0.23	0.21	0.12	0.13	0.21
REDOX POTENTIAL	mV	-31.6	-43.5	-49.8	1.2	5.9	-9.8	-9.3	17.9	-101.1	-28.1	-122.4	-138.5	-115.8	39.6	-116.5	-139.0	-52.3	-27.9	19.8
SPECIFIC CONDUCTIVITY	mS/cm	0.890	0.786	0.683	1.668	1.166	2.237	2.063	0.832	0.836	0.814	0.689	0.690	1.430	1.710	0.803	0.772	0.914	0.791	0.685
TURBIDITY	NTU	2.38	0.85	8.83	0.81	2.01	4.91	2.51	1.65	2.27	2.09	4.90	3.69	8.01	1.43	2.11	4.07	1.88	3.19	3.14
<b>APPENDIX III PARAMETERS</b>																				
BORON, TOTAL	µg/L	75.1 J	66.3 J	645	9,120	473	14,500 J	17,400	95.6 J	8,180	188	9,280	6,560	2,690	73.6 J	57.6 J	56.8 J	5,460	60.9 J	66.8 J
CALCIUM, TOTAL	µg/L	141,000	125,000	85,100	220,000	175,000	248,000 J	298,000	128,000	104,000	119,000	81,000	78,300	208,000	274,000	118,000	112,000	136,000	113,000	98,100
CHLORIDE, TOTAL	mg/L	7.0	11.4	23.3	135	2.4 J	22.5	4.0 J	8.3	19.9	16.5	26.4	25.8	17.4	76.7	8.3	8.7	27.1	12.9	13.4
pH	SU	6.96	7.07	7.23	7.10	6.94	6.86	6.75	6.69	7.12	7.25	7.30	7.26	7.18	6.91	7.11	7.24	7.20	6.85	7.15
SULFATE, TOTAL	mg/L	24.8	30.6	75.1	221	36.0	792	771	35.0	150	69.5	67.3	80.0	425	462	82.9	92.8	223	55.3	38.1 J
TOTAL DISSOLVED SOLIDS	mg/L	505	455	8.5	984	631	1,690	1,560	475	525	473	383	411	993	1,380	464	476	687	464	396
<b>APPENDIX IV PARAMETERS</b>																				
ARSENIC, TOTAL	µg/L	0.92 J	0.65 J	2.0 J	ND	ND	ND	ND	0.46 J	ND	0.36 J	1.5	0.20 J	ND	0.16 J	0.14 J	1.6	0.20 J	0.12 J	1.3
BARIUM, TOTAL	µg/L	154	119	156	133	216	54.5	51.6	284	100	208	144	245	124	60.7	583	560	178	399	332
CADMIUM, TOTAL	µg/L	0.11 J	ND	ND	ND	ND	0.66 J	1.4 J	ND	ND	0.22 J	0.078 J	ND	ND	ND	ND	ND	ND	ND	ND
COBALT, TOTAL	µg/L	1.6 J	ND	ND	2.3 J	ND	ND	8.9	ND	ND	1.7 J	2.6 J	ND	ND	ND	ND	ND	ND	ND	ND
FLUORIDE, TOTAL	mg/L	0.34	0.40	0.42	0.44	0.28	0.69	0.44	0.36	0.69	0.34	0.55	0.56	0.33	0.16 J	0.25	0.27	0.38	0.31	0.34 J
LEAD, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
LITHIUM, TOTAL	µg/L	7.8 J	11.3	18.4	31.7	18.5	45.2	21.3	37.4	14.3	28.3	33.2	38.0	37.9	51.6	34.6	36.0	32.6	31.2	31.0
MOLYBDENUM, TOTAL	µg/L	ND	ND	77.3	775	1.8 J	2,550	2.4 J	ND	1,760	ND	271	536	4.9 J	ND	ND	ND	186	ND	ND
RADIUM [226 + 228]	pCi/L	2.086	ND	ND	1.333	2.419	1.337 J	ND	ND	ND	ND	ND	ND	1.783 J	ND	ND	ND	ND	ND	ND
SELENIUM, TOTAL	µg/L	0.29 J	ND	5.8	ND	ND	ND	ND	0.51 J	ND	2.3	ND	ND	ND	ND	ND	ND	ND	ND	ND
<b>ADDITIONAL PARAMETERS</b>																				
ALKALINITY	mg/L	422	378	224	420	575	318	394	399	245	337	241	232	286	482	340	303	255	351	310
IRON, TOTAL	µg/L	52.0	35.3 J	112	57.0	32.6 J	260 J	450	ND	4,040	ND	1,950	3,040	12,900	16,100	7,840	6,590	9,520	7,320	5,380
MAGNESIUM, TOTAL	µg/L	27,800	23,000	20,400	40,900	37,500	47,400	70,400	28,000	17,400	23,300	17,500	17,100	49,800	75,700	29,500	27,000	34,500	28,600	22,100
MANGANESE, TOTAL	µg/L	1,240	344	41.9	599	324	1,430	572	185	1,080	574	646	384	1,350	1,340	658	466	1,090	475	382
POTASSIUM, TOTAL	µg/L	ND	ND	7,520	7,930	5,220	5,520	5,400	2,500	4,980	5,330	8,490	7,340	5,560	5,950	4,000	3,410	4,700	3,830	3,660
SODIUM, TOTAL	mg/L	4.8	5.3	21.8	62.2	14.8	176 J	100	5.9	26.9	19.1	23.4	22.2	20.0	26.0	6.6	7.3	19.8	5.3	5.2

**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 14**  
**Additional 2020 Corrective Action Monitoring Results**  
**SCPA Surface Impoundment**  
**Sioux Energy Center, St. Charles County, MO**

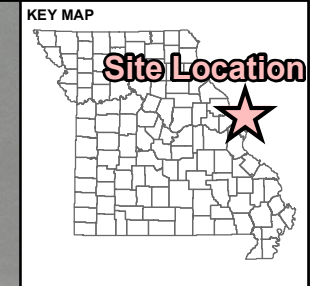
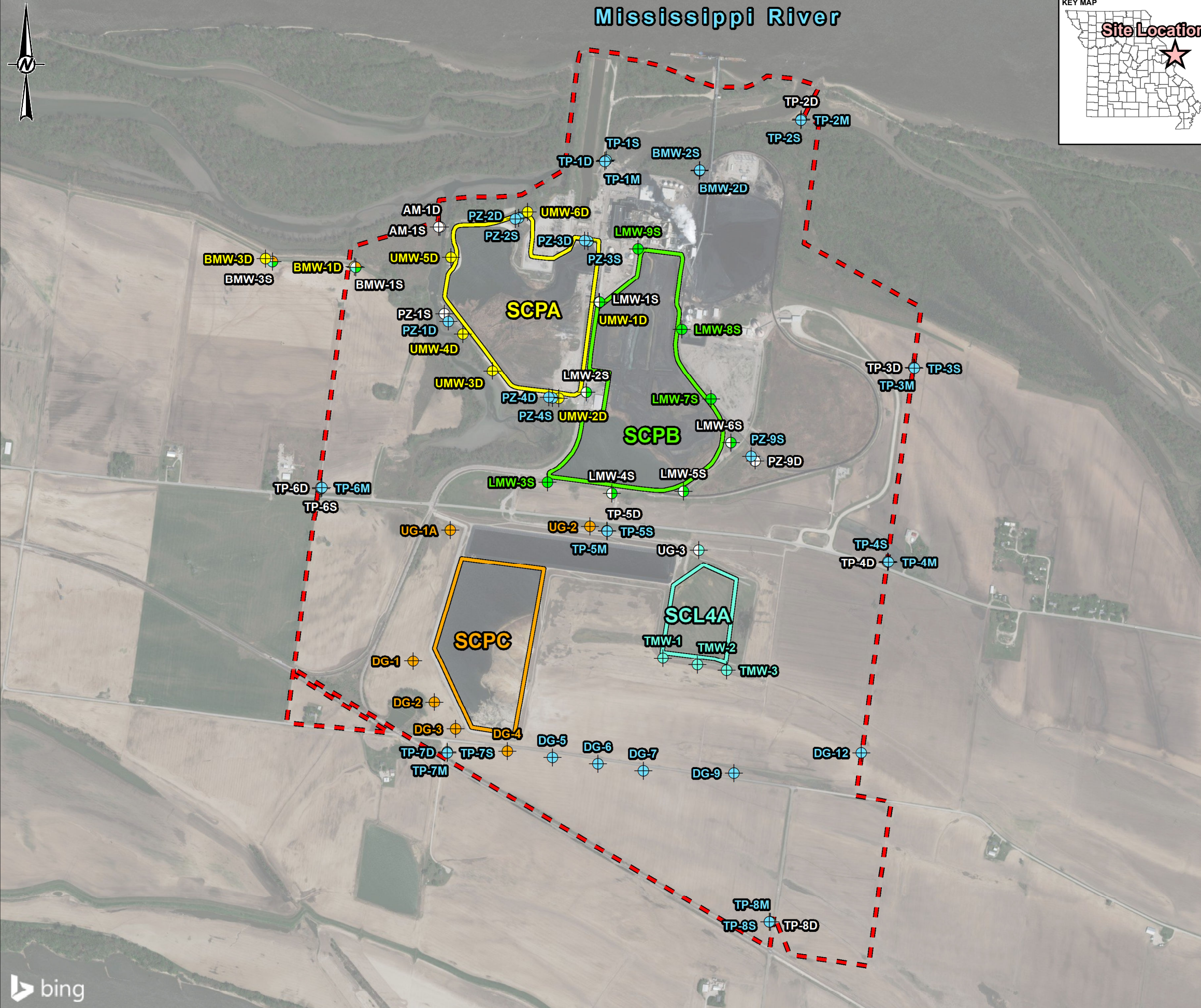
		GROUNDWATER MONITORING WELLS								
DATE	UNITS	PZ-1S	PZ-9D	TP-2D	TP-3D	TP-4D	TP-5D	TP-6S	TP-6D	TP-8D
Laboratory Analytical Data - Molybdenum										
7/21/2020	µg/L	9,290	ND	-	-	-	-	-	-	-
9/29/2020	µg/L	2,980	4.5 J	ND	ND	ND	208	2.5 J	ND	ND

NOTES:

1. Unit Abbreviations: µg/L - micrograms per liter.
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 Practical Quantitation Limit (PQL) and is considered a non-detect. Values displayed as ND.
4. "-" No sample collected.

Prepared By: EMS  
Checked By: BTT  
Reviewed By: MNH

## Figures



- LEGEND**
- Sioux Energy Center Property Boundary
  - SCPA - Bottom Ash Surface Impoundment
  - SCPB - Fly Ash Surface Impoundment
  - SCPC - WFGD Disposal Area
  - SCL4A - Dry CCR Disposal Area
- Monitoring Well Networks**
- + Corrective Action Monitoring Well
  - + SCPA Detection and Assessment Monitoring Well
  - + SCPB Detection Monitoring and SCPA Corrective Action Monitoring Well
  - + SCPB Detection Monitoring Well
  - + SCPB, SCPC and SCL4A Detection Monitoring and SCPA Corrective Action Monitoring
  - + SCPC Detection Monitoring Well
  - + SCL4A Detection Monitoring and SCPA Corrective Action Monitoring Well
  - + SCL4A Detection Monitoring Well
  - + Monitoring Well Used for Water Level Elevation Measurements



**NOTE(S)**  
 1.) ALL BOUNDARIES AND LOCATIONS ARE APPROXIMATE.  
 2.) WFGD - WET FLUE GAS DESULFURIZATION.

**REFERENCE(S)**  
 1.) AMEREN MISSOURI SIOUX ENERGY CENTER, SIOUX PROPERTY CONTROL MAP, FEBRUARY 2011.  
 2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2,401 FEET.

**CLIENT**  
 AMEREN MISSOURI  
 SIOUX ENERGY CENTER

**PROJECT**  
 GROUNDWATER MONITORING PROGRAM

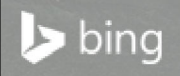


**TITLE**  
 SIOUX ENERGY CENTER GROUNDWATER MONITORING PROGRAMS AND MONITORING WELL LOCATION MAP

<b>CONSULTANT</b>	YYYY-MM-DD	2020-10-12
<b>DESIGNED</b>	JSI	
<b>PREPARED</b>	BTT	
<b>REVIEWED</b>	EMS	
<b>APPROVED</b>	MNH	

<b>PROJECT NO.</b>	<b>CONTROL</b>	<b>REV.</b>	<b>FIGURE</b>
153140602	1240	0	1

PATH: C:\Users\ESchneidek\Code\Associates\153140601\_02 - Ameren CCR GW Monitoring Program 2020 - 15314106 - All Project Files (1) Technical\Work\0003-SEC03-25-Figure-Drawings\PRODUCTION\OHet Map\Figure 3 - CCR Well Programs - Copy.mxd. PRINTED ON: 2021-01-22 AT: 4:28:44 PM



IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI B

**APPENDIX A**

**Laboratory Analytical Data**



January 13, 2020

Jeffrey Ingram  
Golder Associates  
13515 Barrett Parkway Drive  
Suite 260  
Ballwin, MO 63021

RE: Project: AMEREN SIOUX ENERGY CTR SCPA  
Pace Project No.: 60325632

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory on January 04, 2020. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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  
Tommy Goodwin, Golder Associates  
Mark Haddock, Golder Associates  
Eric Schneider, 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 SIOUX ENERGY CTR SCPA

Pace Project No.: 60325632

---

### **Pace Analytical Services Kansas**

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 19-016-0

Arkansas Drinking Water

Illinois Certification #: 004455

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 #: KS000212018-8

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

---

## REPORT OF LABORATORY ANALYSIS

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

## SAMPLE SUMMARY

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60325632

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60325632001	S-UMW-4D	Water	01/03/20 12:12	01/04/20 02:17
60325632002	S-SCPA-FB-1	Water	01/03/20 12:10	01/04/20 02:17
60325632003	S-UMW-3D	Water	01/02/20 10:05	01/04/20 02:17
60325632004	S-UMW-5D	Water	01/02/20 12:08	01/04/20 02:17
60325632005	S-SPCA-DUP-1	Water	01/02/20 08:00	01/04/20 02:17

## REPORT OF LABORATORY ANALYSIS

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

### SAMPLE ANALYTE COUNT

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60325632

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60325632001	S-UMW-4D	EPA 200.7	LRS	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	CNB	1	PASI-K
60325632002	S-SCPA-FB-1	EPA 200.7	LRS	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	CNB	1	PASI-K
60325632003	S-UMW-3D	EPA 200.7	LRS	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	CNB	2	PASI-K
60325632004	S-UMW-5D	SM 2540C	BLA	1	PASI-K
60325632005	S-SPCA-DUP-1	EPA 200.7	LRS	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	CNB	1	PASI-K

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60325632

---

**Sample: S-UMW-4D**      **Lab ID: 60325632001**      Collected: 01/03/20 12:12      Received: 01/04/20 02:17      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>	Analytical Method: EPA 200.7    Preparation Method: EPA 200.7								
Calcium	<b>224000</b>	ug/L	200	32.4	1	01/06/20 15:00	01/07/20 12:18	7440-70-2	M1
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>1240</b>	mg/L	13.3	13.3	1		01/09/20 07:02		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Fluoride	<b>0.89</b>	mg/L	0.20	0.075	1		01/07/20 21:27	16984-48-8	

## REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60325632

---

**Sample: S-SCPA-FB-1**      **Lab ID: 60325632002**      Collected: 01/03/20 12:10      Received: 01/04/20 02:17      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>	Analytical Method: EPA 200.7    Preparation Method: EPA 200.7								
Calcium	<b>62.1J</b>	ug/L	200	32.4	1	01/06/20 15:00	01/07/20 12:27	7440-70-2	B
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>&lt;5.0</b>	mg/L	5.0	5.0	1		01/09/20 07:02		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Fluoride	<b>&lt;0.075</b>	mg/L	0.20	0.075	1		01/07/20 21:42	16984-48-8	

## REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60325632

---

**Sample: S-UMW-3D**      **Lab ID: 60325632003**      Collected: 01/02/20 10:05      Received: 01/04/20 02:17      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>	Analytical Method: EPA 200.7    Preparation Method: EPA 200.7								
Calcium	<b>277000</b>	ug/L	200	32.4	1	01/06/20 15:00	01/07/20 12:35	7440-70-2	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>1380</b>	mg/L	13.3	13.3	1		01/09/20 07:01		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Chloride	<b>13.9</b>	mg/L	1.0	0.39	1		01/07/20 21:58	16887-00-6	
Fluoride	<b>1.2</b>	mg/L	0.20	0.075	1		01/07/20 21:58	16984-48-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60325632

---

**Sample: S-UMW-5D**      **Lab ID: 60325632004**      Collected: 01/02/20 12:08      Received: 01/04/20 02:17      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Total Dissolved Solids	<b>565</b>	mg/L	10.0	10.0	1		01/09/20 07:02		

### REPORT OF LABORATORY ANALYSIS

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



## ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60325632

---

**Sample: S-SPCA-DUP-1**      **Lab ID: 60325632005**      Collected: 01/02/20 08:00      Received: 01/04/20 02:17      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>	Analytical Method: EPA 200.7    Preparation Method: EPA 200.7								
Calcium	<b>273000</b>	ug/L	200	32.4	1	01/06/20 15:00	01/07/20 12:37	7440-70-2	
<b>2540C Total Dissolved Solids</b>	Analytical Method: SM 2540C								
Total Dissolved Solids	<b>1420</b>	mg/L	13.3	13.3	1		01/09/20 07:02		
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0								
Fluoride	<b>1.1</b>	mg/L	0.20	0.075	1		01/07/20 22:14	16984-48-8	

## REPORT OF LABORATORY ANALYSIS

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

**QUALITY CONTROL DATA**

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60325632

QC Batch: 631774 Analysis Method: EPA 200.7  
 QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total  
 Associated Lab Samples: 60325632001, 60325632002, 60325632003, 60325632005

METHOD BLANK: 2572597 Matrix: Water  
 Associated Lab Samples: 60325632001, 60325632002, 60325632003, 60325632005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium	ug/L	67.2J	200	32.4	01/07/20 12:16	

LABORATORY CONTROL SAMPLE: 2572598

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	ug/L	10000	10800	108	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2572599 2572600

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60325632001 Result	Spike Conc.	Spike Conc.	Conc.								
Calcium	ug/L	224000	10000	10000	234000	238000	96	134	70-130	2	20	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**

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60325632

QC Batch: 632004

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Associated Lab Samples: 60325632001, 60325632002, 60325632003, 60325632004, 60325632005

METHOD BLANK: 2573527

Matrix: Water

Associated Lab Samples: 60325632001, 60325632002, 60325632003, 60325632004, 60325632005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	01/09/20 07:01	

LABORATORY CONTROL SAMPLE: 2573528

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	969	97	80-120	

SAMPLE DUPLICATE: 2573529

Parameter	Units	60325647001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	844	817	3	10	

SAMPLE DUPLICATE: 2573530

Parameter	Units	60325711001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	747	771	3	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

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60325632

QC Batch: 631850 Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
Associated Lab Samples: 60325632001, 60325632002, 60325632003, 60325632005

METHOD BLANK: 2572919 Matrix: Water  
Associated Lab Samples: 60325632001, 60325632002, 60325632003, 60325632005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	01/07/20 09:46	
Fluoride	mg/L	<0.075	0.20	0.075	01/07/20 09:46	

METHOD BLANK: 2573742 Matrix: Water  
Associated Lab Samples: 60325632001, 60325632002, 60325632003, 60325632005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	01/08/20 17:50	
Fluoride	mg/L	<0.075	0.20	0.075	01/08/20 17:50	

LABORATORY CONTROL SAMPLE: 2572920

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	2.4	97	90-110	

LABORATORY CONTROL SAMPLE: 2573743

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	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2572921 2572922

Parameter	Units	60325631002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	168	25	25	196	195	112	107	80-120	1	15	E
Fluoride	mg/L	ND	12.5	12.5	14.6	14.6	116	117	80-120	0	15	

MATRIX SPIKE SAMPLE: 2572923

Parameter	Units	60325600002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	3.7	5	8.6	99	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.

### REPORT OF LABORATORY ANALYSIS

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60325632

MATRIX SPIKE SAMPLE:		2572923					
Parameter	Units	60325600002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	0.33	2.5	3.1	111	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.

### REPORT OF LABORATORY ANALYSIS

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

## QUALIFIERS

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60325632

---

### 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.

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

TNI - The NELAC Institute.

### LABORATORIES

PASI-K Pace Analytical Services - Kansas City

### ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

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.

## REPORT OF LABORATORY ANALYSIS

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

### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60325632

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60325632001	S-UMW-4D	EPA 200.7	631774	EPA 200.7	631791
60325632002	S-SCPA-FB-1	EPA 200.7	631774	EPA 200.7	631791
60325632003	S-UMW-3D	EPA 200.7	631774	EPA 200.7	631791
60325632005	S-SPCA-DUP-1	EPA 200.7	631774	EPA 200.7	631791
60325632001	S-UMW-4D	SM 2540C	632004		
60325632002	S-SCPA-FB-1	SM 2540C	632004		
60325632003	S-UMW-3D	SM 2540C	632004		
60325632004	S-UMW-5D	SM 2540C	632004		
60325632005	S-SPCA-DUP-1	SM 2540C	632004		
60325632001	S-UMW-4D	EPA 300.0	631850		
60325632002	S-SCPA-FB-1	EPA 300.0	631850		
60325632003	S-UMW-3D	EPA 300.0	631850		
60325632005	S-SPCA-DUP-1	EPA 300.0	631850		

### REPORT OF LABORATORY ANALYSIS

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



Sample Condition Upon Receipt

WO#: 60325632



Client Name: Golder 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 ZIPIC

Thermometer Used: T298 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 1.2 Corr. Factor 10.0 Corrected 1.2

Date and initials of person examining contents VB 1/31

1/4/2020

1/4/2020

Temperature should be above freezing to 6°C

Table with 3 columns: Question, Yes/No/N/A checkboxes, and Notes. Rows include Chain of Custody, Short Hold Time, Rush Turn Around Time, Sufficient volume, Correct containers used, Pace containers used, Containers intact, Unpreserved soils, Filtered volume, Sample labels match COC, Samples contain multiple phases, Containers requiring pH preservation, Cyanide water sample checks, Trip Blank present, Headspace in VOA vials, Samples from USDA Regulated Area, Additional labels attached to 5035A / TX1005 vials.

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

Person Contacted: Date/Time:

Comments/ Resolution: Sample IDs edited to conform to proper format.

Project Manager Review: [Signature] Date: 1/5/20



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

<b>Section A</b> Required Client Information:		<b>Section B</b> Required Project Information:		<b>Section C</b> Invoice Information:	
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@golider.com	Purchase Order No.:		Address:	
Phone:	636-724-9191	Project Name:	Amerian	Reference:	
Requested Due Date/TAT:	Standard	Project Number:		Face Project Manager:	Jamie Church
				Face Profile #:	9285
REGULATORY AGENCY			Requested Analysis Filtered (Y/N)		
NPDES			Y N		
UST			N N N N N		
GROUND WATER			N N N N N		
RCRA			N N N N N		
MO			N N N N N		
DRINKING WATER			N N N N N		
OTHER			N N N N N		

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WATER WW WASTE WATER WW PRODUCT P SIL S SOLIDS OIL WP AR OT TS	MATRIX CODE (see valid codes to left)	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)	Pace Project No./ Lab I.D.
					COMPOSITE START	COMPOSITE END/GRAB			DATE	TIME	DATE	TIME	Unpreserved	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>				
1	S-UMWD-4D		WT G	G		1/3/20	12:22	2										001	
2	S-SCPA-FB-1		WT G	G		1/3/20	12:10	2										002	
3	UMWD-3D		WT G	G		1/3/20	10:55	2										003	
4	UMWD-5D		WT G	G		1/3/20	12:08	2										004	
5	SPCA-Dup-1		WT G	G		1/3/20	-	2										005	
6			WT G	G															
7			WT G	G															
8			WT G	G															
9			WT G	G															
10			WT G	G															
11			WT G	G															
12			WT G	G															

RELINQUISHED BY / AFFILIATION		DATE	TIME	ACCEPTED BY / AFFILIATION		DATE	TIME	SAMPLE CONDITIONS	
Carmel R. Ball		1/3/20	14:58	Angela M. Mena		01/03	14:44	Temp in °C	1.2
Angela Mena		1/3	17:44	Vicki B. Pace		01/09/2020	17:00	Received on Ice (Y/N)	Y
								Custody Sealed Cooler (Y/N)	Y
								Samples Intact (Y/N)	Y

DATE Signed (MM/DD/YYYY): 1/3/2020

PRINT Name of SAMPLER: Eric Schwabke

SIGNATURE of SAMPLER: [Signature]



**GOLDER**

**MEMORANDUM**

**DATE** January 23, 2020

**Project No.** 153140601

**TO** Project File  
Golder Associates

**CC** Amanda Derhake, Jeff Ingram

**FROM** Tommy Goodwin

**EMAIL** [Tommy\\_Goodwin@golder.com](mailto:Tommy_Goodwin@golder.com)

**DATA VALIDATION SUMMARY, SIOUX ENERGY CENTER – SCPA – DATA PACKAGE 60325632**

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 MS/MSD recovery exceeded the QC limits, the associated sample result was qualified as an estimate (J).

## QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates  
 Project Name: Ameren - Sioux - SCPA  
 Reviewer: T Goodwin

Project Manager: J Ingram  
 Project Number: 153140601  
 Validation Date: 1/23/2020

Laboratory: Pace Analytical - KS SDG #: 60325632  
 Analytical Method (type and no.): EPA 200.7(Metals); SM 2540C (TDS); EPA 300.0 (Anions)  
 Matrix:  Air  Soil/Sed.  Water  Waste   
 Sample Names S-UMW-4D, S-SCPA-FB-1, S-UMW-3D, S-UMW-5D, S-SCPA-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>1/2-3/2020</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 ( <u>grab</u> /composite)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
f) Field QC noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></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 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

<b>Blanks</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
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"/>	

<b>Laboratory Control Sample (LCS)</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
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"/>	

<b>Duplicates</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
c) Were lab duplicates analyzed (note original and duplicate samples)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Unrelated Sample
d) Were lab dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

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

<b>Matrix Spike/Matrix Spike Duplicate (MS/MSD)</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
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 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:**

DUP-1 @ S-UMW-3D; FB-1 @ S-UMW-4D

MB: -32001-03, -05: Ca (67.2)

FB-1: Ca (62.1)

Max Field Duplicate RPD: 9% (Limit 20%); Chloride analyzed in sample but not in duplicate

MS/MSD: -32001: Ca-MSD (134%);

**QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST**

**Data Qualification:**

Sample Name	Constituent(s)	Result	Qualifier	Reason
S-SCPA-FB-1	Calcium (Ca)	200	U	Detected in MB; Result < PQL
S-UMW-4D	Ca	224000	J	MSD Exceeded QC Limits
/				
/				
/				
/				
/				
/				
/				
/				
/				
/				
/				
/				
/				
/				
/				
/				
/				
/				
/				
/				
/				
/				
/				
/				
/				
/				
/				
/				

Signature: *Tommy J. Woodwin Jr.*

Date: 1/23/2020

May 26, 2020

Jeffrey Ingram  
Golder Associates  
13515 Barrett Parkway Drive  
Suite 260  
Ballwin, MO 63021

RE: Project: AMEREN SIOUX SCPA-CA  
Pace Project No.: 60335364

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory between April 24, 2020 and May 01, 2020. 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



## 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 SIOUX SCPA-CA

Pace Project No.: 60335364

---

### **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 #: 9526

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 #: 200030

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

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

## SAMPLE SUMMARY

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60335364001	S-AM-1S	Water	04/22/20 13:25	04/24/20 02:40
60335364002	S-AM-1D	Water	04/22/20 14:10	04/24/20 02:40
60335364003	S-CA-DUP-2	Water	04/23/20 08:00	04/24/20 02:40
60335364004	S-CA-FB-1	Water	04/23/20 09:20	04/24/20 02:40
60335364005	S-CA-FB-2	Water	04/23/20 14:20	04/24/20 02:40
60335364006	S-LMW-1S	Water	04/23/20 13:50	04/24/20 02:40
60335364007	S-LMW-2S	Water	04/23/20 12:30	04/24/20 02:40
60335364008	S-LMW-4S	Water	04/23/20 13:50	04/24/20 02:40
60335364009	S-LMW-5S	Water	04/23/20 10:15	04/24/20 02:40
60335364010	S-LMW-6S	Water	04/23/20 11:05	04/24/20 02:40
60335364011	S-CA-LMW-1S-MS-1	Water	04/23/20 13:50	04/24/20 02:40
60335364012	S-CA-DUP-1	Water	04/23/20 08:00	04/24/20 02:40
60335364013	S-BMW-1S	Water	04/22/20 14:55	04/24/20 02:40
60335364014	S-BMW-3S	Water	04/22/20 13:40	04/24/20 02:40
60335364015	S-CA-LMW-1-MSD-1	Water	04/23/20 13:50	04/24/20 02:40
60335364016	S-UG-3	Water	04/27/20 13:25	04/29/20 03:12
60335364017	S-TP-5D	Water	04/27/20 14:20	04/29/20 03:12
60335364018	S-TP-8D	Water	04/27/20 16:00	04/29/20 03:12
60335364019	S-TP-6S	Water	04/29/20 10:38	05/01/20 02:30
60335364020	S-TP-6D	Water	04/29/20 09:27	05/01/20 02:30
60335364021	S-PZ-1S	Water	04/29/20 10:15	05/01/20 02:30
60335364022	S-TP-2D	Water	04/29/20 12:30	05/01/20 02:30
60335364023	S-TP-4D	Water	04/29/20 12:07	05/01/20 02:30
60335364024	S-TP-3D	Water	04/29/20 13:42	05/01/20 02:30
60335364025	S-PZ-9D	Water	04/30/20 10:30	05/01/20 02:30

## REPORT OF LABORATORY ANALYSIS

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



### SAMPLE ANALYTE COUNT

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60335364001	S-AM-1S	EPA 200.7	JLH	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JLH	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	CNB	1	PASI-K
		SM 4500-S-2 D	CNB	1	PASI-K
60335364002	S-AM-1D	EPA 300.0	JWR, MJK	3	PASI-K
		EPA 200.7	JLH	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JLH	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	CNB	1	PASI-K
60335364003	S-CA-DUP-2	SM 4500-S-2 D	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
		EPA 200.7	JLH	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JLH	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
60335364004	S-CA-FB-1	SM 3500-Fe B#4	CNB	1	PASI-K
		SM 4500-S-2 D	CNB	1	PASI-K
		EPA 300.0	JWR, MJK	3	PASI-K
		EPA 200.7	JLH	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JLH	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA

### REPORT OF LABORATORY ANALYSIS

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

### SAMPLE ANALYTE COUNT

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60335364005	S-CA-FB-2	EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	CNB	1	PASI-K
		SM 4500-S-2 D	CNB	1	PASI-K
		EPA 300.0	MJK	3	PASI-K
		EPA 200.7	JLH	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JLH	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		60335364006	S-LMW-1S	SM 3500-Fe B#4	LDB
SM 3500-Fe B#4	CNB			1	PASI-K
SM 4500-S-2 D	CNB			1	PASI-K
EPA 300.0	MJK			3	PASI-K
EPA 200.7	JLH			13	PASI-K
EPA 200.8	JGP			6	PASI-K
EPA 7470	JLH			1	PASI-K
EPA 903.1	MK1			1	PASI-PA
EPA 904.0	VAL			1	PASI-PA
SM 2320B	MGS			1	PASI-K
SM 2540C	CNB			1	PASI-K
SM 3500-Fe B#4	LDB			1	PASI-K
SM 3500-Fe B#4	CNB			1	PASI-K
SM 4500-S-2 D	CNB			1	PASI-K
60335364007	S-LMW-2S			EPA 300.0	LDB
		EPA 200.7	JLH	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JLH	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K

### REPORT OF LABORATORY ANALYSIS

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

### SAMPLE ANALYTE COUNT

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
60335364008	S-LMW-4S	SM 3500-Fe B#4	CNB	1	PASI-K		
		SM 4500-S-2 D	CNB	1	PASI-K		
		EPA 300.0	JWR, LDB	3	PASI-K		
		EPA 200.7	JLH	13	PASI-K		
		EPA 200.8	JGP	6	PASI-K		
		EPA 7470	JLH	1	PASI-K		
		EPA 903.1	MK1	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		
		SM 2320B	MGS	1	PASI-K		
		SM 2540C	CNB	1	PASI-K		
		SM 3500-Fe B#4	LDB	1	PASI-K		
		SM 3500-Fe B#4	CNB	1	PASI-K		
		SM 4500-S-2 D	CNB	1	PASI-K		
		EPA 300.0	JWR, LDB	3	PASI-K		
60335364009	S-LMW-5S	EPA 200.7	JLH	13	PASI-K		
		EPA 200.8	JGP	6	PASI-K		
		EPA 7470	JLH	1	PASI-K		
		EPA 903.1	MK1	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		
		SM 2320B	MGS	1	PASI-K		
		SM 2540C	CNB	1	PASI-K		
		SM 3500-Fe B#4	LDB	1	PASI-K		
		SM 3500-Fe B#4	CNB	1	PASI-K		
		SM 4500-S-2 D	CNB	1	PASI-K		
		EPA 300.0	JWR, LDB	3	PASI-K		
		EPA 200.7	JLH	13	PASI-K		
		EPA 200.8	JGP	6	PASI-K		
		EPA 7470	JLH	1	PASI-K		
EPA 903.1	MK1	1	PASI-PA				
EPA 904.0	VAL	1	PASI-PA				
SM 2320B	MGS	1	PASI-K				
SM 2540C	CNB	1	PASI-K				
SM 3500-Fe B#4	LDB	1	PASI-K				
SM 3500-Fe B#4	CNB	1	PASI-K				
SM 4500-S-2 D	CNB	1	PASI-K				
EPA 300.0	JWR, LDB	3	PASI-K				
60335364010	S-LMW-6S	EPA 200.7	JLH	13	PASI-K		
		EPA 200.8	JGP	6	PASI-K		
		EPA 7470	JLH	1	PASI-K		
		EPA 903.1	MK1	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		
		SM 2320B	MGS	1	PASI-K		
		SM 2540C	CNB	1	PASI-K		
		SM 3500-Fe B#4	LDB	1	PASI-K		
		SM 3500-Fe B#4	CNB	1	PASI-K		
		SM 4500-S-2 D	CNB	1	PASI-K		
		EPA 300.0	JWR, LDB	3	PASI-K		
		EPA 903.1	MK1	1	PASI-PA		
		60335364011	S-CA-LMW-1S-MS-1	EPA 300.0	JWR, LDB	3	PASI-K
				EPA 903.1	MK1	1	PASI-PA

### REPORT OF LABORATORY ANALYSIS

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

### SAMPLE ANALYTE COUNT

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
60335364012	S-CA-DUP-1	EPA 904.0	VAL	1	PASI-PA		
		EPA 200.7	JLH	13	PASI-K		
		EPA 200.8	JGP	6	PASI-K		
		EPA 7470	JLH	1	PASI-K		
		EPA 903.1	MK1	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		
		SM 2320B	MGS	1	PASI-K		
		SM 2540C	CNB	1	PASI-K		
		SM 3500-Fe B#4	LDB	1	PASI-K		
		SM 3500-Fe B#4	CNB	1	PASI-K		
60335364013	S-BMW-1S	SM 4500-S-2 D	CNB	1	PASI-K		
		EPA 300.0	JWR, LDB	3	PASI-K		
		EPA 200.7	JLH	13	PASI-K		
		EPA 200.8	JGP	6	PASI-K		
		EPA 7470	JLH	1	PASI-K		
		EPA 903.1	MK1	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		
		SM 2320B	MGS	1	PASI-K		
		SM 2540C	CNB	1	PASI-K		
		SM 3500-Fe B#4	LDB	1	PASI-K		
60335364014	S-BMW-3S	SM 3500-Fe B#4	CNB	1	PASI-K		
		SM 4500-S-2 D	CNB	1	PASI-K		
		EPA 300.0	JWR, LDB	3	PASI-K		
		EPA 200.7	JLH	13	PASI-K		
		EPA 200.8	JGP	6	PASI-K		
		EPA 7470	JLH	1	PASI-K		
		EPA 903.1	MK1	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		
		SM 2320B	MGS	1	PASI-K		
		SM 2540C	CNB	1	PASI-K		
60335364015	S-CA-LMW-1-MSD-1	SM 3500-Fe B#4	LDB	1	PASI-K		
		SM 3500-Fe B#4	CNB	1	PASI-K		
		SM 4500-S-2 D	CNB	1	PASI-K		
		EPA 300.0	JWR, LDB	3	PASI-K		
		EPA 903.1	MK1	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		
		60335364016	S-UG-3	EPA 200.7	JLH	13	PASI-K

### REPORT OF LABORATORY ANALYSIS

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

### SAMPLE ANALYTE COUNT

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JLH	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	CNB	1	PASI-K
		SM 4500-S-2 D	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
60335364017	S-TP-5D	EPA 200.7	JLH	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JLH	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	CNB	1	PASI-K
		SM 4500-S-2 D	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
60335364018	S-TP-8D	EPA 200.7	JLH	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JLH	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	CNB	1	PASI-K
		SM 4500-S-2 D	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
60335364019	S-TP-6S	EPA 200.7	HKC	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JLH	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA

### REPORT OF LABORATORY ANALYSIS

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

### SAMPLE ANALYTE COUNT

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60335364020	S-TP-6D	SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	CNB	1	PASI-K
		SM 4500-S-2 D	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
		EPA 200.7	HKC	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JLH	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	CNB	1	PASI-K
SM 4500-S-2 D	CNB	1	PASI-K		
60335364021	S-PZ-1S	EPA 300.0	JWR	3	PASI-K
		EPA 200.7	HKC	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JLH	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	CNB	1	PASI-K
		SM 4500-S-2 D	CNB	1	PASI-K
		EPA 300.0	JWR, LDB	3	PASI-K
		EPA 200.7	HKC	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JLH	1	PASI-K
EPA 903.1	MK1	1	PASI-PA		
EPA 904.0	VAL	1	PASI-PA		
60335364022	S-TP-2D	SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	CNB	1	PASI-K
		EPA 300.0	JWR, LDB	3	PASI-K
		EPA 200.7	HKC	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JLH	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	CNB	1	PASI-K

### REPORT OF LABORATORY ANALYSIS

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

### SAMPLE ANALYTE COUNT

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60335364023	S-TP-4D	SM 4500-S-2 D	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
		EPA 200.7	HKC	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JLH	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
60335364024	S-TP-3D	SM 3500-Fe B#4	CNB	1	PASI-K
		SM 4500-S-2 D	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
		EPA 200.7	HKC	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JLH	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
60335364025	S-PZ-9D	SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	CNB	1	PASI-K
		SM 4500-S-2 D	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
		EPA 200.7	HKC	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JLH	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	CNB	1	PASI-K
		SM 4500-S-2 D	CNB	1	PASI-K
		EPA 300.0	JWR, LDB	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City

PASI-PA = Pace Analytical Services - Greensburg

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

Sample: S-AM-1S Lab ID: 60335364001 Collected: 04/22/20 13:25 Received: 04/24/20 02:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	139	ug/L	5.0	1.8	1	04/29/20 13:20	04/30/20 16:29	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	04/29/20 13:20	04/30/20 16:29	7440-41-7	
Boron	10400	ug/L	100	11.7	1	04/29/20 13:20	04/30/20 16:29	7440-42-8	
Calcium	84400	ug/L	200	32.4	1	04/29/20 13:20	04/30/20 16:29	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	04/29/20 13:20	04/30/20 16:29	7440-48-4	
Iron	2330	ug/L	50.0	26.8	1	04/29/20 13:20	04/30/20 16:29	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	04/29/20 13:20	04/30/20 16:29	7439-92-1	
Lithium	32.9	ug/L	10.0	4.6	1	04/29/20 13:20	04/30/20 16:29	7439-93-2	
Magnesium	18700	ug/L	50.0	19.7	1	04/29/20 13:20	04/30/20 16:29	7439-95-4	
Manganese	555	ug/L	5.0	0.97	1	04/29/20 13:20	04/30/20 16:29	7439-96-5	
Molybdenum	284	ug/L	20.0	1.7	1	04/29/20 13:20	04/30/20 16:29	7439-98-7	
Potassium	7730	ug/L	500	189	1	04/29/20 13:20	04/30/20 16:29	7440-09-7	
Sodium	24100	ug/L	500	107	1	04/29/20 13:20	04/30/20 16:29	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/07/20 09:50	05/14/20 17:58	7440-36-0	
Arsenic	1.5	ug/L	1.0	0.086	1	05/07/20 09:50	05/14/20 17:58	7440-38-2	
Cadmium	0.18J	ug/L	0.50	0.056	1	05/07/20 09:50	05/14/20 17:58	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/07/20 09:50	05/14/20 17:58	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/07/20 09:50	05/14/20 17:58	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/07/20 09:50	05/14/20 17:58	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.085	ug/L	0.20	0.085	1	05/14/20 14:45	05/15/20 14:05	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	265	mg/L	20.0	8.4	1		05/01/20 15:38		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	427	mg/L	10.0	10.0	1		04/28/20 14:15		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	2.2	mg/L	0.050		1		05/12/20 11:05	7439-89-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.084J	mg/L	0.20	0.035	1		04/25/20 10:58		H6

### REPORT OF LABORATORY ANALYSIS

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



## ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

---

**Sample: S-AM-1S**      **Lab ID: 60335364001**      Collected: 04/22/20 13:25      Received: 04/24/20 02:40      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>&lt;0.039</b>	mg/L	0.050	0.039	1		04/27/20 11:30	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>26.6</b>	mg/L	2.0	0.78	2		05/14/20 22:46	16887-00-6	
Fluoride	<b>0.48</b>	mg/L	0.20	0.075	1		05/15/20 17:35	16984-48-8	
Sulfate	<b>55.1</b>	mg/L	5.0	1.4	5		05/15/20 17:51	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-AM-1D**      **Lab ID: 60335364002**      Collected: 04/22/20 14:10      Received: 04/24/20 02:40      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	243	ug/L	5.0	1.8	1	04/29/20 13:20	04/30/20 16:31	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	04/29/20 13:20	04/30/20 16:31	7440-41-7	
Boron	7280	ug/L	100	11.7	1	04/29/20 13:20	04/30/20 16:31	7440-42-8	
Calcium	78200	ug/L	200	32.4	1	04/29/20 13:20	04/30/20 16:31	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	04/29/20 13:20	04/30/20 16:31	7440-48-4	
Iron	3290	ug/L	50.0	26.8	1	04/29/20 13:20	04/30/20 16:31	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	04/29/20 13:20	04/30/20 16:31	7439-92-1	
Lithium	33.8	ug/L	10.0	4.6	1	04/29/20 13:20	04/30/20 16:31	7439-93-2	
Magnesium	17200	ug/L	50.0	19.7	1	04/29/20 13:20	04/30/20 16:31	7439-95-4	
Manganese	374	ug/L	5.0	0.97	1	04/29/20 13:20	04/30/20 16:31	7439-96-5	
Molybdenum	554	ug/L	20.0	1.7	1	04/29/20 13:20	04/30/20 16:31	7439-98-7	
Potassium	7380	ug/L	500	189	1	04/29/20 13:20	04/30/20 16:31	7440-09-7	
Sodium	22900	ug/L	500	107	1	04/29/20 13:20	04/30/20 16:31	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/07/20 09:50	05/14/20 18:01	7440-36-0	
Arsenic	0.21J	ug/L	1.0	0.086	1	05/07/20 09:50	05/14/20 18:01	7440-38-2	
Cadmium	0.29J	ug/L	0.50	0.056	1	05/07/20 09:50	05/14/20 18:01	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/07/20 09:50	05/14/20 18:01	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/07/20 09:50	05/14/20 18:01	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/07/20 09:50	05/14/20 18:01	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470    Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.085	ug/L	0.20	0.085	1	05/14/20 14:45	05/15/20 14:07	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	239	mg/L	20.0	8.4	1		05/01/20 15:42		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	421	mg/L	5.0	5.0	1		04/28/20 14:16		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	3.2	mg/L	0.050		1		05/12/20 11:05	7439-89-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.092J	mg/L	0.20	0.035	1		04/25/20 10:59		H6

## REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

---

**Sample: S-AM-1D**      **Lab ID: 60335364002**      Collected: 04/22/20 14:10      Received: 04/24/20 02:40      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>&lt;0.039</b>	mg/L	0.050	0.039	1		04/27/20 11:30	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>25.7</b>	mg/L	5.0	1.9	5		05/15/20 18:54	16887-00-6	
Fluoride	<b>0.52</b>	mg/L	0.20	0.075	1		05/15/20 18:39	16984-48-8	
Sulfate	<b>80.1</b>	mg/L	5.0	1.4	5		05/15/20 18:54	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

Sample: S-CA-DUP-2 Lab ID: 60335364003 Collected: 04/23/20 08:00 Received: 04/24/20 02:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	104	ug/L	5.0	1.8	1	04/29/20 13:20	04/30/20 16:33	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	04/29/20 13:20	04/30/20 16:33	7440-41-7	
Boron	10600	ug/L	100	11.7	1	04/29/20 13:20	04/30/20 16:33	7440-42-8	
Calcium	162000	ug/L	200	32.4	1	04/29/20 13:20	04/30/20 16:33	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	04/29/20 13:20	04/30/20 16:33	7440-48-4	
Iron	<26.8	ug/L	50.0	26.8	1	04/29/20 13:20	04/30/20 16:33	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	04/29/20 13:20	04/30/20 16:33	7439-92-1	
Lithium	29.6	ug/L	10.0	4.6	1	04/29/20 13:20	04/30/20 16:33	7439-93-2	
Magnesium	26100	ug/L	50.0	19.7	1	04/29/20 13:20	04/30/20 16:33	7439-95-4	
Manganese	281	ug/L	5.0	0.97	1	04/29/20 13:20	04/30/20 16:33	7439-96-5	
Molybdenum	1170	ug/L	20.0	1.7	1	04/29/20 13:20	04/30/20 16:33	7439-98-7	
Potassium	8150	ug/L	500	189	1	04/29/20 13:20	04/30/20 16:33	7440-09-7	
Sodium	62400	ug/L	500	107	1	04/29/20 13:20	04/30/20 16:33	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.14J	ug/L	1.0	0.097	1	05/07/20 09:50	05/14/20 18:03	7440-36-0	
Arsenic	0.91J	ug/L	1.0	0.086	1	05/07/20 09:50	05/14/20 18:03	7440-38-2	
Cadmium	0.92	ug/L	0.50	0.056	1	05/07/20 09:50	05/14/20 18:03	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/07/20 09:50	05/14/20 18:03	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/07/20 09:50	05/14/20 18:03	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/07/20 09:50	05/14/20 18:03	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.085	ug/L	0.20	0.085	1	05/14/20 14:45	05/15/20 14:09	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	240	mg/L	20.0	8.4	1		05/04/20 13:27		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	856	mg/L	10.0	10.0	1		04/29/20 10:00		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.019J	mg/L	0.050		1		05/12/20 11:05	7439-89-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.035	mg/L	0.20	0.035	1		04/25/20 10:59		H6

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-CA-DUP-2**      **Lab ID: 60335364003**      Collected: 04/23/20 08:00      Received: 04/24/20 02:40      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>&lt;0.039</b>	mg/L	0.050	0.039	1		04/27/20 11:31	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>63.4</b>	mg/L	5.0	1.9	5		05/14/20 23:49	16887-00-6	
Fluoride	<b>0.36</b>	mg/L	0.20	0.075	1		05/15/20 19:10	16984-48-8	
Sulfate	<b>354</b>	mg/L	50.0	13.9	50		05/15/20 19:26	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-CA-FB-1**      **Lab ID: 60335364004**      Collected: 04/23/20 09:20      Received: 04/24/20 02:40      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
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	04/29/20 13:20	04/30/20 16:35	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	04/29/20 13:20	04/30/20 16:35	7440-41-7	
Boron	17.8J	ug/L	100	11.7	1	04/29/20 13:20	04/30/20 16:35	7440-42-8	
Calcium	<32.4	ug/L	200	32.4	1	04/29/20 13:20	04/30/20 16:35	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	04/29/20 13:20	04/30/20 16:35	7440-48-4	
Iron	<26.8	ug/L	50.0	26.8	1	04/29/20 13:20	04/30/20 16:35	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	04/29/20 13:20	04/30/20 16:35	7439-92-1	
Lithium	<4.6	ug/L	10.0	4.6	1	04/29/20 13:20	04/30/20 16:35	7439-93-2	
Magnesium	<19.7	ug/L	50.0	19.7	1	04/29/20 13:20	04/30/20 16:35	7439-95-4	
Manganese	<0.97	ug/L	5.0	0.97	1	04/29/20 13:20	04/30/20 16:35	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	04/29/20 13:20	04/30/20 16:35	7439-98-7	
Potassium	<189	ug/L	500	189	1	04/29/20 13:20	04/30/20 16:35	7440-09-7	
Sodium	<107	ug/L	500	107	1	04/29/20 13:20	04/30/20 16:35	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/07/20 09:50	05/14/20 18:05	7440-36-0	
Arsenic	<0.086	ug/L	1.0	0.086	1	05/07/20 09:50	05/14/20 18:05	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	05/07/20 09:50	05/14/20 18:05	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/07/20 09:50	05/14/20 18:05	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/07/20 09:50	05/14/20 18:05	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/07/20 09:50	05/14/20 18:05	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470    Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.085	ug/L	0.20	0.085	1	05/14/20 14:45	05/15/20 14:12	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<8.4	mg/L	20.0	8.4	1		05/04/20 13:31		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	10.0	mg/L	5.0	5.0	1		04/29/20 10:00		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.0000000 0010J	mg/L	0.050		1		05/12/20 11:05	7439-89-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.035	mg/L	0.20	0.035	1		04/25/20 11:00		H6

## REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

---

**Sample: S-CA-FB-1**      **Lab ID: 60335364004**      Collected: 04/23/20 09:20      Received: 04/24/20 02:40      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<b>&lt;0.039</b>	mg/L	0.050	0.039	1		04/27/20 11:31	18496-25-8	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	<b>&lt;0.39</b>	mg/L	1.0	0.39	1		05/15/20 00:05	16887-00-6	
Fluoride	<b>&lt;0.075</b>	mg/L	0.20	0.075	1		05/15/20 00:05	16984-48-8	
Sulfate	<b>&lt;0.28</b>	mg/L	1.0	0.28	1		05/15/20 00:05	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

Sample: S-CA-FB-2 Lab ID: 60335364005 Collected: 04/23/20 14:20 Received: 04/24/20 02:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
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	04/29/20 13:20	04/30/20 16:37	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	04/29/20 13:20	04/30/20 16:37	7440-41-7	
Boron	<11.7	ug/L	100	11.7	1	04/29/20 13:20	04/30/20 16:37	7440-42-8	
Calcium	<32.4	ug/L	200	32.4	1	04/29/20 13:20	04/30/20 16:37	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	04/29/20 13:20	04/30/20 16:37	7440-48-4	
Iron	<26.8	ug/L	50.0	26.8	1	04/29/20 13:20	04/30/20 16:37	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	04/29/20 13:20	04/30/20 16:37	7439-92-1	
Lithium	<4.6	ug/L	10.0	4.6	1	04/29/20 13:20	04/30/20 16:37	7439-93-2	
Magnesium	<19.7	ug/L	50.0	19.7	1	04/29/20 13:20	04/30/20 16:37	7439-95-4	
Manganese	<0.97	ug/L	5.0	0.97	1	04/29/20 13:20	04/30/20 16:37	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	04/29/20 13:20	04/30/20 16:37	7439-98-7	
Potassium	<189	ug/L	500	189	1	04/29/20 13:20	04/30/20 16:37	7440-09-7	
Sodium	<107	ug/L	500	107	1	04/29/20 13:20	04/30/20 16:37	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/07/20 09:50	05/14/20 18:07	7440-36-0	
Arsenic	<0.086	ug/L	1.0	0.086	1	05/07/20 09:50	05/14/20 18:07	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	05/07/20 09:50	05/14/20 18:07	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/07/20 09:50	05/14/20 18:07	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/07/20 09:50	05/14/20 18:07	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/07/20 09:50	05/14/20 18:07	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.085	ug/L	0.20	0.085	1	05/14/20 14:45	05/15/20 14:14	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<8.4	mg/L	20.0	8.4	1		05/04/20 13:35		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	8.0	mg/L	5.0	5.0	1		04/29/20 10:00		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.0000000 0010J	mg/L	0.050		1		05/12/20 11:05	7439-89-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.035	mg/L	0.20	0.035	1		04/25/20 11:02		H6

### REPORT OF LABORATORY ANALYSIS

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



## ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

---

**Sample: S-CA-FB-2**      **Lab ID: 60335364005**      Collected: 04/23/20 14:20      Received: 04/24/20 02:40      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<0.039	mg/L	0.050	0.039	1		04/27/20 11:31	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<0.39	mg/L	1.0	0.39	1		05/15/20 01:09	16887-00-6	
Fluoride	<0.075	mg/L	0.20	0.075	1		05/15/20 01:09	16984-48-8	
Sulfate	<0.28	mg/L	1.0	0.28	1		05/15/20 01:09	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

Sample: S-LMW-1S Lab ID: 60335364006 Collected: 04/23/20 13:50 Received: 04/24/20 02:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	155	ug/L	5.0	1.8	1	04/29/20 13:20	04/30/20 16:40	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	04/29/20 13:20	04/30/20 16:40	7440-41-7	
Boron	1030	ug/L	100	11.7	1	04/29/20 13:20	04/30/20 16:40	7440-42-8	
Calcium	83300	ug/L	200	32.4	1	04/29/20 13:20	04/30/20 16:40	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	04/29/20 13:20	04/30/20 16:40	7440-48-4	
Iron	<26.8	ug/L	50.0	26.8	1	04/29/20 13:20	04/30/20 16:40	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	04/29/20 13:20	04/30/20 16:40	7439-92-1	
Lithium	22.2	ug/L	10.0	4.6	1	04/29/20 13:20	04/30/20 16:40	7439-93-2	
Magnesium	20800	ug/L	50.0	19.7	1	04/29/20 13:20	04/30/20 16:40	7439-95-4	
Manganese	64.9	ug/L	5.0	0.97	1	04/29/20 13:20	04/30/20 16:40	7439-96-5	
Molybdenum	108	ug/L	20.0	1.7	1	04/29/20 13:20	04/30/20 16:40	7439-98-7	
Potassium	6980	ug/L	500	189	1	04/29/20 13:20	04/30/20 16:40	7440-09-7	
Sodium	24300	ug/L	500	107	1	04/29/20 13:20	04/30/20 16:40	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.34J	ug/L	1.0	0.097	1	05/07/20 09:50	05/14/20 18:09	7440-36-0	
Arsenic	2.0	ug/L	1.0	0.086	1	05/07/20 09:50	05/14/20 18:09	7440-38-2	
Cadmium	0.080J	ug/L	0.50	0.056	1	05/07/20 09:50	05/14/20 18:09	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/07/20 09:50	05/14/20 18:09	7440-47-3	
Selenium	5.8	ug/L	1.0	0.18	1	05/07/20 09:50	05/14/20 18:09	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/07/20 09:50	05/14/20 18:09	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.085	ug/L	0.20	0.085	1	05/14/20 14:45	05/15/20 14:16	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	216	mg/L	20.0	8.4	1		05/04/20 13:39		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	412	mg/L	5.0	5.0	1		04/29/20 10:00		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.0000000 0010J	mg/L	0.050		1		05/12/20 11:05	7439-89-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.035	mg/L	0.20	0.035	1		04/25/20 11:01		H6

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

---

**Sample: S-LMW-1S**      **Lab ID: 60335364006**      Collected: 04/23/20 13:50      Received: 04/24/20 02:40      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<b>&lt;0.039</b>	mg/L	0.050	0.039	1		04/27/20 11:32	18496-25-8	M1
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	<b>20.4</b>	mg/L	2.0	0.78	2		05/18/20 21:44	16887-00-6	
Fluoride	<b>0.44</b>	mg/L	0.20	0.075	1		05/18/20 20:31	16984-48-8	
Sulfate	<b>106</b>	mg/L	10.0	2.8	10		05/18/20 22:28	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

Sample: S-LMW-2S Lab ID: 60335364007 Collected: 04/23/20 12:30 Received: 04/24/20 02:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	109	ug/L	5.0	1.8	1	04/29/20 13:20	04/30/20 16:46	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	04/29/20 13:20	04/30/20 16:46	7440-41-7	
Boron	11100	ug/L	100	11.7	1	04/29/20 13:20	04/30/20 16:46	7440-42-8	
Calcium	170000	ug/L	200	32.4	1	04/29/20 13:20	04/30/20 16:46	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	04/29/20 13:20	04/30/20 16:46	7440-48-4	
Iron	<26.8	ug/L	50.0	26.8	1	04/29/20 13:20	04/30/20 16:46	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	04/29/20 13:20	04/30/20 16:46	7439-92-1	
Lithium	31.8	ug/L	10.0	4.6	1	04/29/20 13:20	04/30/20 16:46	7439-93-2	
Magnesium	27100	ug/L	50.0	19.7	1	04/29/20 13:20	04/30/20 16:46	7439-95-4	
Manganese	290	ug/L	5.0	0.97	1	04/29/20 13:20	04/30/20 16:46	7439-96-5	
Molybdenum	1230	ug/L	20.0	1.7	1	04/29/20 13:20	04/30/20 16:46	7439-98-7	
Potassium	8640	ug/L	500	189	1	04/29/20 13:20	04/30/20 16:46	7440-09-7	
Sodium	65400	ug/L	500	107	1	04/29/20 13:20	04/30/20 16:46	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.15J	ug/L	1.0	0.097	1	05/07/20 09:50	05/14/20 18:24	7440-36-0	
Arsenic	0.87J	ug/L	1.0	0.086	1	05/07/20 09:50	05/14/20 18:24	7440-38-2	
Cadmium	0.91	ug/L	0.50	0.056	1	05/07/20 09:50	05/14/20 18:24	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/07/20 09:50	05/14/20 18:24	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/07/20 09:50	05/14/20 18:24	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/07/20 09:50	05/14/20 18:24	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.085	ug/L	0.20	0.085	1	05/14/20 14:45	05/15/20 14:28	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	248	mg/L	20.0	8.4	1		05/04/20 13:59		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	862	mg/L	10.0	10.0	1		04/29/20 10:00		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.026J	mg/L	0.050		1		05/12/20 11:05	7439-89-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.035	mg/L	0.20	0.035	1		04/25/20 11:00		H6

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

---

**Sample: S-LMW-2S**      **Lab ID: 60335364007**      Collected: 04/23/20 12:30      Received: 04/24/20 02:40      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<b>&lt;0.039</b>	mg/L	0.050	0.039	1		04/27/20 11:32	18496-25-8	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	<b>64.3</b>	mg/L	10.0	3.9	10		05/18/20 23:26	16887-00-6	
Fluoride	<b>0.41</b>	mg/L	0.20	0.075	1		05/18/20 23:12	16984-48-8	
Sulfate	<b>321</b>	mg/L	20.0	5.6	20		05/19/20 12:36	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

Sample: S-LMW-4S Lab ID: 60335364008 Collected: 04/23/20 13:50 Received: 04/24/20 02:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	210	ug/L	5.0	1.8	1	04/29/20 13:20	04/30/20 16:52	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	04/29/20 13:20	04/30/20 16:52	7440-41-7	
Boron	2020	ug/L	100	11.7	1	04/29/20 13:20	04/30/20 16:52	7440-42-8	
Calcium	182000	ug/L	200	32.4	1	04/29/20 13:20	04/30/20 16:52	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	04/29/20 13:20	04/30/20 16:52	7440-48-4	
Iron	<26.8	ug/L	50.0	26.8	1	04/29/20 13:20	04/30/20 16:52	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	04/29/20 13:20	04/30/20 16:52	7439-92-1	
Lithium	27.4	ug/L	10.0	4.6	1	04/29/20 13:20	04/30/20 16:52	7439-93-2	
Magnesium	38800	ug/L	50.0	19.7	1	04/29/20 13:20	04/30/20 16:52	7439-95-4	
Manganese	20.7	ug/L	5.0	0.97	1	04/29/20 13:20	04/30/20 16:52	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	04/29/20 13:20	04/30/20 16:52	7439-98-7	
Potassium	4600	ug/L	500	189	1	04/29/20 13:20	04/30/20 16:52	7440-09-7	
Sodium	17600	ug/L	500	107	1	04/29/20 13:20	04/30/20 16:52	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.18J	ug/L	1.0	0.097	1	05/07/20 09:50	05/14/20 18:26	7440-36-0	
Arsenic	0.55J	ug/L	1.0	0.086	1	05/07/20 09:50	05/14/20 18:26	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	05/07/20 09:50	05/14/20 18:26	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/07/20 09:50	05/14/20 18:26	7440-47-3	
Selenium	0.64J	ug/L	1.0	0.18	1	05/07/20 09:50	05/14/20 18:26	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/07/20 09:50	05/14/20 18:26	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.085	ug/L	0.20	0.085	1	05/14/20 14:45	05/15/20 14:30	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	501	mg/L	20.0	8.4	1		05/04/20 14:06		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	729	mg/L	10.0	10.0	1		04/29/20 10:00		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.0083J	mg/L	0.050		1		05/12/20 11:05	7439-89-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.035	mg/L	0.20	0.035	1		04/25/20 11:01		H6

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-LMW-4S**      **Lab ID: 60335364008**      Collected: 04/23/20 13:50      Received: 04/24/20 02:40      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>&lt;0.039</b>	mg/L	0.050	0.039	1		04/27/20 11:33	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>13.8</b>	mg/L	1.0	0.39	1		05/19/20 00:25	16887-00-6	
Fluoride	<b>0.23</b>	mg/L	0.20	0.075	1		05/19/20 00:25	16984-48-8	
Sulfate	<b>107</b>	mg/L	10.0	2.8	10		05/19/20 12:51	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-LMW-5S**      **Lab ID: 60335364009**      Collected: 04/23/20 10:15      Received: 04/24/20 02:40      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	58.9	ug/L	5.0	1.8	1	04/29/20 13:20	04/30/20 16:54	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	04/29/20 13:20	04/30/20 16:54	7440-41-7	
Boron	17300	ug/L	100	11.7	1	04/29/20 13:20	04/30/20 16:54	7440-42-8	
Calcium	294000	ug/L	200	32.4	1	04/29/20 13:20	04/30/20 16:54	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	04/29/20 13:20	04/30/20 16:54	7440-48-4	
Iron	82.4	ug/L	50.0	26.8	1	04/29/20 13:20	04/30/20 16:54	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	04/29/20 13:20	04/30/20 16:54	7439-92-1	
Lithium	49.6	ug/L	10.0	4.6	1	04/29/20 13:20	04/30/20 16:54	7439-93-2	
Magnesium	59200	ug/L	50.0	19.7	1	04/29/20 13:20	04/30/20 16:54	7439-95-4	
Manganese	1770	ug/L	5.0	0.97	1	04/29/20 13:20	04/30/20 16:54	7439-96-5	
Molybdenum	2420	ug/L	20.0	1.7	1	04/29/20 13:20	04/30/20 16:54	7439-98-7	
Potassium	5070	ug/L	500	189	1	04/29/20 13:20	04/30/20 16:54	7440-09-7	
Sodium	188000	ug/L	500	107	1	04/29/20 13:20	04/30/20 16:54	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.11J	ug/L	1.0	0.097	1	05/07/20 09:50	05/14/20 18:28	7440-36-0	
Arsenic	0.81J	ug/L	1.0	0.086	1	05/07/20 09:50	05/14/20 18:28	7440-38-2	
Cadmium	1.5	ug/L	0.50	0.056	1	05/07/20 09:50	05/14/20 18:28	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/07/20 09:50	05/14/20 18:28	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/07/20 09:50	05/14/20 18:28	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/07/20 09:50	05/14/20 18:28	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470    Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.085	ug/L	0.20	0.085	1	05/14/20 14:45	05/15/20 14:32	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	294	mg/L	20.0	8.4	1		05/04/20 14:11		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1900	mg/L	20.0	20.0	1		04/29/20 10:01		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.082	mg/L	0.050		1		05/12/20 11:05	7439-89-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.035	mg/L	0.20	0.035	1		04/25/20 11:00		H6

## REPORT OF LABORATORY ANALYSIS

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



## ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

---

**Sample: S-LMW-5S**      **Lab ID: 60335364009**      Collected: 04/23/20 10:15      Received: 04/24/20 02:40      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<b>&lt;0.039</b>	mg/L	0.050	0.039	1		04/27/20 11:33	18496-25-8	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	<b>30.9</b>	mg/L	2.0	0.78	2		05/19/20 13:07	16887-00-6	
Fluoride	<b>0.37</b>	mg/L	0.20	0.075	1		05/19/20 00:54	16984-48-8	
Sulfate	<b>1100</b>	mg/L	100	27.8	100		05/19/20 13:23	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

Sample: S-LMW-6S Lab ID: 60335364010 Collected: 04/23/20 11:05 Received: 04/24/20 02:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	54.2	ug/L	5.0	1.8	1	04/29/20 13:20	04/30/20 16:56	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	04/29/20 13:20	04/30/20 16:56	7440-41-7	
Boron	19400	ug/L	100	11.7	1	04/29/20 13:20	04/30/20 16:56	7440-42-8	
Calcium	324000	ug/L	200	32.4	1	04/29/20 13:20	04/30/20 16:56	7440-70-2	
Cobalt	10.7	ug/L	5.0	1.5	1	04/29/20 13:20	04/30/20 16:56	7440-48-4	
Iron	<26.8	ug/L	50.0	26.8	1	04/29/20 13:20	04/30/20 16:56	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	04/29/20 13:20	04/30/20 16:56	7439-92-1	
Lithium	22.1	ug/L	10.0	4.6	1	04/29/20 13:20	04/30/20 16:56	7439-93-2	
Magnesium	82600	ug/L	50.0	19.7	1	04/29/20 13:20	04/30/20 16:56	7439-95-4	
Manganese	678	ug/L	5.0	0.97	1	04/29/20 13:20	04/30/20 16:56	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	04/29/20 13:20	04/30/20 16:56	7439-98-7	
Potassium	5580	ug/L	500	189	1	04/29/20 13:20	04/30/20 16:56	7440-09-7	
Sodium	123000	ug/L	500	107	1	04/29/20 13:20	04/30/20 16:56	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.18J	ug/L	1.0	0.097	1	05/07/20 09:50	05/14/20 18:30	7440-36-0	
Arsenic	0.79J	ug/L	1.0	0.086	1	05/07/20 09:50	05/14/20 18:30	7440-38-2	
Cadmium	0.84	ug/L	0.50	0.056	1	05/07/20 09:50	05/14/20 18:30	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/07/20 09:50	05/14/20 18:30	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/07/20 09:50	05/14/20 18:30	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/07/20 09:50	05/14/20 18:30	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.085	ug/L	0.20	0.085	1	05/14/20 14:45	05/15/20 14:35	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	382	mg/L	20.0	8.4	1		05/04/20 16:55		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1900	mg/L	20.0	20.0	1		04/29/20 10:01		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.025J	mg/L	0.050		1		05/12/20 11:05	7439-89-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.035	mg/L	0.20	0.035	1		04/25/20 11:00		H6

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

---

**Sample: S-LMW-6S**      **Lab ID: 60335364010**      Collected: 04/23/20 11:05      Received: 04/24/20 02:40      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<b>&lt;0.039</b>	mg/L	0.050	0.039	1		04/27/20 11:33	18496-25-8	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	<b>5.0</b>	mg/L	1.0	0.39	1		05/19/20 01:23	16887-00-6	
Fluoride	<b>0.20</b>	mg/L	0.20	0.075	1		05/19/20 01:23	16984-48-8	
Sulfate	<b>996</b>	mg/L	100	27.8	100		05/19/20 13:39	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-CA-DUP-1**      **Lab ID: 60335364012**      Collected: 04/23/20 08:00      Received: 04/24/20 02:40      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City									
Barium	55.0	ug/L	5.0	1.8	1	04/29/20 13:20	04/30/20 16:58	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	04/29/20 13:20	04/30/20 16:58	7440-41-7	
Boron	19900	ug/L	100	11.7	1	04/29/20 13:20	04/30/20 16:58	7440-42-8	
Calcium	330000	ug/L	200	32.4	1	04/29/20 13:20	04/30/20 16:58	7440-70-2	
Cobalt	10	ug/L	5.0	1.5	1	04/29/20 13:20	04/30/20 16:58	7440-48-4	
Iron	33.5J	ug/L	50.0	26.8	1	04/29/20 13:20	04/30/20 16:58	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	04/29/20 13:20	04/30/20 16:58	7439-92-1	
Lithium	22.0	ug/L	10.0	4.6	1	04/29/20 13:20	04/30/20 16:58	7439-93-2	
Magnesium	84600	ug/L	50.0	19.7	1	04/29/20 13:20	04/30/20 16:58	7439-95-4	
Manganese	704	ug/L	5.0	0.97	1	04/29/20 13:20	04/30/20 16:58	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	04/29/20 13:20	04/30/20 16:58	7439-98-7	
Potassium	5660	ug/L	500	189	1	04/29/20 13:20	04/30/20 16:58	7440-09-7	
Sodium	126000	ug/L	500	107	1	04/29/20 13:20	04/30/20 16:58	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City									
Antimony	0.17J	ug/L	1.0	0.097	1	05/07/20 09:50	05/14/20 18:32	7440-36-0	
Arsenic	0.77J	ug/L	1.0	0.086	1	05/07/20 09:50	05/14/20 18:32	7440-38-2	
Cadmium	0.81	ug/L	0.50	0.056	1	05/07/20 09:50	05/14/20 18:32	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/07/20 09:50	05/14/20 18:32	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/07/20 09:50	05/14/20 18:32	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/07/20 09:50	05/14/20 18:32	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470    Preparation Method: EPA 7470 Pace Analytical Services - Kansas City									
Mercury	<0.085	ug/L	0.20	0.085	1	05/14/20 14:45	05/15/20 14:37	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	403	mg/L	20.0	8.4	1		05/04/20 17:07		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C Pace Analytical Services - Kansas City									
Total Dissolved Solids	1890	mg/L	20.0	20.0	1		04/29/20 10:01		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City									
Iron, Ferric	0.033J	mg/L	0.050		1		05/12/20 11:05	7439-89-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.035	mg/L	0.20	0.035	1		04/25/20 11:00		H6

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

---

**Sample: S-CA-DUP-1**      **Lab ID: 60335364012**      Collected: 04/23/20 08:00      Received: 04/24/20 02:40      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<b>0.051</b>	mg/L	0.050	0.039	1		04/27/20 11:34	18496-25-8	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	<b>4.9</b>	mg/L	1.0	0.39	1		05/19/20 01:53	16887-00-6	
Fluoride	<b>0.20J</b>	mg/L	0.20	0.075	1		05/19/20 01:53	16984-48-8	
Sulfate	<b>1070</b>	mg/L	100	27.8	100		05/19/20 14:42	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

Sample: S-BMW-1S Lab ID: 60335364013 Collected: 04/22/20 14:55 Received: 04/24/20 02:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	144	ug/L	5.0	1.8	1	04/29/20 13:20	04/30/20 17:01	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	04/29/20 13:20	04/30/20 17:01	7440-41-7	
Boron	114	ug/L	100	11.7	1	04/29/20 13:20	04/30/20 17:01	7440-42-8	
Calcium	150000	ug/L	200	32.4	1	04/29/20 13:20	04/30/20 17:01	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	04/29/20 13:20	04/30/20 17:01	7440-48-4	
Iron	<26.8	ug/L	50.0	26.8	1	04/29/20 13:20	04/30/20 17:01	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	04/29/20 13:20	04/30/20 17:01	7439-92-1	
Lithium	<4.6	ug/L	10.0	4.6	1	04/29/20 13:20	04/30/20 17:01	7439-93-2	
Magnesium	31500	ug/L	50.0	19.7	1	04/29/20 13:20	04/30/20 17:01	7439-95-4	
Manganese	434	ug/L	5.0	0.97	1	04/29/20 13:20	04/30/20 17:01	7439-96-5	
Molybdenum	2.7J	ug/L	20.0	1.7	1	04/29/20 13:20	04/30/20 17:01	7439-98-7	
Potassium	378J	ug/L	500	189	1	04/29/20 13:20	04/30/20 17:01	7440-09-7	
Sodium	4980	ug/L	500	107	1	04/29/20 13:20	04/30/20 17:01	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/07/20 09:50	05/14/20 18:34	7440-36-0	
Arsenic	1.0	ug/L	1.0	0.086	1	05/07/20 09:50	05/14/20 18:34	7440-38-2	
Cadmium	0.11J	ug/L	0.50	0.056	1	05/07/20 09:50	05/14/20 18:34	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/07/20 09:50	05/14/20 18:34	7440-47-3	
Selenium	0.32J	ug/L	1.0	0.18	1	05/07/20 09:50	05/14/20 18:34	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/07/20 09:50	05/14/20 18:34	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.085	ug/L	0.20	0.085	1	05/14/20 14:45	05/15/20 14:39	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	438	mg/L	20.0	8.4	1		05/01/20 15:49		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	565	mg/L	10.0	10.0	1		04/28/20 14:16		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.0029J	mg/L	0.050		1		05/12/20 11:05	7439-89-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.035	mg/L	0.20	0.035	1		04/25/20 10:59		H6

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

---

**Sample: S-BMW-1S**      **Lab ID: 60335364013**      Collected: 04/22/20 14:55      Received: 04/24/20 02:40      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>&lt;0.039</b>	mg/L	0.050	0.039	1		04/27/20 11:30	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>8.0</b>	mg/L	1.0	0.39	1		05/19/20 02:22	16887-00-6	
Fluoride	<b>0.37</b>	mg/L	0.20	0.075	1		05/19/20 02:22	16984-48-8	
Sulfate	<b>27.0</b>	mg/L	2.0	0.56	2		05/19/20 15:30	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

Sample: S-BMW-3S Lab ID: 60335364014 Collected: 04/22/20 13:40 Received: 04/24/20 02:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	132	ug/L	5.0	1.8	1	04/29/20 13:20	04/30/20 17:03	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	04/29/20 13:20	04/30/20 17:03	7440-41-7	
Boron	95.9J	ug/L	100	11.7	1	04/29/20 13:20	04/30/20 17:03	7440-42-8	
Calcium	134000	ug/L	200	32.4	1	04/29/20 13:20	04/30/20 17:03	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	04/29/20 13:20	04/30/20 17:03	7440-48-4	
Iron	<26.8	ug/L	50.0	26.8	1	04/29/20 13:20	04/30/20 17:03	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	04/29/20 13:20	04/30/20 17:03	7439-92-1	
Lithium	9.3J	ug/L	10.0	4.6	1	04/29/20 13:20	04/30/20 17:03	7439-93-2	
Magnesium	26000	ug/L	50.0	19.7	1	04/29/20 13:20	04/30/20 17:03	7439-95-4	
Manganese	318	ug/L	5.0	0.97	1	04/29/20 13:20	04/30/20 17:03	7439-96-5	
Molybdenum	2.4J	ug/L	20.0	1.7	1	04/29/20 13:20	04/30/20 17:03	7439-98-7	
Potassium	490J	ug/L	500	189	1	04/29/20 13:20	04/30/20 17:03	7440-09-7	
Sodium	5470	ug/L	500	107	1	04/29/20 13:20	04/30/20 17:03	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/07/20 09:50	05/14/20 18:36	7440-36-0	
Arsenic	0.58J	ug/L	1.0	0.086	1	05/07/20 09:50	05/14/20 18:36	7440-38-2	
Cadmium	0.077J	ug/L	0.50	0.056	1	05/07/20 09:50	05/14/20 18:36	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/07/20 09:50	05/14/20 18:36	7440-47-3	
Selenium	0.28J	ug/L	1.0	0.18	1	05/07/20 09:50	05/14/20 18:36	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/07/20 09:50	05/14/20 18:36	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.085	ug/L	0.20	0.085	1	05/14/20 14:45	05/15/20 14:41	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	395	mg/L	20.0	8.4	1		05/01/20 15:54		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	472	mg/L	10.0	10.0	1		04/29/20 09:58		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.024J	mg/L	0.050		1		05/12/20 11:05	7439-89-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.035	mg/L	0.20	0.035	1		04/25/20 10:58		H6

### REPORT OF LABORATORY ANALYSIS

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



### ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-BMW-3S**      **Lab ID: 60335364014**      Collected: 04/22/20 13:40      Received: 04/24/20 02:40      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>&lt;0.039</b>	mg/L	0.050	0.039	1		04/27/20 11:31	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>13.2</b>	mg/L	1.0	0.39	1		05/19/20 03:20	16887-00-6	
Fluoride	<b>0.43</b>	mg/L	0.20	0.075	1		05/19/20 03:20	16984-48-8	
Sulfate	<b>29.6</b>	mg/L	2.0	0.56	2		05/19/20 15:45	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-UG-3**      **Lab ID: 60335364016**      Collected: 04/27/20 13:25      Received: 04/29/20 03:12      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City									
Barium	<b>226</b>	ug/L	5.0	1.8	1	05/04/20 10:20	05/05/20 12:00	7440-39-3	
Beryllium	<b>&lt;0.49</b>	ug/L	1.0	0.49	1	05/04/20 10:20	05/05/20 12:00	7440-41-7	
Boron	<b>313</b>	ug/L	100	11.7	1	05/04/20 10:20	05/05/20 12:00	7440-42-8	
Calcium	<b>129000</b>	ug/L	200	32.4	1	05/04/20 10:20	05/05/20 12:00	7440-70-2	
Cobalt	<b>1.5J</b>	ug/L	5.0	1.5	1	05/04/20 10:20	05/05/20 12:00	7440-48-4	
Iron	<b>&lt;26.8</b>	ug/L	50.0	26.8	1	05/04/20 10:20	05/05/20 12:00	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	05/04/20 10:20	05/05/20 12:00	7439-92-1	
Lithium	<b>25.3</b>	ug/L	10.0	4.6	1	05/04/20 10:20	05/05/20 12:00	7439-93-2	
Magnesium	<b>24800</b>	ug/L	50.0	19.7	1	05/04/20 10:20	05/05/20 12:00	7439-95-4	
Manganese	<b>706</b>	ug/L	5.0	0.97	1	05/04/20 10:20	05/05/20 12:00	7439-96-5	
Molybdenum	<b>3.4J</b>	ug/L	20.0	1.7	1	05/04/20 10:20	05/05/20 12:00	7439-98-7	
Potassium	<b>5550</b>	ug/L	500	189	1	05/04/20 10:20	05/05/20 12:00	7440-09-7	
Sodium	<b>31800</b>	ug/L	500	107	1	05/04/20 10:20	05/05/20 12:00	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City									
Antimony	<b>0.11J</b>	ug/L	1.0	0.097	1	05/07/20 09:50	05/14/20 18:47	7440-36-0	
Arsenic	<b>0.43J</b>	ug/L	1.0	0.086	1	05/07/20 09:50	05/14/20 18:47	7440-38-2	
Cadmium	<b>0.29J</b>	ug/L	0.50	0.056	1	05/07/20 09:50	05/14/20 18:47	7440-43-9	
Chromium	<b>&lt;0.22</b>	ug/L	1.0	0.22	1	05/07/20 09:50	05/14/20 18:47	7440-47-3	
Selenium	<b>0.93J</b>	ug/L	1.0	0.18	1	05/07/20 09:50	05/14/20 18:47	7782-49-2	
Thallium	<b>&lt;0.093</b>	ug/L	1.0	0.093	1	05/07/20 09:50	05/14/20 18:47	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470    Preparation Method: EPA 7470 Pace Analytical Services - Kansas City									
Mercury	<b>&lt;0.085</b>	ug/L	0.20	0.085	1	05/14/20 14:45	05/15/20 14:44	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>346</b>	mg/L	20.0	8.4	1		05/06/20 19:19		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>579</b>	mg/L	10.0	10.0	1		04/30/20 14:27		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City									
Iron, Ferric	<b>0.0025J</b>	mg/L	0.050		1		05/12/20 13:10	7439-89-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City									
Iron, Ferrous	<b>&lt;0.035</b>	mg/L	0.20	0.035	1		04/29/20 14:10		H6

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

---

**Sample: S-UG-3**      **Lab ID: 60335364016**      Collected: 04/27/20 13:25      Received: 04/29/20 03:12      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<b>&lt;0.039</b>	mg/L	0.050	0.039	1		04/30/20 11:33	18496-25-8	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	<b>51.6</b>	mg/L	5.0	1.9	5		05/19/20 13:06	16887-00-6	
Fluoride	<b>0.39</b>	mg/L	0.20	0.075	1		05/19/20 12:17	16984-48-8	
Sulfate	<b>68.2</b>	mg/L	5.0	1.4	5		05/19/20 13:06	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

Sample: S-TP-5D Lab ID: 60335364017 Collected: 04/27/20 14:20 Received: 04/29/20 03:12 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	146	ug/L	5.0	1.8	1	05/04/20 10:20	05/05/20 12:04	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	05/04/20 10:20	05/05/20 12:04	7440-41-7	
Boron	6640	ug/L	100	11.7	1	05/04/20 10:20	05/05/20 12:04	7440-42-8	
Calcium	116000	ug/L	200	32.4	1	05/04/20 10:20	05/05/20 12:04	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	05/04/20 10:20	05/05/20 12:04	7440-48-4	
Iron	8320	ug/L	50.0	26.8	1	05/04/20 10:20	05/05/20 12:04	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	05/04/20 10:20	05/05/20 12:04	7439-92-1	
Lithium	26.5	ug/L	10.0	4.6	1	05/04/20 10:20	05/05/20 12:04	7439-93-2	
Magnesium	28200	ug/L	50.0	19.7	1	05/04/20 10:20	05/05/20 12:04	7439-95-4	
Manganese	893	ug/L	5.0	0.97	1	05/04/20 10:20	05/05/20 12:04	7439-96-5	
Molybdenum	147	ug/L	20.0	1.7	1	05/04/20 10:20	05/05/20 12:04	7439-98-7	
Potassium	4280	ug/L	500	189	1	05/04/20 10:20	05/05/20 12:04	7440-09-7	
Sodium	21000	ug/L	500	107	1	05/04/20 10:20	05/05/20 12:04	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/07/20 09:50	05/14/20 18:49	7440-36-0	
Arsenic	0.24J	ug/L	1.0	0.086	1	05/07/20 09:50	05/14/20 18:49	7440-38-2	
Cadmium	0.079J	ug/L	0.50	0.056	1	05/07/20 09:50	05/14/20 18:49	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/07/20 09:50	05/14/20 18:49	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/07/20 09:50	05/14/20 18:49	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/07/20 09:50	05/14/20 18:49	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.085	ug/L	0.20	0.085	1	05/14/20 14:45	05/15/20 14:46	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	199	mg/L	20.0	8.4	1		05/06/20 19:23		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	596	mg/L	10.0	10.0	1		04/30/20 14:27		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	6.3	mg/L	0.050		1		05/12/20 13:10	7439-89-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	2.0	mg/L	0.20	0.035	1		04/29/20 14:10		H6

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-TP-5D**      **Lab ID: 60335364017**      Collected: 04/27/20 14:20      Received: 04/29/20 03:12      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>&lt;0.039</b>	mg/L	0.050	0.039	1		04/30/20 11:34	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>26.5</b>	mg/L	2.0	0.78	2		05/19/20 15:13	16887-00-6	
Fluoride	<b>0.44</b>	mg/L	0.20	0.075	1		05/19/20 14:57	16984-48-8	
Sulfate	<b>227</b>	mg/L	20.0	5.6	20		05/19/20 15:29	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

Sample: S-TP-8D Lab ID: 60335364018 Collected: 04/27/20 16:00 Received: 04/29/20 03:12 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	347	ug/L	5.0	1.8	1	05/04/20 10:20	05/05/20 12:07	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	05/04/20 10:20	05/05/20 12:07	7440-41-7	
Boron	89.6J	ug/L	100	11.7	1	05/04/20 10:20	05/05/20 12:07	7440-42-8	
Calcium	106000	ug/L	200	32.4	1	05/04/20 10:20	05/05/20 12:07	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	05/04/20 10:20	05/05/20 12:07	7440-48-4	
Iron	5990	ug/L	50.0	26.8	1	05/04/20 10:20	05/05/20 12:07	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	05/04/20 10:20	05/05/20 12:07	7439-92-1	
Lithium	31.9	ug/L	10.0	4.6	1	05/04/20 10:20	05/05/20 12:07	7439-93-2	
Magnesium	23400	ug/L	50.0	19.7	1	05/04/20 10:20	05/05/20 12:07	7439-95-4	
Manganese	394	ug/L	5.0	0.97	1	05/04/20 10:20	05/05/20 12:07	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	05/04/20 10:20	05/05/20 12:07	7439-98-7	
Potassium	3630	ug/L	500	189	1	05/04/20 10:20	05/05/20 12:07	7440-09-7	
Sodium	5170	ug/L	500	107	1	05/04/20 10:20	05/05/20 12:07	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.21J	ug/L	1.0	0.097	1	05/07/20 09:50	05/14/20 18:51	7440-36-0	
Arsenic	1.5	ug/L	1.0	0.086	1	05/07/20 09:50	05/14/20 18:51	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	05/07/20 09:50	05/14/20 18:51	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/07/20 09:50	05/14/20 18:51	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/07/20 09:50	05/14/20 18:51	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/07/20 09:50	05/14/20 18:51	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.085	ug/L	0.20	0.085	1	05/14/20 14:45	05/15/20 14:48	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	314	mg/L	20.0	8.4	1		05/06/20 19:28		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	416	mg/L	10.0	10.0	1		04/30/20 14:27		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	5.9	mg/L	0.050		1		05/12/20 13:10	7439-89-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.12J	mg/L	0.20	0.035	1		04/30/20 12:54		H6

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

---

**Sample: S-TP-8D**      **Lab ID: 60335364018**      Collected: 04/27/20 16:00      Received: 04/29/20 03:12      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<b>&lt;0.039</b>	mg/L	0.050	0.039	1		04/30/20 11:35	18496-25-8	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	<b>12.8</b>	mg/L	1.0	0.39	1		05/19/20 15:46	16887-00-6	
Fluoride	<b>0.37</b>	mg/L	0.20	0.075	1		05/19/20 15:46	16984-48-8	
Sulfate	<b>45.5</b>	mg/L	5.0	1.4	5		05/19/20 16:03	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-TP-6S**      **Lab ID: 60335364019**      Collected: 04/29/20 10:38      Received: 05/01/20 02:30      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>295</b>	ug/L	5.0	1.8	1	05/04/20 14:21	05/05/20 13:41	7440-39-3	
Beryllium	<b>&lt;0.49</b>	ug/L	1.0	0.49	1	05/04/20 14:21	05/05/20 13:41	7440-41-7	
Boron	<b>129</b>	ug/L	100	11.7	1	05/04/20 14:21	05/05/20 13:41	7440-42-8	
Calcium	<b>137000</b>	ug/L	200	32.4	1	05/04/20 14:21	05/05/20 13:41	7440-70-2	M1
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	05/04/20 14:21	05/05/20 13:41	7440-48-4	
Iron	<b>75.1</b>	ug/L	50.0	26.8	1	05/04/20 14:21	05/05/20 13:41	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	05/04/20 14:21	05/05/20 13:41	7439-92-1	
Lithium	<b>42.0</b>	ug/L	10.0	4.6	1	05/04/20 14:21	05/05/20 13:41	7439-93-2	
Magnesium	<b>30300</b>	ug/L	50.0	19.7	1	05/04/20 14:21	05/05/20 13:41	7439-95-4	
Manganese	<b>170</b>	ug/L	5.0	0.97	1	05/04/20 14:21	05/05/20 13:41	7439-96-5	
Molybdenum	<b>3.1J</b>	ug/L	20.0	1.7	1	05/04/20 14:21	05/05/20 13:41	7439-98-7	
Potassium	<b>3060</b>	ug/L	500	189	1	05/04/20 14:21	05/05/20 13:41	7440-09-7	
Sodium	<b>10500</b>	ug/L	500	107	1	05/04/20 14:21	05/05/20 13:41	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<b>0.11J</b>	ug/L	1.0	0.097	1	05/07/20 09:50	05/13/20 15:56	7440-36-0	
Arsenic	<b>0.43J</b>	ug/L	1.0	0.086	1	05/07/20 09:50	05/13/20 15:56	7440-38-2	
Cadmium	<b>0.061J</b>	ug/L	0.50	0.056	1	05/07/20 09:50	05/13/20 15:56	7440-43-9	
Chromium	<b>&lt;0.22</b>	ug/L	1.0	0.22	1	05/07/20 09:50	05/13/20 15:56	7440-47-3	
Selenium	<b>0.96J</b>	ug/L	1.0	0.18	1	05/07/20 09:50	05/13/20 15:56	7782-49-2	
Thallium	<b>&lt;0.093</b>	ug/L	1.0	0.093	1	05/07/20 09:50	05/13/20 15:56	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470    Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<b>&lt;0.085</b>	ug/L	0.20	0.085	1	05/14/20 14:45	05/15/20 14:55	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>385</b>	mg/L	20.0	8.4	1		05/08/20 17:51		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>490</b>	mg/L	10.0	10.0	1		05/04/20 15:19		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	<b>0.075</b>	mg/L	0.050		1		05/12/20 13:10	7439-89-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<b>&lt;0.035</b>	mg/L	0.20	0.035	1		05/04/20 10:43		H6

### REPORT OF LABORATORY ANALYSIS

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



## ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

---

**Sample: S-TP-6S**      **Lab ID: 60335364019**      Collected: 04/29/20 10:38      Received: 05/01/20 02:30      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>&lt;0.039</b>	mg/L	0.050	0.039	1		05/04/20 11:33	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>9.6</b>	mg/L	1.0	0.39	1		05/19/20 16:36	16887-00-6	
Fluoride	<b>0.36</b>	mg/L	0.20	0.075	1		05/19/20 16:36	16984-48-8	
Sulfate	<b>38.3</b>	mg/L	5.0	1.4	5		05/19/20 16:52	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-TP-6D**      **Lab ID: 60335364020**      Collected: 04/29/20 09:27      Received: 05/01/20 02:30      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>441</b>	ug/L	5.0	1.8	1	05/04/20 14:21	05/05/20 13:56	7440-39-3	
Beryllium	<b>&lt;0.49</b>	ug/L	1.0	0.49	1	05/04/20 14:21	05/05/20 13:56	7440-41-7	
Boron	<b>83.4J</b>	ug/L	100	11.7	1	05/04/20 14:21	05/05/20 13:56	7440-42-8	
Calcium	<b>120000</b>	ug/L	200	32.4	1	05/04/20 14:21	05/05/20 13:56	7440-70-2	
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	05/04/20 14:21	05/05/20 13:56	7440-48-4	
Iron	<b>8660</b>	ug/L	50.0	26.8	1	05/04/20 14:21	05/05/20 13:56	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	05/04/20 14:21	05/05/20 13:56	7439-92-1	
Lithium	<b>26.9</b>	ug/L	10.0	4.6	1	05/04/20 14:21	05/05/20 13:56	7439-93-2	
Magnesium	<b>32100</b>	ug/L	50.0	19.7	1	05/04/20 14:21	05/05/20 13:56	7439-95-4	
Manganese	<b>527</b>	ug/L	5.0	0.97	1	05/04/20 14:21	05/05/20 13:56	7439-96-5	
Molybdenum	<b>&lt;1.7</b>	ug/L	20.0	1.7	1	05/04/20 14:21	05/05/20 13:56	7439-98-7	
Potassium	<b>3990</b>	ug/L	500	189	1	05/04/20 14:21	05/05/20 13:56	7440-09-7	
Sodium	<b>6360</b>	ug/L	500	107	1	05/04/20 14:21	05/05/20 13:56	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<b>0.86J</b>	ug/L	1.0	0.097	1	05/07/20 09:50	05/13/20 15:58	7440-36-0	
Arsenic	<b>0.14J</b>	ug/L	1.0	0.086	1	05/07/20 09:50	05/13/20 15:58	7440-38-2	
Cadmium	<b>&lt;0.056</b>	ug/L	0.50	0.056	1	05/07/20 09:50	05/13/20 15:58	7440-43-9	
Chromium	<b>0.33J</b>	ug/L	1.0	0.22	1	05/07/20 09:50	05/13/20 15:58	7440-47-3	
Selenium	<b>&lt;0.18</b>	ug/L	1.0	0.18	1	05/07/20 09:50	05/13/20 15:58	7782-49-2	
Thallium	<b>&lt;0.093</b>	ug/L	1.0	0.093	1	05/07/20 09:50	05/13/20 15:58	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470    Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<b>&lt;0.085</b>	ug/L	0.20	0.085	1	05/14/20 14:45	05/15/20 14:57	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>348</b>	mg/L	20.0	8.4	1		05/08/20 17:58		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>471</b>	mg/L	10.0	10.0	1		05/04/20 15:19		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	<b>8.5</b>	mg/L	0.050		1		05/12/20 13:10	7439-89-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<b>0.18J</b>	mg/L	0.20	0.035	1		05/04/20 10:41		H6

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

---

**Sample: S-TP-6D**      **Lab ID: 60335364020**      Collected: 04/29/20 09:27      Received: 05/01/20 02:30      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>0.095</b>	mg/L	0.050	0.039	1		05/04/20 11:33	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>12.8</b>	mg/L	1.0	0.39	1		05/19/20 17:58	16887-00-6	
Fluoride	<b>0.34</b>	mg/L	0.20	0.075	1		05/19/20 17:58	16984-48-8	
Sulfate	<b>67.6</b>	mg/L	5.0	1.4	5		05/19/20 17:08	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

Sample: S-PZ-1S Lab ID: 60335364021 Collected: 04/29/20 10:15 Received: 05/01/20 02:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	194	ug/L	5.0	1.8	1	05/04/20 14:21	05/05/20 13:58	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	05/04/20 14:21	05/05/20 13:58	7440-41-7	
Boron	37500	ug/L	100	11.7	1	05/04/20 14:21	05/05/20 13:58	7440-42-8	
Calcium	220000	ug/L	200	32.4	1	05/04/20 14:21	05/05/20 13:58	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	05/04/20 14:21	05/05/20 13:58	7440-48-4	
Iron	8950	ug/L	50.0	26.8	1	05/04/20 14:21	05/05/20 13:58	7439-89-6	
Lead	13.4	ug/L	10.0	4.6	1	05/04/20 14:21	05/05/20 13:58	7439-92-1	
Lithium	21.6	ug/L	10.0	4.6	1	05/04/20 14:21	05/05/20 13:58	7439-93-2	
Magnesium	29200	ug/L	50.0	19.7	1	05/04/20 14:21	05/05/20 13:58	7439-95-4	
Manganese	1250	ug/L	5.0	0.97	1	05/04/20 14:21	05/05/20 13:58	7439-96-5	
Molybdenum	9190	ug/L	20.0	1.7	1	05/04/20 14:21	05/05/20 13:58	7439-98-7	
Potassium	10800	ug/L	500	189	1	05/04/20 14:21	05/05/20 13:58	7440-09-7	
Sodium	67700	ug/L	500	107	1	05/04/20 14:21	05/05/20 13:58	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/07/20 09:50	05/13/20 16:01	7440-36-0	
Arsenic	0.43J	ug/L	1.0	0.086	1	05/07/20 09:50	05/13/20 16:01	7440-38-2	
Cadmium	3.5	ug/L	0.50	0.056	1	05/07/20 09:50	05/13/20 16:01	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/07/20 09:50	05/13/20 16:01	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/07/20 09:50	05/13/20 16:01	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/07/20 09:50	05/13/20 16:01	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.085	ug/L	0.20	0.085	1	05/14/20 14:45	05/15/20 15:00	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	139	mg/L	20.0	8.4	1		05/08/20 18:02		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1160	mg/L	13.3	13.3	1		05/04/20 15:20		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	8.4	mg/L	0.050		1		05/12/20 13:10	7439-89-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.51	mg/L	0.20	0.035	1		05/04/20 10:43		H6

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

---

**Sample: S-PZ-1S**      **Lab ID: 60335364021**      Collected: 04/29/20 10:15      Received: 05/01/20 02:30      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>&lt;0.039</b>	mg/L	0.050	0.039	1		05/04/20 11:34	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>18.3</b>	mg/L	5.0	1.9	5		05/19/20 18:31	16887-00-6	
Fluoride	<b>1.0</b>	mg/L	0.20	0.075	1		05/19/20 18:15	16984-48-8	
Sulfate	<b>635</b>	mg/L	50.0	13.9	50		05/20/20 16:06	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

**ANALYTICAL RESULTS**

Project: AMEREN SIOUX SCPA-CA  
Pace Project No.: 60335364

**Sample: S-TP-2D**      **Lab ID: 60335364022**      Collected: 04/29/20 12:30      Received: 05/01/20 02:30      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City									
Barium	61.1	ug/L	5.0	1.8	1	05/04/20 14:21	05/05/20 14:00	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	05/04/20 14:21	05/05/20 14:00	7440-41-7	
Boron	127	ug/L	100	11.7	1	05/04/20 14:21	05/05/20 14:00	7440-42-8	
Calcium	287000	ug/L	200	32.4	1	05/04/20 14:21	05/05/20 14:00	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	05/04/20 14:21	05/05/20 14:00	7440-48-4	
Iron	17000	ug/L	50.0	26.8	1	05/04/20 14:21	05/05/20 14:00	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	05/04/20 14:21	05/05/20 14:00	7439-92-1	
Lithium	45.4	ug/L	10.0	4.6	1	05/04/20 14:21	05/05/20 14:00	7439-93-2	
Magnesium	80100	ug/L	50.0	19.7	1	05/04/20 14:21	05/05/20 14:00	7439-95-4	
Manganese	1400	ug/L	5.0	0.97	1	05/04/20 14:21	05/05/20 14:00	7439-96-5	
Molybdenum	2.4J	ug/L	20.0	1.7	1	05/04/20 14:21	05/05/20 14:00	7439-98-7	
Potassium	5850	ug/L	500	189	1	05/04/20 14:21	05/05/20 14:00	7440-09-7	
Sodium	22500	ug/L	500	107	1	05/04/20 14:21	05/05/20 14:00	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/07/20 09:50	05/13/20 16:03	7440-36-0	
Arsenic	0.14J	ug/L	1.0	0.086	1	05/07/20 09:50	05/13/20 16:03	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	05/07/20 09:50	05/13/20 16:03	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/07/20 09:50	05/13/20 16:03	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/07/20 09:50	05/13/20 16:03	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/07/20 09:50	05/13/20 16:03	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470    Preparation Method: EPA 7470 Pace Analytical Services - Kansas City									
Mercury	<0.085	ug/L	0.20	0.085	1	05/14/20 14:45	05/15/20 15:02	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	444	mg/L	20.0	8.4	1		05/08/20 18:08		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C Pace Analytical Services - Kansas City									
Total Dissolved Solids	1280	mg/L	13.3	13.3	1		05/04/20 15:20		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City									
Iron, Ferric	16.6	mg/L	0.050		1		05/12/20 13:10	7439-89-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City									
Iron, Ferrous	0.43	mg/L	0.20	0.035	1		05/04/20 10:44		H6

**REPORT OF LABORATORY ANALYSIS**

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

---

**Sample: S-TP-2D**      **Lab ID: 60335364022**      Collected: 04/29/20 12:30      Received: 05/01/20 02:30      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<b>&lt;0.039</b>	mg/L	0.050	0.039	1		05/04/20 11:34	18496-25-8	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	<b>81.5</b>	mg/L	10.0	3.9	10		05/19/20 19:04	16887-00-6	
Fluoride	<b>0.23</b>	mg/L	0.20	0.075	1		05/19/20 18:48	16984-48-8	
Sulfate	<b>503</b>	mg/L	50.0	13.9	50		05/19/20 19:21	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

Sample: S-TP-4D Lab ID: 60335364023 Collected: 04/29/20 12:07 Received: 05/01/20 02:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	564	ug/L	5.0	1.8	1	05/04/20 14:21	05/05/20 14:03	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	05/04/20 14:21	05/05/20 14:03	7440-41-7	
Boron	87.6J	ug/L	100	11.7	1	05/04/20 14:21	05/05/20 14:03	7440-42-8	
Calcium	116000	ug/L	200	32.4	1	05/04/20 14:21	05/05/20 14:03	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	05/04/20 14:21	05/05/20 14:03	7440-48-4	
Iron	7240	ug/L	50.0	26.8	1	05/04/20 14:21	05/05/20 14:03	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	05/04/20 14:21	05/05/20 14:03	7439-92-1	
Lithium	32.7	ug/L	10.0	4.6	1	05/04/20 14:21	05/05/20 14:03	7439-93-2	
Magnesium	28700	ug/L	50.0	19.7	1	05/04/20 14:21	05/05/20 14:03	7439-95-4	
Manganese	519	ug/L	5.0	0.97	1	05/04/20 14:21	05/05/20 14:03	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	05/04/20 14:21	05/05/20 14:03	7439-98-7	
Potassium	3470	ug/L	500	189	1	05/04/20 14:21	05/05/20 14:03	7440-09-7	
Sodium	7500	ug/L	500	107	1	05/04/20 14:21	05/05/20 14:03	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/07/20 09:50	05/13/20 16:05	7440-36-0	
Arsenic	1.3	ug/L	1.0	0.086	1	05/07/20 09:50	05/13/20 16:05	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	05/07/20 09:50	05/13/20 16:05	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/07/20 09:50	05/13/20 16:05	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/07/20 09:50	05/13/20 16:05	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/07/20 09:50	05/13/20 16:05	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.085	ug/L	0.20	0.085	1	05/14/20 14:45	05/15/20 15:09	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	288	mg/L	20.0	8.4	1		05/08/20 18:19		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	477	mg/L	10.0	10.0	1		05/04/20 15:20		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	7.2	mg/L	0.050		1		05/12/20 13:10	7439-89-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.082J	mg/L	0.20	0.035	1		05/04/20 10:44		H6

### REPORT OF LABORATORY ANALYSIS

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



## ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

---

**Sample: S-TP-4D**      **Lab ID: 60335364023**      Collected: 04/29/20 12:07      Received: 05/01/20 02:30      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>&lt;0.039</b>	mg/L	0.050	0.039	1		05/04/20 11:34	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>9.0</b>	mg/L	1.0	0.39	1		05/19/20 19:38	16887-00-6	
Fluoride	<b>0.33</b>	mg/L	0.20	0.075	1		05/19/20 19:38	16984-48-8	
Sulfate	<b>93.2</b>	mg/L	10.0	2.8	10		05/19/20 19:54	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

Sample: S-TP-3D Lab ID: 60335364024 Collected: 04/29/20 13:42 Received: 05/01/20 02:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	549	ug/L	5.0	1.8	1	05/07/20 11:15	05/08/20 13:54	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	05/07/20 11:15	05/08/20 13:54	7440-41-7	
Boron	50.1J	ug/L	100	11.7	1	05/07/20 11:15	05/08/20 13:54	7440-42-8	
Calcium	112000	ug/L	200	32.4	1	05/07/20 11:15	05/08/20 13:54	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	05/07/20 11:15	05/08/20 13:54	7440-48-4	
Iron	7520	ug/L	50.0	26.8	1	05/07/20 11:15	05/08/20 13:54	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	05/07/20 11:15	05/08/20 13:54	7439-92-1	
Lithium	30.0	ug/L	10.0	4.6	1	05/07/20 11:15	05/08/20 13:54	7439-93-2	
Magnesium	27100	ug/L	50.0	19.7	1	05/07/20 11:15	05/08/20 13:54	7439-95-4	
Manganese	591	ug/L	5.0	0.97	1	05/07/20 11:15	05/08/20 13:54	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	05/07/20 11:15	05/08/20 13:54	7439-98-7	
Potassium	3800	ug/L	500	189	1	05/07/20 11:15	05/08/20 13:54	7440-09-7	
Sodium	6360	ug/L	500	107	1	05/07/20 11:15	05/08/20 13:54	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/07/20 09:50	05/13/20 16:07	7440-36-0	
Arsenic	0.12J	ug/L	1.0	0.086	1	05/07/20 09:50	05/13/20 16:07	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	05/07/20 09:50	05/13/20 16:07	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/07/20 09:50	05/13/20 16:07	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/07/20 09:50	05/13/20 16:07	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/07/20 09:50	05/13/20 16:07	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.085	ug/L	0.20	0.085	1	05/14/20 14:45	05/15/20 15:11	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	340	mg/L	20.0	8.4	1		05/08/20 18:25		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	490	mg/L	10.0	10.0	1		05/04/20 15:20		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	7.4	mg/L	0.050		1		05/12/20 13:10	7439-89-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.088J	mg/L	0.20	0.035	1		05/04/20 10:44		H6

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-TP-3D**      **Lab ID: 60335364024**      Collected: 04/29/20 13:42      Received: 05/01/20 02:30      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<b>&lt;0.039</b>	mg/L	0.050	0.039	1		05/04/20 11:35	18496-25-8	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	<b>7.7</b>	mg/L	1.0	0.39	1		05/19/20 21:17	16887-00-6	
Fluoride	<b>0.30</b>	mg/L	0.20	0.075	1		05/19/20 21:17	16984-48-8	
Sulfate	<b>86.1</b>	mg/L	10.0	2.8	10		05/19/20 20:11	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

Sample: S-PZ-9D Lab ID: 60335364025 Collected: 04/30/20 10:30 Received: 05/01/20 02:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	113	ug/L	5.0	1.8	1	05/07/20 11:15	05/08/20 13:56	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	05/07/20 11:15	05/08/20 13:56	7440-41-7	
Boron	2850	ug/L	100	11.7	1	05/07/20 11:15	05/08/20 13:56	7440-42-8	
Calcium	182000	ug/L	200	32.4	1	05/07/20 11:15	05/08/20 13:56	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	05/07/20 11:15	05/08/20 13:56	7440-48-4	
Iron	11300	ug/L	50.0	26.8	1	05/07/20 11:15	05/08/20 13:56	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	05/07/20 11:15	05/08/20 13:56	7439-92-1	
Lithium	32.2	ug/L	10.0	4.6	1	05/07/20 11:15	05/08/20 13:56	7439-93-2	
Magnesium	42500	ug/L	50.0	19.7	1	05/07/20 11:15	05/08/20 13:56	7439-95-4	
Manganese	1130	ug/L	5.0	0.97	1	05/07/20 11:15	05/08/20 13:56	7439-96-5	
Molybdenum	4.7J	ug/L	20.0	1.7	1	05/07/20 11:15	05/08/20 13:56	7439-98-7	
Potassium	4820	ug/L	500	189	1	05/07/20 11:15	05/08/20 13:56	7440-09-7	
Sodium	17400	ug/L	500	107	1	05/07/20 11:15	05/08/20 13:56	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/07/20 09:50	05/13/20 16:08	7440-36-0	
Arsenic	0.34J	ug/L	1.0	0.086	1	05/07/20 09:50	05/13/20 16:08	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	05/07/20 09:50	05/13/20 16:08	7440-43-9	
Chromium	0.33J	ug/L	1.0	0.22	1	05/07/20 09:50	05/13/20 16:08	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/07/20 09:50	05/13/20 16:08	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/07/20 09:50	05/13/20 16:08	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.085	ug/L	0.20	0.085	1	05/14/20 14:45	05/15/20 15:13	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	228	mg/L	20.0	8.4	1		05/12/20 18:05		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	879	mg/L	10.0	10.0	1		05/04/20 15:22		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	9.8	mg/L	0.050		1		05/12/20 13:10	7439-89-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	1.5	mg/L	0.20	0.035	1		05/04/20 10:45		H6

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

---

**Sample: S-PZ-9D**      **Lab ID: 60335364025**      Collected: 04/30/20 10:30      Received: 05/01/20 02:30      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<b>&lt;0.039</b>	mg/L	0.050	0.039	1		05/04/20 11:40	18496-25-8	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	<b>18.3</b>	mg/L	1.0	0.39	1		05/19/20 21:50	16887-00-6	
Fluoride	<b>0.30</b>	mg/L	0.20	0.075	1		05/19/20 21:50	16984-48-8	
Sulfate	<b>432</b>	mg/L	50.0	13.9	50		05/20/20 16:22	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

**QUALITY CONTROL DATA**

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch:	654727	Analysis Method:	EPA 7470
QC Batch Method:	EPA 7470	Analysis Description:	7470 Mercury
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60335364001, 60335364002, 60335364003, 60335364004, 60335364005, 60335364006, 60335364007, 60335364008, 60335364009, 60335364010, 60335364012, 60335364013, 60335364014, 60335364016, 60335364017, 60335364018, 60335364019, 60335364020, 60335364021, 60335364022

METHOD BLANK: 2655664 Matrix: Water

Associated Lab Samples: 60335364001, 60335364002, 60335364003, 60335364004, 60335364005, 60335364006, 60335364007, 60335364008, 60335364009, 60335364010, 60335364012, 60335364013, 60335364014, 60335364016, 60335364017, 60335364018, 60335364019, 60335364020, 60335364021, 60335364022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.085	0.20	0.085	05/15/20 14:00	

LABORATORY CONTROL SAMPLE: 2655665

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.7	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2655666 2655667

Parameter	Units	60335364006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.085	5	5	4.6	4.6	91	92	75-125	1	20	

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**

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch: 654729

Analysis Method: EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60335364023, 60335364024, 60335364025

METHOD BLANK: 2655668

Matrix: Water

Associated Lab Samples: 60335364023, 60335364024, 60335364025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.085	0.20	0.085	05/15/20 15:04	

LABORATORY CONTROL SAMPLE: 2655669

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.6	93	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2655670 2655671

Parameter	Units	60336232002		2655670		2655671		% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MS Spike Conc.	MSD Result	MSD Spike Conc.	MS Result	MSD Result					MS % Rec
Mercury	ug/L	<0.085	5	5	5	4.7	4.3	94	86	75-125	8	20

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

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

**QUALITY CONTROL DATA**

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch:	651902	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:	60335364001, 60335364002, 60335364003, 60335364004, 60335364005, 60335364006, 60335364007, 60335364008, 60335364009, 60335364010, 60335364012, 60335364013, 60335364014		

METHOD BLANK:	2644795	Matrix:	Water
Associated Lab Samples:	60335364001, 60335364002, 60335364003, 60335364004, 60335364005, 60335364006, 60335364007, 60335364008, 60335364009, 60335364010, 60335364012, 60335364013, 60335364014		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	04/30/20 16:27	
Beryllium	ug/L	<0.49	1.0	0.49	04/30/20 16:27	
Boron	ug/L	<11.7	100	11.7	04/30/20 16:27	
Calcium	ug/L	<32.4	200	32.4	04/30/20 16:27	
Cobalt	ug/L	<1.5	5.0	1.5	04/30/20 16:27	
Iron	ug/L	<26.8	50.0	26.8	04/30/20 16:27	
Lead	ug/L	<4.6	10.0	4.6	04/30/20 16:27	
Lithium	ug/L	<4.6	10.0	4.6	04/30/20 16:27	
Magnesium	ug/L	<19.7	50.0	19.7	04/30/20 16:27	
Manganese	ug/L	<0.97	5.0	0.97	04/30/20 16:27	
Molybdenum	ug/L	<1.7	20.0	1.7	04/30/20 16:27	
Potassium	ug/L	<189	500	189	04/30/20 16:27	
Sodium	ug/L	<107	500	107	04/30/20 16:27	

LABORATORY CONTROL SAMPLE: 2644796

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	991	99	85-115	
Beryllium	ug/L	1000	998	100	85-115	
Boron	ug/L	1000	1000	100	85-115	
Calcium	ug/L	10000	10100	101	85-115	
Cobalt	ug/L	1000	1030	103	85-115	
Iron	ug/L	10000	9960	100	85-115	
Lead	ug/L	1000	1060	106	85-115	
Lithium	ug/L	1000	987	99	85-115	
Magnesium	ug/L	10000	10500	105	85-115	
Manganese	ug/L	1000	1020	102	85-115	
Molybdenum	ug/L	1000	1020	102	85-115	
Potassium	ug/L	10000	10100	101	85-115	
Sodium	ug/L	10000	10300	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2644797 2644798

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	155	1000	1000	1170	1150	101	100	70-130	1	20

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**

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



**QUALITY CONTROL DATA**

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2644797												2644798	
Parameter	Units	60335364006		MS	MSD	MS	MSD	MS	MSD	% Rec	Max		
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Beryllium	ug/L	<0.49	1000	1000	1000	1030	1010	103	101	70-130	2	20	
Boron	ug/L	1030	1000	1000	1000	2080	2060	106	103	70-130	1	20	
Calcium	ug/L	83300	10000	10000	10000	94300	93000	109	96	70-130	1	20	
Cobalt	ug/L	<1.5	1000	1000	1000	1030	1030	103	103	70-130	1	20	
Iron	ug/L	<26.8	10000	10000	10000	10200	10100	102	101	70-130	1	20	
Lead	ug/L	<4.6	1000	1000	1000	1050	1050	105	105	70-130	0	20	
Lithium	ug/L	22.2	1000	1000	1000	1040	1020	102	100	70-130	2	20	
Magnesium	ug/L	20800	10000	10000	10000	31800	31500	110	107	70-130	1	20	
Manganese	ug/L	64.9	1000	1000	1000	1100	1090	104	102	70-130	1	20	
Molybdenum	ug/L	108	1000	1000	1000	1160	1160	105	105	70-130	0	20	
Potassium	ug/L	6980	10000	10000	10000	17400	17200	104	102	70-130	1	20	
Sodium	ug/L	24300	10000	10000	10000	34900	34500	106	102	70-130	1	20	

MATRIX SPIKE SAMPLE: 2644799											
Parameter	Units	60335364014		Spike	MS	MS	% Rec				
		Result	Conc.	Conc.	Result	% Rec	Limits	Qualifiers			
Barium	ug/L		132	1000	1100	97	70-130				
Beryllium	ug/L		<0.49	1000	995	99	70-130				
Boron	ug/L		95.9J	1000	1100	101	70-130				
Calcium	ug/L		134000	10000	145000	109	70-130				
Cobalt	ug/L		<1.5	1000	986	99	70-130				
Iron	ug/L		<26.8	10000	9910	99	70-130				
Lead	ug/L		<4.6	1000	1020	102	70-130				
Lithium	ug/L		9.3J	1000	999	99	70-130				
Magnesium	ug/L		26000	10000	36400	105	70-130				
Manganese	ug/L		318	1000	1330	102	70-130				
Molybdenum	ug/L		2.4J	1000	1010	101	70-130				
Potassium	ug/L		490J	10000	10600	101	70-130				
Sodium	ug/L		5470	10000	15700	103	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**

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

**QUALITY CONTROL DATA**

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch: 652406	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: 60335364016, 60335364017, 60335364018

METHOD BLANK: 2646777 Matrix: Water

Associated Lab Samples: 60335364016, 60335364017, 60335364018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	05/05/20 10:55	
Beryllium	ug/L	<0.49	1.0	0.49	05/05/20 10:55	
Boron	ug/L	<11.7	100	11.7	05/05/20 10:55	
Calcium	ug/L	<32.4	200	32.4	05/05/20 10:55	
Cobalt	ug/L	<1.5	5.0	1.5	05/05/20 10:55	
Iron	ug/L	<26.8	50.0	26.8	05/05/20 10:55	
Lead	ug/L	<4.6	10.0	4.6	05/05/20 10:55	
Lithium	ug/L	<4.6	10.0	4.6	05/05/20 10:55	
Magnesium	ug/L	<19.7	50.0	19.7	05/05/20 10:55	
Manganese	ug/L	<0.97	5.0	0.97	05/05/20 10:55	
Molybdenum	ug/L	<1.7	20.0	1.7	05/05/20 10:55	
Potassium	ug/L	<189	500	189	05/05/20 10:55	
Sodium	ug/L	<107	500	107	05/05/20 10:55	

LABORATORY CONTROL SAMPLE: 2646778

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	997	100	85-115	
Beryllium	ug/L	1000	1000	100	85-115	
Boron	ug/L	1000	956	96	85-115	
Calcium	ug/L	10000	10200	102	85-115	
Cobalt	ug/L	1000	1020	102	85-115	
Iron	ug/L	10000	10100	101	85-115	
Lead	ug/L	1000	1040	104	85-115	
Lithium	ug/L	1000	1020	102	85-115	
Magnesium	ug/L	10000	9940	99	85-115	
Manganese	ug/L	1000	975	97	85-115	
Molybdenum	ug/L	1000	1000	100	85-115	
Potassium	ug/L	10000	9900	99	85-115	
Sodium	ug/L	10000	10300	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2646779 2646780

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60335363005	Spike Conc.	Spike Conc.	Result						
Barium	ug/L	70.7	1000	1000	1060	1050	99	98	70-130	1	20
Beryllium	ug/L	<0.49	1000	1000	999	997	100	100	70-130	0	20

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**

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

**QUALITY CONTROL DATA**

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2646779												2646780	
Parameter	Units	60335363005 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Boron	ug/L	30400	1000	1000	32300	32200	187	179	70-130	0	20	M1	
Calcium	ug/L	254000	10000	10000	268000	267000	143	132	70-130	0	20	M1	
Cobalt	ug/L	<1.5	1000	1000	994	989	99	99	70-130	1	20		
Iron	ug/L	1170	10000	10000	11200	11100	100	100	70-130	0	20		
Lead	ug/L	<4.6	1000	1000	984	979	98	98	70-130	1	20		
Lithium	ug/L	22.5	1000	1000	997	987	97	96	70-130	1	20		
Magnesium	ug/L	10000	10000	10000	19600	19500	96	95	70-130	1	20		
Manganese	ug/L	707	1000	1000	1710	1710	101	100	70-130	0	20		
Molybdenum	ug/L	3290	1000	1000	4380	4370	109	108	70-130	0	20		
Potassium	ug/L	18000	10000	10000	28200	28000	101	100	70-130	0	20		
Sodium	ug/L	88600	10000	10000	99100	98800	105	101	70-130	0	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2646781												2646782	
Parameter	Units	60335361003 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Barium	ug/L	292	1000	1000	1270	1270	98	97	70-130	0	20		
Beryllium	ug/L	<0.49	1000	1000	1010	1010	101	101	70-130	0	20		
Boron	ug/L	111	1000	1000	1090	1100	98	99	70-130	1	20		
Calcium	ug/L	142000	10000	10000	151000	150000	88	71	70-130	1	20		
Cobalt	ug/L	<1.5	1000	1000	978	982	98	98	70-130	0	20		
Iron	ug/L	865	10000	10000	10800	10800	100	100	70-130	0	20		
Lead	ug/L	<4.6	1000	1000	996	992	99	99	70-130	0	20		
Lithium	ug/L	43.6	1000	1000	1040	1030	99	99	70-130	0	20		
Magnesium	ug/L	38600	10000	10000	47600	47200	90	87	70-130	1	20		
Manganese	ug/L	403	1000	1000	1370	1380	96	97	70-130	1	20		
Molybdenum	ug/L	<1.7	1000	1000	1000	1010	100	101	70-130	1	20		
Potassium	ug/L	7390	10000	10000	17300	17100	99	97	70-130	1	20		
Sodium	ug/L	11900	10000	10000	21700	21500	98	96	70-130	1	20		

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**

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch: 652626

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: 60335364019, 60335364020, 60335364021, 60335364022, 60335364023

METHOD BLANK: 2647652

Matrix: Water

Associated Lab Samples: 60335364019, 60335364020, 60335364021, 60335364022, 60335364023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	05/05/20 13:32	
Beryllium	ug/L	<0.49	1.0	0.49	05/05/20 13:32	
Boron	ug/L	<11.7	100	11.7	05/05/20 13:32	
Calcium	ug/L	<32.4	200	32.4	05/05/20 13:32	
Cobalt	ug/L	<1.5	5.0	1.5	05/05/20 13:32	
Iron	ug/L	<26.8	50.0	26.8	05/05/20 13:32	
Lead	ug/L	<4.6	10.0	4.6	05/05/20 13:32	
Lithium	ug/L	<4.6	10.0	4.6	05/05/20 13:32	
Magnesium	ug/L	<19.7	50.0	19.7	05/05/20 13:32	
Manganese	ug/L	<0.97	5.0	0.97	05/05/20 13:32	
Molybdenum	ug/L	<1.7	20.0	1.7	05/05/20 13:32	
Potassium	ug/L	<189	500	189	05/05/20 13:32	
Sodium	ug/L	<107	500	107	05/05/20 13:32	

LABORATORY CONTROL SAMPLE: 2647653

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	994	99	85-115	
Beryllium	ug/L	1000	994	99	85-115	
Boron	ug/L	1000	986	99	85-115	
Calcium	ug/L	10000	10100	101	85-115	
Cobalt	ug/L	1000	1040	104	85-115	
Iron	ug/L	10000	10100	101	85-115	
Lead	ug/L	1000	1050	105	85-115	
Lithium	ug/L	1000	967	97	85-115	
Magnesium	ug/L	10000	10300	103	85-115	
Manganese	ug/L	1000	1020	102	85-115	
Molybdenum	ug/L	1000	1030	103	85-115	
Potassium	ug/L	10000	9840	98	85-115	
Sodium	ug/L	10000	10100	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2647680 2647681

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Result	Conc.						
Barium	ug/L	295	1000	1000	1300	100	100	70-130	0	20	
Beryllium	ug/L	<0.49	1000	1000	1020	102	102	70-130	0	20	

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

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

**QUALITY CONTROL DATA**

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2647680 2647681														
Parameter	Units	60335364019		MS	MSD	2647681		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	MS Result	MSD Result							
Boron	ug/L	129	1000	1000	1000	1140	1120	102	99	70-130	2	20		
Calcium	ug/L	137000	10000	10000	10000	146000	144000	86	64	70-130	2	20	M1	
Cobalt	ug/L	<1.5	1000	1000	1000	1020	1020	102	102	70-130	0	20		
Iron	ug/L	75.1	10000	10000	10000	10200	10200	101	101	70-130	0	20		
Lead	ug/L	<4.6	1000	1000	1000	1030	1030	103	103	70-130	0	20		
Lithium	ug/L	42.0	1000	1000	1000	1040	1040	100	100	70-130	0	20		
Magnesium	ug/L	30300	10000	10000	10000	40400	39700	101	94	70-130	2	20		
Manganese	ug/L	170	1000	1000	1000	1200	1180	103	101	70-130	1	20		
Molybdenum	ug/L	3.1J	1000	1000	1000	1040	1050	104	105	70-130	0	20		
Potassium	ug/L	3060	10000	10000	10000	12900	12700	99	97	70-130	1	20		
Sodium	ug/L	10500	10000	10000	10000	19800	19300	93	88	70-130	3	20		

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**

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

**QUALITY CONTROL DATA**

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch: 653354

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: 60335364024, 60335364025

METHOD BLANK: 2650432

Matrix: Water

Associated Lab Samples: 60335364024, 60335364025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	05/11/20 12:10	
Beryllium	ug/L	<0.49	1.0	0.49	05/11/20 12:10	
Boron	ug/L	<11.7	100	11.7	05/08/20 13:49	
Calcium	ug/L	<32.4	200	32.4	05/11/20 12:10	
Cobalt	ug/L	<1.5	5.0	1.5	05/08/20 13:49	
Iron	ug/L	<26.8	50.0	26.8	05/11/20 12:10	
Lead	ug/L	<4.6	10.0	4.6	05/08/20 13:49	
Lithium	ug/L	<4.6	10.0	4.6	05/11/20 12:10	
Magnesium	ug/L	<19.7	50.0	19.7	05/08/20 13:49	
Manganese	ug/L	<0.97	5.0	0.97	05/08/20 13:49	
Molybdenum	ug/L	<1.7	20.0	1.7	05/08/20 13:49	
Potassium	ug/L	<189	500	189	05/11/20 12:10	
Sodium	ug/L	196J	500	107	05/11/20 12:10	

LABORATORY CONTROL SAMPLE: 2650433

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	978	98	85-115	
Beryllium	ug/L	1000	973	97	85-115	
Boron	ug/L	1000	931	93	85-115	
Calcium	ug/L	10000	9900	99	85-115	
Cobalt	ug/L	1000	1040	104	85-115	
Iron	ug/L	10000	9950	99	85-115	
Lead	ug/L	1000	1030	103	85-115	
Lithium	ug/L	1000	952	95	85-115	
Magnesium	ug/L	10000	9430	94	85-115	
Manganese	ug/L	1000	934	93	85-115	
Molybdenum	ug/L	1000	1010	101	85-115	
Potassium	ug/L	10000	9880	99	85-115	
Sodium	ug/L	10000	9690	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2650434 2650435

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60336229003	Result	Spike Conc.	Spike Conc.								
Barium	ug/L	124	1000	1000	1130	1140	101	101	70-130	1	20		
Beryllium	ug/L	<0.49	1000	1000	1010	1020	101	102	70-130	0	20		

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**

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

**QUALITY CONTROL DATA**

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2650434												2650435	
Parameter	Units	60336229003		MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual	
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD		
Boron	ug/L	9690	1000	1000	10700	10600	99	92	70-130	1	20		
Calcium	ug/L	193000	10000	10000	207000	205000	143	119	70-130	1	20	M1	
Cobalt	ug/L	<1.5	1000	1000	1030	1020	103	102	70-130	0	20		
Iron	ug/L	10600	10000	10000	21100	21000	105	104	70-130	0	20		
Lead	ug/L	<4.6	1000	1000	1010	1000	101	100	70-130	1	20		
Lithium	ug/L	29.9	1000	1000	1030	1040	100	101	70-130	1	20		
Magnesium	ug/L	39400	10000	10000	50400	49000	111	97	70-130	3	20		
Manganese	ug/L	1920	1000	1000	2930	2890	101	97	70-130	1	20		
Molybdenum	ug/L	219	1000	1000	1270	1260	105	104	70-130	1	20		
Potassium	ug/L	6830	10000	10000	17400	17500	106	107	70-130	1	20		
Sodium	ug/L	34600	10000	10000	45400	44800	107	102	70-130	1	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2650436												2650437	
Parameter	Units	60336232002		MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual	
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD		
Barium	ug/L	211	1000	1000	1210	1220	100	101	70-130	1	20		
Beryllium	ug/L	<0.49	1000	1000	1000	1010	100	101	70-130	1	20		
Boron	ug/L	8120	1000	1000	8980	9130	86	101	70-130	2	20		
Calcium	ug/L	228000	10000	10000	235000	240000	79	121	70-130	2	20		
Cobalt	ug/L	<1.5	1000	1000	1020	1020	102	102	70-130	0	20		
Iron	ug/L	15700	10000	10000	25700	26000	100	103	70-130	1	20		
Lead	ug/L	<4.6	1000	1000	1010	1020	101	101	70-130	1	20		
Lithium	ug/L	43.9	1000	1000	1050	1060	101	102	70-130	0	20		
Magnesium	ug/L	66000	10000	10000	76500	78200	106	122	70-130	2	20		
Manganese	ug/L	1160	1000	1000	2150	2180	98	102	70-130	1	20		
Molybdenum	ug/L	208	1000	1000	1250	1260	104	106	70-130	1	20		
Potassium	ug/L	7770	10000	10000	18100	18300	104	106	70-130	1	20		
Sodium	ug/L	39700	10000	10000	49300	50200	96	105	70-130	2	20		

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**

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

**QUALITY CONTROL DATA**

Project: AMEREN SIOUX SCPA-CA  
Pace Project No.: 60335364

QC Batch: 653332 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: 60335364001, 60335364002, 60335364003, 60335364004, 60335364005, 60335364006, 60335364007, 60335364008, 60335364009, 60335364010, 60335364012, 60335364013, 60335364014, 60335364016, 60335364017, 60335364018

METHOD BLANK: 2650312 Matrix: Water  
Associated Lab Samples: 60335364001, 60335364002, 60335364003, 60335364004, 60335364005, 60335364006, 60335364007, 60335364008, 60335364009, 60335364010, 60335364012, 60335364013, 60335364014, 60335364016, 60335364017, 60335364018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.097	1.0	0.097	05/14/20 17:52	
Arsenic	ug/L	<0.086	1.0	0.086	05/14/20 17:52	
Cadmium	ug/L	<0.056	0.50	0.056	05/14/20 17:52	
Chromium	ug/L	<0.22	1.0	0.22	05/14/20 17:52	
Selenium	ug/L	<0.18	1.0	0.18	05/14/20 17:52	
Thallium	ug/L	<0.093	1.0	0.093	05/14/20 17:52	

LABORATORY CONTROL SAMPLE: 2650313

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	39.7	99	85-115	
Arsenic	ug/L	40	39.3	98	85-115	
Cadmium	ug/L	40	39.7	99	85-115	
Chromium	ug/L	40	38.6	97	85-115	
Selenium	ug/L	40	38.1	95	85-115	
Thallium	ug/L	40	37.5	94	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2650314 2650315

Parameter	Units	60335364006		2650315		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Antimony	ug/L	0.34J	40	40	39.5	38.9	98	96	70-130	2	20
Arsenic	ug/L	2.0	40	40	42.0	41.6	100	99	70-130	1	20
Cadmium	ug/L	0.080J	40	40	39.0	38.1	97	95	70-130	2	20
Chromium	ug/L	<0.22	40	40	37.0	36.8	92	92	70-130	1	20
Selenium	ug/L	5.8	40	40	42.4	41.8	92	90	70-130	2	20
Thallium	ug/L	<0.093	40	40	39.0	38.7	97	97	70-130	1	20

MATRIX SPIKE SAMPLE: 2650316

Parameter	Units	60335364014 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.097	40	39.1	98	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**

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



### QUALITY CONTROL DATA

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

MATRIX SPIKE SAMPLE:		2650316					
Parameter	Units	60335364014 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	0.58J	40	40.6	100	70-130	
Cadmium	ug/L	0.077J	40	38.4	96	70-130	
Chromium	ug/L	<0.22	40	37.8	94	70-130	
Selenium	ug/L	0.28J	40	36.6	91	70-130	
Thallium	ug/L	<0.093	40	39.8	99	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

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch:	653336	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: 60335364019, 60335364020, 60335364021, 60335364022, 60335364023, 60335364024, 60335364025

METHOD BLANK: 2650324 Matrix: Water

Associated Lab Samples: 60335364019, 60335364020, 60335364021, 60335364022, 60335364023, 60335364024, 60335364025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.097	1.0	0.097	05/13/20 15:37	
Arsenic	ug/L	<0.086	1.0	0.086	05/13/20 15:37	
Cadmium	ug/L	<0.056	0.50	0.056	05/13/20 15:37	
Chromium	ug/L	<0.22	1.0	0.22	05/13/20 15:37	
Selenium	ug/L	<0.18	1.0	0.18	05/13/20 15:37	
Thallium	ug/L	<0.093	1.0	0.093	05/13/20 15:37	

LABORATORY CONTROL SAMPLE: 2650325

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	40.6	101	85-115	
Arsenic	ug/L	40	34.6	87	85-115	
Cadmium	ug/L	40	35.8	90	85-115	
Chromium	ug/L	40	39.3	98	85-115	
Selenium	ug/L	40	34.4	86	85-115	
Thallium	ug/L	40	39.5	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2650326 2650327

Parameter	Units	60335361003		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Antimony	ug/L	<0.097	40	40	40.5	39.2	101	98	70-130	3	20		
Arsenic	ug/L	2.3	40	40	36.5	35.3	86	83	70-130	3	20		
Cadmium	ug/L	<0.056	40	40	34.2	33.3	85	83	70-130	3	20		
Chromium	ug/L	<0.22	40	40	38.6	36.8	96	92	70-130	5	20		
Selenium	ug/L	0.22J	40	40	32.3	31.3	80	78	70-130	3	20		
Thallium	ug/L	<0.093	40	40	36.7	35.9	92	90	70-130	2	20		

MATRIX SPIKE SAMPLE: 2650328

Parameter	Units	60335364020 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	0.86J	40	41.5	102	70-130	
Arsenic	ug/L	0.14J	40	33.7	84	70-130	
Cadmium	ug/L	<0.056	40	34.8	87	70-130	
Chromium	ug/L	0.33J	40	38.4	95	70-130	
Selenium	ug/L	<0.18	40	32.1	80	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

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

MATRIX SPIKE SAMPLE:		2650328					
Parameter	Units	60335364020 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Thallium	ug/L	<0.093	40	37.4	93	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

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch: 652429

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60335364001, 60335364002, 60335364013, 60335364014

METHOD BLANK: 2646871

Matrix: Water

Associated Lab Samples: 60335364001, 60335364002, 60335364013, 60335364014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<8.4	20.0	8.4	05/01/20 14:04	

LABORATORY CONTROL SAMPLE: 2646872

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	513	103	90-110	

SAMPLE DUPLICATE: 2646873

Parameter	Units	60335791001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	271	280	3	10	

SAMPLE DUPLICATE: 2646874

Parameter	Units	60335363001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	350	345	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

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

**QUALITY CONTROL DATA**

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch:	652555	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60335364003, 60335364004, 60335364005, 60335364006, 60335364007, 60335364008, 60335364009		

METHOD BLANK:	2647465	Matrix:	Water
Associated Lab Samples:	60335364003, 60335364004, 60335364005, 60335364006, 60335364007, 60335364008, 60335364009		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<8.4	20.0	8.4	05/04/20 11:35	

LABORATORY CONTROL SAMPLE: 2647466						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	493	99	90-110	

SAMPLE DUPLICATE: 2647467						
Parameter	Units	60335395014 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	990	1110	12	10	D6

SAMPLE DUPLICATE: 2647468						
Parameter	Units	60335364006 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	216	224	3	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**

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch: 652683

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60335364010, 60335364012

METHOD BLANK: 2647739

Matrix: Water

Associated Lab Samples: 60335364010, 60335364012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	<8.4	20.0	8.4	05/04/20 16:44	

LABORATORY CONTROL SAMPLE: 2647740

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	500	503	101	90-110	

SAMPLE DUPLICATE: 2647741

Parameter	Units	60335364010 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	382	400	5	10	

SAMPLE DUPLICATE: 2647742

Parameter	Units	60335416009 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	616	650	5	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

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch: 653257	Analysis Method: SM 2320B
QC Batch Method: SM 2320B	Analysis Description: 2320B Alkalinity
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60335364016, 60335364017, 60335364018

METHOD BLANK: 2649868 Matrix: Water

Associated Lab Samples: 60335364016, 60335364017, 60335364018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<8.4	20.0	8.4	05/06/20 17:28	

LABORATORY CONTROL SAMPLE: 2649869

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	497	99	90-110	

SAMPLE DUPLICATE: 2649870

Parameter	Units	60335571008 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	567	540	5	10	

SAMPLE DUPLICATE: 2649871

Parameter	Units	60335360003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	352	351	0	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

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch: 653472

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60335364019, 60335364020, 60335364021, 60335364022, 60335364023, 60335364024

METHOD BLANK: 2650891

Matrix: Water

Associated Lab Samples: 60335364019, 60335364020, 60335364021, 60335364022, 60335364023, 60335364024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<8.4	20.0	8.4	05/08/20 16:51	

LABORATORY CONTROL SAMPLE: 2650892

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	487	97	90-110	

SAMPLE DUPLICATE: 2650893

Parameter	Units	60335363005 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	77.2	78.6	2	10	

SAMPLE DUPLICATE: 2650894

Parameter	Units	60335364022 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	444	461	4	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

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



### QUALITY CONTROL DATA

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch: 653935

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60335364025

METHOD BLANK: 2653023

Matrix: Water

Associated Lab Samples: 60335364025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	<8.4	20.0	8.4	05/12/20 16:22	

LABORATORY CONTROL SAMPLE: 2653024

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	500	490	98	90-110	

SAMPLE DUPLICATE: 2653025

Parameter	Units	60336093026 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	497	500	0	10	

SAMPLE DUPLICATE: 2653026

Parameter	Units	60336223004 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	581	585	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

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch: 651545	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60335364001, 60335364002, 60335364013

METHOD BLANK: 2643651 Matrix: Water

Associated Lab Samples: 60335364001, 60335364002, 60335364013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	04/28/20 14:10	

LABORATORY CONTROL SAMPLE: 2643652

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	995	100	80-120	

SAMPLE DUPLICATE: 2643653

Parameter	Units	60335395021 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	178	178	0	10	

SAMPLE DUPLICATE: 2643654

Parameter	Units	60335247005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	213	216	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

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch: 651780

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60335364003, 60335364004, 60335364005, 60335364006, 60335364007, 60335364008, 60335364009, 60335364010, 60335364012, 60335364014

METHOD BLANK: 2644351

Matrix: Water

Associated Lab Samples: 60335364003, 60335364004, 60335364005, 60335364006, 60335364007, 60335364008, 60335364009, 60335364010, 60335364012, 60335364014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	04/29/20 09:57	

LABORATORY CONTROL SAMPLE: 2644352

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	993	99	80-120	

SAMPLE DUPLICATE: 2644353

Parameter	Units	60335364014 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	472	471	0	10	

SAMPLE DUPLICATE: 2644354

Parameter	Units	60335364006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	412	420	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

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch: 652054

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60335364016, 60335364017, 60335364018

METHOD BLANK: 2645321

Matrix: Water

Associated Lab Samples: 60335364016, 60335364017, 60335364018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	04/30/20 14:23	

LABORATORY CONTROL SAMPLE: 2645322

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	991	99	80-120	

SAMPLE DUPLICATE: 2645323

Parameter	Units	60335416002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	196	191	3	10	

SAMPLE DUPLICATE: 2645324

Parameter	Units	60335360003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	399	395	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

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

**QUALITY CONTROL DATA**

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch:	652673	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60335364019, 60335364020, 60335364021, 60335364022, 60335364023, 60335364024, 60335364025

METHOD BLANK: 2647724 Matrix: Water

Associated Lab Samples: 60335364019, 60335364020, 60335364021, 60335364022, 60335364023, 60335364024, 60335364025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/04/20 15:19	

LABORATORY CONTROL SAMPLE: 2647725

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	998	100	80-120	

SAMPLE DUPLICATE: 2647726

Parameter	Units	60335364019 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	490	504	3	10	

SAMPLE DUPLICATE: 2647727

Parameter	Units	60335830001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	226	227	0	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**

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch: 651256

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: 60335364001, 60335364002, 60335364003, 60335364004, 60335364005, 60335364006, 60335364007, 60335364008, 60335364009, 60335364010, 60335364012, 60335364013, 60335364014

METHOD BLANK: 2642663

Matrix: Water

Associated Lab Samples: 60335364001, 60335364002, 60335364003, 60335364004, 60335364005, 60335364006, 60335364007, 60335364008, 60335364009, 60335364010, 60335364012, 60335364013, 60335364014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.035	0.20	0.035	04/25/20 10:56	H6

LABORATORY CONTROL SAMPLE: 2642664

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.1	104	90-110	H6

SAMPLE DUPLICATE: 2642665

Parameter	Units	60335364006 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	<0.035	<0.035		20	H6

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

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch: 651888

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: 60335364016, 60335364017

METHOD BLANK: 2644762

Matrix: Water

Associated Lab Samples: 60335364016, 60335364017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.035	0.20	0.035	04/29/20 14:10	H6

LABORATORY CONTROL SAMPLE: 2644763

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

SAMPLE DUPLICATE: 2644764

Parameter	Units	60335363005 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	<0.035	<0.035		20	H6

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

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch: 652051

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: 60335364018

METHOD BLANK: 2645311

Matrix: Water

Associated Lab Samples: 60335364018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.035	0.20	0.035	04/30/20 12:54	H6

LABORATORY CONTROL SAMPLE: 2645312

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

SAMPLE DUPLICATE: 2645313

Parameter	Units	60335364018 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.12J	0.13J		20	H6

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

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



### QUALITY CONTROL DATA

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch: 652510

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: 60335364019, 60335364020, 60335364021, 60335364022, 60335364023, 60335364024, 60335364025

METHOD BLANK: 2647415

Matrix: Water

Associated Lab Samples: 60335364019, 60335364020, 60335364021, 60335364022, 60335364023, 60335364024, 60335364025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.035	0.20	0.035	05/04/20 10:40	H6

LABORATORY CONTROL SAMPLE: 2647416

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

SAMPLE DUPLICATE: 2647417

Parameter	Units	60335364020 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.18J	0.19J		20	H6

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

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch: 651299

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: 60335364001, 60335364002, 60335364003, 60335364004, 60335364005, 60335364006, 60335364007, 60335364008, 60335364009, 60335364010, 60335364012, 60335364013, 60335364014

METHOD BLANK: 2642921

Matrix: Water

Associated Lab Samples: 60335364001, 60335364002, 60335364003, 60335364004, 60335364005, 60335364006, 60335364007, 60335364008, 60335364009, 60335364010, 60335364012, 60335364013, 60335364014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.039	0.050	0.039	04/27/20 11:04	

LABORATORY CONTROL SAMPLE: 2642922

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.55	109	80-120	

MATRIX SPIKE SAMPLE: 2642924

Parameter	Units	60335364006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.039	0.5	0.37	74	75-125	M1

SAMPLE DUPLICATE: 2642923

Parameter	Units	60335247008 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	<0.039		20	

SAMPLE DUPLICATE: 2642925

Parameter	Units	60335364006 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.039	<0.039		20	

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

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch: 652113

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: 60335364016, 60335364017, 60335364018

METHOD BLANK: 2645575

Matrix: Water

Associated Lab Samples: 60335364016, 60335364017, 60335364018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.039	0.050	0.039	04/30/20 10:50	

LABORATORY CONTROL SAMPLE: 2645576

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

MATRIX SPIKE SAMPLE: 2645577

Parameter	Units	60335531002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.30	0.5	0.74	88	75-125	

SAMPLE DUPLICATE: 2645578

Parameter	Units	60335364017 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.039	<0.039		20	

SAMPLE DUPLICATE: 2645579

Parameter	Units	60335363005 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.039	0.044J		20	

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

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

**QUALITY CONTROL DATA**

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch:	652557	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: 60335364019, 60335364020, 60335364021, 60335364022, 60335364023, 60335364024, 60335364025

METHOD BLANK: 2647471 Matrix: Water

Associated Lab Samples: 60335364019, 60335364020, 60335364021, 60335364022, 60335364023, 60335364024, 60335364025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.039	0.050	0.039	05/04/20 11:20	

LABORATORY CONTROL SAMPLE: 2647472

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.55	109	80-120	

MATRIX SPIKE SAMPLE: 2647473

Parameter	Units	60335676001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	ND	0.5	0.58	107	75-125	

SAMPLE DUPLICATE: 2647474

Parameter	Units	60335364020 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.095	0.099	4	20	

SAMPLE DUPLICATE: 2647475

Parameter	Units	60335826001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.050	0.046J		20	

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**

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch:	654661	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: 60335364001, 60335364002, 60335364003, 60335364004, 60335364005

METHOD BLANK: 2655448 Matrix: Water  
Associated Lab Samples: 60335364001, 60335364002, 60335364003, 60335364004, 60335364005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/14/20 15:38	
Fluoride	mg/L	<0.075	0.20	0.075	05/14/20 15:38	
Sulfate	mg/L	<0.28	1.0	0.28	05/14/20 15:38	

METHOD BLANK: 2658820 Matrix: Water  
Associated Lab Samples: 60335364001, 60335364002, 60335364003, 60335364004, 60335364005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/15/20 09:31	
Fluoride	mg/L	<0.075	0.20	0.075	05/15/20 09:31	
Sulfate	mg/L	<0.28	1.0	0.28	05/15/20 09:31	

LABORATORY CONTROL SAMPLE: 2655449

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	2.3	94	90-110	
Sulfate	mg/L	5	4.9	97	90-110	

LABORATORY CONTROL SAMPLE: 2658821

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	93	90-110	
Sulfate	mg/L	5	4.8	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2655450 2655451

Parameter	Units	60336348036		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	Result	MSD Result	% Rec	% Rec					
Chloride	mg/L	125	5	5	129	129	81	86	80-120	0	15	E	
Fluoride	mg/L	0.88	2.5	2.5	3.2	3.3	93	95	80-120	1	15		
Sulfate	mg/L	0.76J	5	5	5.6	5.7	97	99	80-120	2	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

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

MATRIX SPIKE SAMPLE:		2655452					
Parameter	Units	60335595007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	2.2	5	6.8	93	80-120	
Fluoride	mg/L	0.36	2.5	2.7	94	80-120	
Sulfate	mg/L	5.7	5	10.7	101	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.

### REPORT OF LABORATORY ANALYSIS

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

**QUALITY CONTROL DATA**

Project: AMEREN SIOUX SCPA-CA  
Pace Project No.: 60335364

QC Batch: 655383 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: 60335364006, 60335364007, 60335364008, 60335364009, 60335364010, 60335364012, 60335364013, 60335364014

METHOD BLANK: 2658521 Matrix: Water  
Associated Lab Samples: 60335364006, 60335364007, 60335364008, 60335364009, 60335364010, 60335364012, 60335364013, 60335364014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/18/20 11:43	
Fluoride	mg/L	<0.075	0.20	0.075	05/18/20 11:43	
Sulfate	mg/L	<0.28	1.0	0.28	05/18/20 11:43	

METHOD BLANK: 2659286 Matrix: Water  
Associated Lab Samples: 60335364006, 60335364007, 60335364008, 60335364009, 60335364010, 60335364012, 60335364013, 60335364014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/19/20 09:16	
Fluoride	mg/L	<0.075	0.20	0.075	05/19/20 09:16	
Sulfate	mg/L	<0.28	1.0	0.28	05/19/20 09:16	

LABORATORY CONTROL SAMPLE: 2658522

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	101	90-110	
Fluoride	mg/L	2.5	2.4	95	90-110	
Sulfate	mg/L	5	5.4	108	90-110	

LABORATORY CONTROL SAMPLE: 2659287

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	2.3	93	90-110	
Sulfate	mg/L	5	4.8	96	90-110	

MATRIX SPIKE SAMPLE: 2658523

Parameter	Units	60335416011 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5.8	250	963	383	80-120	M1
Fluoride	mg/L	0.50	125	139	111	80-120	
Sulfate	mg/L	8.8	250	359	140	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**

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2658524 2658525											
Parameter	Units	60335364006		MS		MSD		MS		MSD	
		Result	MS Spike Conc.	MSD Spike Conc.	Result	MSD Result	% Rec	MSD % Rec	% Rec Limits	RPD	Max RPD
Chloride	mg/L	20.4	10	10	31.0	31.8	106	114	80-120	3	15
Fluoride	mg/L	0.44	2.5	2.5	2.8	2.9	95	97	80-120	2	15
Sulfate	mg/L	106	50	50	153	160	95	110	80-120	5	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

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



**QUALITY CONTROL DATA**

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch: 655521 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: 60335364016, 60335364017, 60335364018, 60335364019, 60335364020, 60335364021, 60335364022, 60335364023, 60335364024, 60335364025

METHOD BLANK: 2658959 Matrix: Water

Associated Lab Samples: 60335364016, 60335364017, 60335364018, 60335364019, 60335364020, 60335364021, 60335364022, 60335364023, 60335364024, 60335364025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/19/20 09:19	
Fluoride	mg/L	<0.075	0.20	0.075	05/19/20 09:19	
Sulfate	mg/L	<0.28	1.0	0.28	05/19/20 09:19	

METHOD BLANK: 2660762 Matrix: Water

Associated Lab Samples: 60335364016, 60335364017, 60335364018, 60335364019, 60335364020, 60335364021, 60335364022, 60335364023, 60335364024, 60335364025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/20/20 09:31	
Fluoride	mg/L	<0.075	0.20	0.075	05/20/20 09:31	
Sulfate	mg/L	<0.28	1.0	0.28	05/20/20 09:31	

METHOD BLANK: 2660856 Matrix: Water

Associated Lab Samples: 60335364016, 60335364017, 60335364018, 60335364019, 60335364020, 60335364021, 60335364022, 60335364023, 60335364024, 60335364025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/21/20 09:26	
Fluoride	mg/L	<0.075	0.20	0.075	05/21/20 09:26	
Sulfate	mg/L	<0.28	1.0	0.28	05/21/20 09:26	

LABORATORY CONTROL SAMPLE: 2658960

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	94	90-110	
Fluoride	mg/L	2.5	2.5	101	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

LABORATORY CONTROL SAMPLE: 2660763

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	95	90-110	

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**

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

LABORATORY CONTROL SAMPLE: 2660763

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.6	103	90-110	
Sulfate	mg/L	5	5.0	99	90-110	

LABORATORY CONTROL SAMPLE: 2660857

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	2.6	103	90-110	
Sulfate	mg/L	5	4.9	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2658961 2658962

Parameter	Units	60335364016		2658962		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.						
Chloride	mg/L	51.6	25	25	78.3	78.2	107	106	80-120	0	15
Fluoride	mg/L	0.39	2.5	2.5	2.9	3.0	99	104	80-120	4	15
Sulfate	mg/L	68.2	25	25	93.9	93.7	103	102	80-120	0	15

MATRIX SPIKE SAMPLE: 2658963

Parameter	Units	60335364024 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	7.7	5	13.4	114	80-120	
Fluoride	mg/L	0.30	2.5	3.0	110	80-120	
Sulfate	mg/L	86.1	50	142	111	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.

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-AM-1S**      **Lab ID: 60335364001**      Collected: 04/22/20 13:25      Received: 04/24/20 02:40      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	<b>0.000 ± 0.303 (0.617)</b> <b>C:NA T:93%</b>	pCi/L	05/18/20 16:46	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.140 ± 0.335 (0.745)</b> <b>C:80% T:90%</b>	pCi/L	05/15/20 11:04	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-AM-1D**      **Lab ID: 60335364002**      Collected: 04/22/20 14:10      Received: 04/24/20 02:40      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	<b>0.0653 ± 0.298 (0.481)</b> <b>C:NA T:93%</b>	pCi/L	05/18/20 16:46	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.695 ± 0.453 (0.869)</b> <b>C:81% T:84%</b>	pCi/L	05/15/20 14:17	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-CA-DUP-2**      **Lab ID: 60335364003**      Collected: 04/23/20 08:00      Received: 04/24/20 02:40      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	<b>0.120 ± 0.287 (0.555)</b> <b>C:NA T:97%</b>	pCi/L	05/18/20 17:01	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>-0.0814 ± 0.407 (0.954)</b> <b>C:81% T:86%</b>	pCi/L	05/15/20 14:17	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-CA-FB-1**      **Lab ID: 60335364004**      Collected: 04/23/20 09:20      Received: 04/24/20 02:40      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	<b>0.130 ± 0.511 (0.978)</b> <b>C:NA T:92%</b>	pCi/L	05/18/20 16:46	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.336 ± 0.432 (0.920)</b> <b>C:69% T:79%</b>	pCi/L	05/15/20 12:44	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

**ANALYTICAL RESULTS - RADIOCHEMISTRY**

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-CA-FB-2**      **Lab ID: 60335364005**      Collected: 04/23/20 14:20      Received: 04/24/20 02:40      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	<b>0.0640 ± 0.332 (0.688)</b> <b>C:NA T:92%</b>	pCi/L	05/18/20 17:20	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>-0.160 ± 0.389 (0.935)</b> <b>C:76% T:77%</b>	pCi/L	05/15/20 11:04	15262-20-1	

**REPORT OF LABORATORY ANALYSIS**

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

**ANALYTICAL RESULTS - RADIOCHEMISTRY**

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-LMW-1S**      **Lab ID: 60335364006**      Collected: 04/23/20 13:50      Received: 04/24/20 02:40      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	<b>0.000 ± 0.364 (0.769)</b> <b>C:NA T:86%</b>	pCi/L	05/18/20 17:20	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.0219 ± 0.407 (0.938)</b> <b>C:71% T:84%</b>	pCi/L	05/15/20 15:51	15262-20-1	

**REPORT OF LABORATORY ANALYSIS**

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



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-LMW-2S**      **Lab ID: 60335364007**      Collected: 04/23/20 12:30      Received: 04/24/20 02:40      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	<b>-0.134 ± 0.455 (1.01)</b> <b>C:NA T:91%</b>	pCi/L	05/18/20 17:20	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>1.34 ± 0.577 (0.950)</b> <b>C:69% T:78%</b>	pCi/L	05/15/20 12:45	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-LMW-4S**      **Lab ID: 60335364008**      Collected: 04/23/20 13:50      Received: 04/24/20 02:40      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	<b>0.414 ± 0.430 (0.641)</b> <b>C:NA T:82%</b>	pCi/L	05/18/20 17:09	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.966 ± 0.469 (0.816)</b> <b>C:73% T:89%</b>	pCi/L	05/15/20 15:51	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-LMW-5S**      **Lab ID: 60335364009**      Collected: 04/23/20 10:15      Received: 04/24/20 02:40      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	<b>0.361 ± 0.377 (0.532)</b> <b>C:NA T:86%</b>	pCi/L	05/18/20 17:09	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.807 ± 0.460 (0.842)</b> <b>C:69% T:84%</b>	pCi/L	05/15/20 12:45	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-LMW-6S**      **Lab ID: 60335364010**      Collected: 04/23/20 11:05      Received: 04/24/20 02:40      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	<b>0.129 ± 0.309 (0.597)</b> <b>C:NA T:94%</b>	pCi/L	05/18/20 17:09	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.409 ± 0.421 (0.877)</b> <b>C:71% T:86%</b>	pCi/L	05/15/20 12:45	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-CA-LMW-1S-MS-1**      **Lab ID: 60335364011**      Collected: 04/23/20 13:50      Received: 04/24/20 02:40      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	<b>77.65 %REC ± NA (NA)</b> <b>C:NA T:NA%</b>	pCi/L	05/18/20 17:20	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>71.58 %REC ± NA (NA)</b> <b>C:NA T:NA</b>	pCi/L	05/15/20 15:51	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-CA-DUP-1**      **Lab ID: 60335364012**      Collected: 04/23/20 08:00      Received: 04/24/20 02:40      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	<b>-0.201 ± 0.474 (1.06)</b> <b>C:NA T:91%</b>	pCi/L	05/18/20 16:46	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>0.977 ± 0.503 (0.899)</b> <b>C:74% T:80%</b>	pCi/L	05/15/20 12:44	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-BMW-1S**      **Lab ID: 60335364013**      Collected: 04/22/20 14:55      Received: 04/24/20 02:40      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	<b>0.189 ± 0.372 (0.679)</b> <b>C:NA T:93%</b>	pCi/L	05/18/20 16:46	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.592 ± 0.468 (0.940)</b> <b>C:81% T:87%</b>	pCi/L	05/15/20 14:17	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-BMW-3S**      **Lab ID: 60335364014**      Collected: 04/22/20 13:40      Received: 04/24/20 02:40      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	<b>0.000 ± 0.409 (0.864)</b> <b>C:NA T:93%</b>	pCi/L	05/18/20 16:46	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>-0.110 ± 0.489 (1.14)</b> <b>C:77% T:78%</b>	pCi/L	05/15/20 14:17	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-CA-LMW-1-MSD-1**      **Lab ID: 60335364015**      Collected: 04/23/20 13:50      Received: 04/24/20 02:40      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	<b>81.69 %REC 5.07 RPD ±</b> <b>NA (NA)</b> <b>C:NA T:NA%</b>	pCi/L	05/18/20 17:09	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>93.37 %REC 26.42 RPD ±</b> <b>NA (NA)</b> <b>C:NA T:NA</b>	pCi/L	05/15/20 15:51	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-UG-3**      **Lab ID: 60335364016**      Collected: 04/27/20 13:25      Received: 04/29/20 03:12      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	<b>0.280 ± 0.434 (0.752)</b> <b>C:NA T:89%</b>	pCi/L	05/21/20 14:49	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.752 ± 0.380 (0.651)</b> <b>C:84% T:82%</b>	pCi/L	05/19/20 14:09	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-TP-5D**      **Lab ID: 60335364017**      Collected: 04/27/20 14:20      Received: 04/29/20 03:12      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	<b>0.330 ± 0.468 (0.793)</b> <b>C:NA T:90%</b>	pCi/L	05/21/20 14:49	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.590 ± 0.450 (0.901)</b> <b>C:85% T:85%</b>	pCi/L	05/19/20 14:09	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-TP-8D**      **Lab ID: 60335364018**      Collected: 04/27/20 16:00      Received: 04/29/20 03:12      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	<b>0.434 ± 0.560 (0.931)</b> <b>C:NA T:84%</b>	pCi/L	05/21/20 14:49	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.860 ± 0.415 (0.728)</b> <b>C:83% T:95%</b>	pCi/L	05/19/20 14:09	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-TP-6S**      **Lab ID: 60335364019**      Collected: 04/29/20 10:38      Received: 05/01/20 02:30      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.176 ± 0.383 (0.706)</b> <b>C:NA T:94%</b>	pCi/L	05/25/20 14:44	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.196 ± 0.338 (0.736)</b> <b>C:85% T:89%</b>	pCi/L	05/21/20 14:06	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-TP-6D**      **Lab ID: 60335364020**      Collected: 04/29/20 09:27      Received: 05/01/20 02:30      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.355 ± 0.331 (0.435)</b> <b>C:NA T:91%</b>	pCi/L	05/25/20 14:35	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.565 ± 0.466 (0.936)</b> <b>C:71% T:84%</b>	pCi/L	05/21/20 14:06	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-PZ-1S**      **Lab ID: 60335364021**      Collected: 04/29/20 10:15      Received: 05/01/20 02:30      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.321 ± 0.380 (0.597)</b> <b>C:NA T:89%</b>	pCi/L	05/25/20 14:35	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.895 ± 0.461 (0.818)</b> <b>C:78% T:83%</b>	pCi/L	05/21/20 14:06	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-TP-2D**      **Lab ID: 60335364022**      Collected: 04/29/20 12:30      Received: 05/01/20 02:30      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	<b>-0.139 ± 0.335 (0.837)</b> <b>C:NA T:86%</b>	pCi/L	05/25/20 14:35	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>0.288 ± 0.365 (0.775)</b> <b>C:77% T:85%</b>	pCi/L	05/21/20 14:06	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-TP-4D**      **Lab ID: 60335364023**      Collected: 04/29/20 12:07      Received: 05/01/20 02:30      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>1.14 ± 0.625 (0.765)</b> <b>C:NA T:97%</b>	pCi/L	05/25/20 14:35	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.537 ± 0.357 (0.674)</b> <b>C:79% T:84%</b>	pCi/L	05/21/20 14:06	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

**Sample: S-TP-3D**      **Lab ID: 60335364024**      Collected: 04/29/20 13:42      Received: 05/01/20 02:30      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.330 ± 0.431 (0.711)</b> <b>C:NA T:92%</b>	pCi/L	05/25/20 15:05	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.745 ± 0.421 (0.767)</b> <b>C:65% T:93%</b>	pCi/L	05/21/20 12:34	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

**ANALYTICAL RESULTS - RADIOCHEMISTRY**

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: S-PZ-9D</b> <b>Lab ID: 60335364025</b> Collected: 04/30/20 10:30      Received: 05/01/20 02:30      Matrix: Water PWS:      Site ID:      Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.604 ± 0.514 (0.723)</b> <b>C:NA T:88%</b>	pCi/L	05/25/20 15:05	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.785 ± 0.411 (0.713)</b> <b>C:66% T:86%</b>	pCi/L	05/21/20 12:34	15262-20-1	

**REPORT OF LABORATORY ANALYSIS**

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

### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch: 395154

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: 60335364024, 60335364025

METHOD BLANK: 1913458

Matrix: Water

Associated Lab Samples: 60335364024, 60335364025

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.107 ± 0.331 (0.753) C:NA T:86%	pCi/L	05/25/20 15:05	

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

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

### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch: 394312

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: 60335364001, 60335364002, 60335364003, 60335364004, 60335364005, 60335364006, 60335364007, 60335364008, 60335364009, 60335364010, 60335364011, 60335364012, 60335364013, 60335364014, 60335364015

METHOD BLANK: 1909699

Matrix: Water

Associated Lab Samples: 60335364001, 60335364002, 60335364003, 60335364004, 60335364005, 60335364006, 60335364007, 60335364008, 60335364009, 60335364010, 60335364011, 60335364012, 60335364013, 60335364014, 60335364015

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.451 ± 0.366 (0.731) C:81% T:81%	pCi/L	05/15/20 11:04	

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

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

### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch: 395152

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: 60335364019, 60335364020, 60335364021, 60335364022, 60335364023

METHOD BLANK: 1913446

Matrix: Water

Associated Lab Samples: 60335364019, 60335364020, 60335364021, 60335364022, 60335364023

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.145 ± 0.251 (0.634) C:NA T:92%	pCi/L	05/25/20 14:07	

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

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

### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch: 395151

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: 60335364019, 60335364020, 60335364021, 60335364022, 60335364023

METHOD BLANK: 1913444

Matrix: Water

Associated Lab Samples: 60335364019, 60335364020, 60335364021, 60335364022, 60335364023

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.810 ± 0.404 (0.699) C:81% T:80%	pCi/L	05/21/20 11:02	

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

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

**QUALITY CONTROL - RADIOCHEMISTRY**

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch: 394313

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: 60335364001, 60335364002, 60335364003, 60335364004, 60335364005, 60335364006, 60335364007, 60335364008, 60335364009, 60335364010, 60335364011, 60335364012, 60335364013, 60335364014, 60335364015

METHOD BLANK: 1909704

Matrix: Water

Associated Lab Samples: 60335364001, 60335364002, 60335364003, 60335364004, 60335364005, 60335364006, 60335364007, 60335364008, 60335364009, 60335364010, 60335364011, 60335364012, 60335364013, 60335364014, 60335364015

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.228 ± 0.476 (0.857) C:NA T:78%	pCi/L	05/18/20 16:46	

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**

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



### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch: 394639

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: 60335364016, 60335364017, 60335364018

METHOD BLANK: 1911019

Matrix: Water

Associated Lab Samples: 60335364016, 60335364017, 60335364018

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.460 ± 0.293 (0.553) C:87% T:96%	pCi/L	05/19/20 11:00	

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

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

### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch: 394795

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: 60335364016, 60335364017, 60335364018

METHOD BLANK: 1911721

Matrix: Water

Associated Lab Samples: 60335364016, 60335364017, 60335364018

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.0575 ± 0.374 (0.811) C:NA T:78%	pCi/L	05/21/20 14:21	

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

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

### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

QC Batch: 395156

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: 60335364024, 60335364025

METHOD BLANK: 1913461

Matrix: Water

Associated Lab Samples: 60335364024, 60335364025

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.342 ± 0.344 (0.708) C:71% T:80%	pCi/L	05/21/20 12:34	

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

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

## QUALIFIERS

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

---

### 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.

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

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.

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

## REPORT OF LABORATORY ANALYSIS

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

### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SIOUX SPCA-CA

Pace Project No.: 60335364

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60335364001	S-AM-1S	EPA 200.7	651902	EPA 200.7	651984
60335364002	S-AM-1D	EPA 200.7	651902	EPA 200.7	651984
60335364003	S-CA-DUP-2	EPA 200.7	651902	EPA 200.7	651984
60335364004	S-CA-FB-1	EPA 200.7	651902	EPA 200.7	651984
60335364005	S-CA-FB-2	EPA 200.7	651902	EPA 200.7	651984
60335364006	S-LMW-1S	EPA 200.7	651902	EPA 200.7	651984
60335364007	S-LMW-2S	EPA 200.7	651902	EPA 200.7	651984
60335364008	S-LMW-4S	EPA 200.7	651902	EPA 200.7	651984
60335364009	S-LMW-5S	EPA 200.7	651902	EPA 200.7	651984
60335364010	S-LMW-6S	EPA 200.7	651902	EPA 200.7	651984
60335364012	S-CA-DUP-1	EPA 200.7	651902	EPA 200.7	651984
60335364013	S-BMW-1S	EPA 200.7	651902	EPA 200.7	651984
60335364014	S-BMW-3S	EPA 200.7	651902	EPA 200.7	651984
60335364016	S-UG-3	EPA 200.7	652406	EPA 200.7	652606
60335364017	S-TP-5D	EPA 200.7	652406	EPA 200.7	652606
60335364018	S-TP-8D	EPA 200.7	652406	EPA 200.7	652606
60335364019	S-TP-6S	EPA 200.7	652626	EPA 200.7	652665
60335364020	S-TP-6D	EPA 200.7	652626	EPA 200.7	652665
60335364021	S-PZ-1S	EPA 200.7	652626	EPA 200.7	652665
60335364022	S-TP-2D	EPA 200.7	652626	EPA 200.7	652665
60335364023	S-TP-4D	EPA 200.7	652626	EPA 200.7	652665
60335364024	S-TP-3D	EPA 200.7	653354	EPA 200.7	653397
60335364025	S-PZ-9D	EPA 200.7	653354	EPA 200.7	653397
60335364001	S-AM-1S	EPA 200.8	653332	EPA 200.8	653393
60335364002	S-AM-1D	EPA 200.8	653332	EPA 200.8	653393
60335364003	S-CA-DUP-2	EPA 200.8	653332	EPA 200.8	653393
60335364004	S-CA-FB-1	EPA 200.8	653332	EPA 200.8	653393
60335364005	S-CA-FB-2	EPA 200.8	653332	EPA 200.8	653393
60335364006	S-LMW-1S	EPA 200.8	653332	EPA 200.8	653393
60335364007	S-LMW-2S	EPA 200.8	653332	EPA 200.8	653393
60335364008	S-LMW-4S	EPA 200.8	653332	EPA 200.8	653393
60335364009	S-LMW-5S	EPA 200.8	653332	EPA 200.8	653393
60335364010	S-LMW-6S	EPA 200.8	653332	EPA 200.8	653393
60335364012	S-CA-DUP-1	EPA 200.8	653332	EPA 200.8	653393
60335364013	S-BMW-1S	EPA 200.8	653332	EPA 200.8	653393
60335364014	S-BMW-3S	EPA 200.8	653332	EPA 200.8	653393
60335364016	S-UG-3	EPA 200.8	653332	EPA 200.8	653393
60335364017	S-TP-5D	EPA 200.8	653332	EPA 200.8	653393
60335364018	S-TP-8D	EPA 200.8	653332	EPA 200.8	653393
60335364019	S-TP-6S	EPA 200.8	653336	EPA 200.8	653394
60335364020	S-TP-6D	EPA 200.8	653336	EPA 200.8	653394
60335364021	S-PZ-1S	EPA 200.8	653336	EPA 200.8	653394
60335364022	S-TP-2D	EPA 200.8	653336	EPA 200.8	653394
60335364023	S-TP-4D	EPA 200.8	653336	EPA 200.8	653394
60335364024	S-TP-3D	EPA 200.8	653336	EPA 200.8	653394
60335364025	S-PZ-9D	EPA 200.8	653336	EPA 200.8	653394

### REPORT OF LABORATORY ANALYSIS

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

### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60335364001	S-AM-1S	EPA 7470	654727	EPA 7470	654918
60335364002	S-AM-1D	EPA 7470	654727	EPA 7470	654918
60335364003	S-CA-DUP-2	EPA 7470	654727	EPA 7470	654918
60335364004	S-CA-FB-1	EPA 7470	654727	EPA 7470	654918
60335364005	S-CA-FB-2	EPA 7470	654727	EPA 7470	654918
60335364006	S-LMW-1S	EPA 7470	654727	EPA 7470	654918
60335364007	S-LMW-2S	EPA 7470	654727	EPA 7470	654918
60335364008	S-LMW-4S	EPA 7470	654727	EPA 7470	654918
60335364009	S-LMW-5S	EPA 7470	654727	EPA 7470	654918
60335364010	S-LMW-6S	EPA 7470	654727	EPA 7470	654918
60335364012	S-CA-DUP-1	EPA 7470	654727	EPA 7470	654918
60335364013	S-BMW-1S	EPA 7470	654727	EPA 7470	654918
60335364014	S-BMW-3S	EPA 7470	654727	EPA 7470	654918
60335364016	S-UG-3	EPA 7470	654727	EPA 7470	654918
60335364017	S-TP-5D	EPA 7470	654727	EPA 7470	654918
60335364018	S-TP-8D	EPA 7470	654727	EPA 7470	654918
60335364019	S-TP-6S	EPA 7470	654727	EPA 7470	654918
60335364020	S-TP-6D	EPA 7470	654727	EPA 7470	654918
60335364021	S-PZ-1S	EPA 7470	654727	EPA 7470	654918
60335364022	S-TP-2D	EPA 7470	654727	EPA 7470	654918
60335364023	S-TP-4D	EPA 7470	654729	EPA 7470	654919
60335364024	S-TP-3D	EPA 7470	654729	EPA 7470	654919
60335364025	S-PZ-9D	EPA 7470	654729	EPA 7470	654919
60335364001	S-AM-1S	EPA 903.1	394313		
60335364002	S-AM-1D	EPA 903.1	394313		
60335364003	S-CA-DUP-2	EPA 903.1	394313		
60335364004	S-CA-FB-1	EPA 903.1	394313		
60335364005	S-CA-FB-2	EPA 903.1	394313		
60335364006	S-LMW-1S	EPA 903.1	394313		
60335364007	S-LMW-2S	EPA 903.1	394313		
60335364008	S-LMW-4S	EPA 903.1	394313		
60335364009	S-LMW-5S	EPA 903.1	394313		
60335364010	S-LMW-6S	EPA 903.1	394313		
60335364011	S-CA-LMW-1S-MS-1	EPA 903.1	394313		
60335364012	S-CA-DUP-1	EPA 903.1	394313		
60335364013	S-BMW-1S	EPA 903.1	394313		
60335364014	S-BMW-3S	EPA 903.1	394313		
60335364015	S-CA-LMW-1-MSD-1	EPA 903.1	394313		
60335364016	S-UG-3	EPA 903.1	394795		
60335364017	S-TP-5D	EPA 903.1	394795		
60335364018	S-TP-8D	EPA 903.1	394795		
60335364019	S-TP-6S	EPA 903.1	395152		
60335364020	S-TP-6D	EPA 903.1	395152		
60335364021	S-PZ-1S	EPA 903.1	395152		
60335364022	S-TP-2D	EPA 903.1	395152		
60335364023	S-TP-4D	EPA 903.1	395152		

### REPORT OF LABORATORY ANALYSIS

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

### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60335364024	S-TP-3D	EPA 903.1	395154		
60335364025	S-PZ-9D	EPA 903.1	395154		
60335364001	S-AM-1S	EPA 904.0	394312		
60335364002	S-AM-1D	EPA 904.0	394312		
60335364003	S-CA-DUP-2	EPA 904.0	394312		
60335364004	S-CA-FB-1	EPA 904.0	394312		
60335364005	S-CA-FB-2	EPA 904.0	394312		
60335364006	S-LMW-1S	EPA 904.0	394312		
60335364007	S-LMW-2S	EPA 904.0	394312		
60335364008	S-LMW-4S	EPA 904.0	394312		
60335364009	S-LMW-5S	EPA 904.0	394312		
60335364010	S-LMW-6S	EPA 904.0	394312		
60335364011	S-CA-LMW-1S-MS-1	EPA 904.0	394312		
60335364012	S-CA-DUP-1	EPA 904.0	394312		
60335364013	S-BMW-1S	EPA 904.0	394312		
60335364014	S-BMW-3S	EPA 904.0	394312		
60335364015	S-CA-LMW-1-MSD-1	EPA 904.0	394312		
60335364016	S-UG-3	EPA 904.0	394639		
60335364017	S-TP-5D	EPA 904.0	394639		
60335364018	S-TP-8D	EPA 904.0	394639		
60335364019	S-TP-6S	EPA 904.0	395151		
60335364020	S-TP-6D	EPA 904.0	395151		
60335364021	S-PZ-1S	EPA 904.0	395151		
60335364022	S-TP-2D	EPA 904.0	395151		
60335364023	S-TP-4D	EPA 904.0	395151		
60335364024	S-TP-3D	EPA 904.0	395156		
60335364025	S-PZ-9D	EPA 904.0	395156		
60335364001	S-AM-1S	SM 2320B	652429		
60335364002	S-AM-1D	SM 2320B	652429		
60335364003	S-CA-DUP-2	SM 2320B	652555		
60335364004	S-CA-FB-1	SM 2320B	652555		
60335364005	S-CA-FB-2	SM 2320B	652555		
60335364006	S-LMW-1S	SM 2320B	652555		
60335364007	S-LMW-2S	SM 2320B	652555		
60335364008	S-LMW-4S	SM 2320B	652555		
60335364009	S-LMW-5S	SM 2320B	652555		
60335364010	S-LMW-6S	SM 2320B	652683		
60335364012	S-CA-DUP-1	SM 2320B	652683		
60335364013	S-BMW-1S	SM 2320B	652429		
60335364014	S-BMW-3S	SM 2320B	652429		
60335364016	S-UG-3	SM 2320B	653257		
60335364017	S-TP-5D	SM 2320B	653257		
60335364018	S-TP-8D	SM 2320B	653257		
60335364019	S-TP-6S	SM 2320B	653472		

### REPORT OF LABORATORY ANALYSIS

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

### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60335364020	S-TP-6D	SM 2320B	653472		
60335364021	S-PZ-1S	SM 2320B	653472		
60335364022	S-TP-2D	SM 2320B	653472		
60335364023	S-TP-4D	SM 2320B	653472		
60335364024	S-TP-3D	SM 2320B	653472		
60335364025	S-PZ-9D	SM 2320B	653935		
60335364001	S-AM-1S	SM 2540C	651545		
60335364002	S-AM-1D	SM 2540C	651545		
60335364003	S-CA-DUP-2	SM 2540C	651780		
60335364004	S-CA-FB-1	SM 2540C	651780		
60335364005	S-CA-FB-2	SM 2540C	651780		
60335364006	S-LMW-1S	SM 2540C	651780		
60335364007	S-LMW-2S	SM 2540C	651780		
60335364008	S-LMW-4S	SM 2540C	651780		
60335364009	S-LMW-5S	SM 2540C	651780		
60335364010	S-LMW-6S	SM 2540C	651780		
60335364012	S-CA-DUP-1	SM 2540C	651780		
60335364013	S-BMW-1S	SM 2540C	651545		
60335364014	S-BMW-3S	SM 2540C	651780		
60335364016	S-UG-3	SM 2540C	652054		
60335364017	S-TP-5D	SM 2540C	652054		
60335364018	S-TP-8D	SM 2540C	652054		
60335364019	S-TP-6S	SM 2540C	652673		
60335364020	S-TP-6D	SM 2540C	652673		
60335364021	S-PZ-1S	SM 2540C	652673		
60335364022	S-TP-2D	SM 2540C	652673		
60335364023	S-TP-4D	SM 2540C	652673		
60335364024	S-TP-3D	SM 2540C	652673		
60335364025	S-PZ-9D	SM 2540C	652673		
60335364001	S-AM-1S	SM 3500-Fe B#4	654095		
60335364002	S-AM-1D	SM 3500-Fe B#4	654095		
60335364003	S-CA-DUP-2	SM 3500-Fe B#4	654095		
60335364004	S-CA-FB-1	SM 3500-Fe B#4	654095		
60335364005	S-CA-FB-2	SM 3500-Fe B#4	654095		
60335364006	S-LMW-1S	SM 3500-Fe B#4	654095		
60335364007	S-LMW-2S	SM 3500-Fe B#4	654095		
60335364008	S-LMW-4S	SM 3500-Fe B#4	654095		
60335364009	S-LMW-5S	SM 3500-Fe B#4	654095		
60335364010	S-LMW-6S	SM 3500-Fe B#4	654095		
60335364012	S-CA-DUP-1	SM 3500-Fe B#4	654095		
60335364013	S-BMW-1S	SM 3500-Fe B#4	654095		
60335364014	S-BMW-3S	SM 3500-Fe B#4	654095		
60335364016	S-UG-3	SM 3500-Fe B#4	654157		
60335364017	S-TP-5D	SM 3500-Fe B#4	654157		

### REPORT OF LABORATORY ANALYSIS

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



### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60335364018	S-TP-8D	SM 3500-Fe B#4	654157		
60335364019	S-TP-6S	SM 3500-Fe B#4	654157		
60335364020	S-TP-6D	SM 3500-Fe B#4	654157		
60335364021	S-PZ-1S	SM 3500-Fe B#4	654157		
60335364022	S-TP-2D	SM 3500-Fe B#4	654157		
60335364023	S-TP-4D	SM 3500-Fe B#4	654157		
60335364024	S-TP-3D	SM 3500-Fe B#4	654157		
60335364025	S-PZ-9D	SM 3500-Fe B#4	654157		
60335364001	S-AM-1S	SM 3500-Fe B#4	651256		
60335364002	S-AM-1D	SM 3500-Fe B#4	651256		
60335364003	S-CA-DUP-2	SM 3500-Fe B#4	651256		
60335364004	S-CA-FB-1	SM 3500-Fe B#4	651256		
60335364005	S-CA-FB-2	SM 3500-Fe B#4	651256		
60335364006	S-LMW-1S	SM 3500-Fe B#4	651256		
60335364007	S-LMW-2S	SM 3500-Fe B#4	651256		
60335364008	S-LMW-4S	SM 3500-Fe B#4	651256		
60335364009	S-LMW-5S	SM 3500-Fe B#4	651256		
60335364010	S-LMW-6S	SM 3500-Fe B#4	651256		
60335364012	S-CA-DUP-1	SM 3500-Fe B#4	651256		
60335364013	S-BMW-1S	SM 3500-Fe B#4	651256		
60335364014	S-BMW-3S	SM 3500-Fe B#4	651256		
60335364016	S-UG-3	SM 3500-Fe B#4	651888		
60335364017	S-TP-5D	SM 3500-Fe B#4	651888		
60335364018	S-TP-8D	SM 3500-Fe B#4	652051		
60335364019	S-TP-6S	SM 3500-Fe B#4	652510		
60335364020	S-TP-6D	SM 3500-Fe B#4	652510		
60335364021	S-PZ-1S	SM 3500-Fe B#4	652510		
60335364022	S-TP-2D	SM 3500-Fe B#4	652510		
60335364023	S-TP-4D	SM 3500-Fe B#4	652510		
60335364024	S-TP-3D	SM 3500-Fe B#4	652510		
60335364025	S-PZ-9D	SM 3500-Fe B#4	652510		
60335364001	S-AM-1S	SM 4500-S-2 D	651299		
60335364002	S-AM-1D	SM 4500-S-2 D	651299		
60335364003	S-CA-DUP-2	SM 4500-S-2 D	651299		
60335364004	S-CA-FB-1	SM 4500-S-2 D	651299		
60335364005	S-CA-FB-2	SM 4500-S-2 D	651299		
60335364006	S-LMW-1S	SM 4500-S-2 D	651299		
60335364007	S-LMW-2S	SM 4500-S-2 D	651299		
60335364008	S-LMW-4S	SM 4500-S-2 D	651299		
60335364009	S-LMW-5S	SM 4500-S-2 D	651299		
60335364010	S-LMW-6S	SM 4500-S-2 D	651299		
60335364012	S-CA-DUP-1	SM 4500-S-2 D	651299		
60335364013	S-BMW-1S	SM 4500-S-2 D	651299		
60335364014	S-BMW-3S	SM 4500-S-2 D	651299		
60335364016	S-UG-3	SM 4500-S-2 D	652113		
60335364017	S-TP-5D	SM 4500-S-2 D	652113		

### REPORT OF LABORATORY ANALYSIS

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

## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SIOUX SCPA-CA

Pace Project No.: 60335364

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60335364018	S-TP-8D	SM 4500-S-2 D	652113		
60335364019	S-TP-6S	SM 4500-S-2 D	652557		
60335364020	S-TP-6D	SM 4500-S-2 D	652557		
60335364021	S-PZ-1S	SM 4500-S-2 D	652557		
60335364022	S-TP-2D	SM 4500-S-2 D	652557		
60335364023	S-TP-4D	SM 4500-S-2 D	652557		
60335364024	S-TP-3D	SM 4500-S-2 D	652557		
60335364025	S-PZ-9D	SM 4500-S-2 D	652557		
60335364001	S-AM-1S	EPA 300.0	654661		
60335364002	S-AM-1D	EPA 300.0	654661		
60335364003	S-CA-DUP-2	EPA 300.0	654661		
60335364004	S-CA-FB-1	EPA 300.0	654661		
60335364005	S-CA-FB-2	EPA 300.0	654661		
60335364006	S-LMW-1S	EPA 300.0	655383		
60335364007	S-LMW-2S	EPA 300.0	655383		
60335364008	S-LMW-4S	EPA 300.0	655383		
60335364009	S-LMW-5S	EPA 300.0	655383		
60335364010	S-LMW-6S	EPA 300.0	655383		
60335364012	S-CA-DUP-1	EPA 300.0	655383		
60335364013	S-BMW-1S	EPA 300.0	655383		
60335364014	S-BMW-3S	EPA 300.0	655383		
60335364016	S-UG-3	EPA 300.0	655521		
60335364017	S-TP-5D	EPA 300.0	655521		
60335364018	S-TP-8D	EPA 300.0	655521		
60335364019	S-TP-6S	EPA 300.0	655521		
60335364020	S-TP-6D	EPA 300.0	655521		
60335364021	S-PZ-1S	EPA 300.0	655521		
60335364022	S-TP-2D	EPA 300.0	655521		
60335364023	S-TP-4D	EPA 300.0	655521		
60335364024	S-TP-3D	EPA 300.0	655521		
60335364025	S-PZ-9D	EPA 300.0	655521		

## REPORT OF LABORATORY ANALYSIS

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



Sample Condition Upon Receipt

WO#: 60335364



Client Name: Golder Assoc

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  zpk

Thermometer Used: T-296 Type of Ice: ~~Wet~~ Blue  None

Cooler Temperature (°C): As-read 2.0, 18.2 Corr. Factor +0.1 Corrected 2.1, 18.3

Date and initials of person examining contents: 4/24/20

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 <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) <u>Lot # 603173</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: Jamie Chung Date: 4/24/20



# CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: **2** of **72**

<b>Section A</b> Required Client Information:		<b>Section B</b> Required Project Information:		<b>Section C</b> Invoice Information:	
Company: <b>Goldier Associates</b>		Report To: <b>Jeffrey Ingram</b>		Attention:	
Address: <b>13515 Barrett Parkway Dr., Ste 260</b>		Copy To: <b>Eric Schnieder, Ryan Feldman</b>		Company Name: <b>Goldier Associates Inc</b>	
<b>Ballwin, MO 63021</b>		Purchase Order No.: <b>COC #8</b>		Address:	
Email To: <b>jeffrey_ingram@goldier.com</b>		Project Name: <b>Ameren Sioux Energy Center SCPA-CA</b>		Pace Quote Reference:	
Phone: <b>636-724-9191</b> Fax: <b>636-724-9323</b>		Pace Project Manager: <b>Jamie Church</b>		Site Location: <b>MO</b>	
Requested Due Date/TAT: <b>Standard</b>		Project Number: <b>153140602.0003A</b>		STATE: _____	

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WATER W WASTE WATER WW PRODUCT P SOIL/SOLID SL OIL OL WP AR OT TS	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Requested Analysis Filtered (Y/N)										Pace Project No./ Lab I.D.										
			COMPOSITE START	COMPOSITE END/GRAB			DATE	TIME	Y	N	Y	N	Y	N	Y	N		Y	N	Y	N	Y	N				
1	S-CA-DUP-2		DATE	TIME		6	Unpreserved	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Methanol	Other	Chloride/Fluoride/Sulfate	App III and Cat/An Metals	Alkalinity	TDS	Appendix IV Metals **	Mercury	Radium 226	Radium 226	Ferrous/Ferric Iron	GM4500-S2D Sulfide	Residual Chlorine (Y/N)	600235555611	
2	S-CA-FB-1		4/23/20	09:20																							
3	S-CA-FB-2		4/23/20	14:20																							
4	S-CA-MS-1		4/23/20	13:50																							
5	S-CA-MSD-1		4/23/20	14:55																							
6	SUGS 5-4-DUP-1																										
7	S-LMW-1S																										
8	S-LMW-2S																										
9	S-LMW-4S																										
10	S-LMW-5S																										
11	S-LMW-6S																										
12	S-BMW-1S																										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Eric Schnieder	Goldier	4/23/20	1800	Eric Schnieder / Pace	4/24/20	0240	Temp in C: 09 Received on Ice (Y/N): Y Cooler (Y/N): Y Samples Intact (Y/N): Y

# 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: **Goldier Associates**

Address: **13515 Barrett Parkway Dr., Ste 260**  
**Ballwin, MO 63021**

Email To: **jeffrey\_ingram@goldier.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**

Purchase Order No.: **COC #8**

Project Name: **Ameren Sioux Energy Center SCPA-CA**

Project Number: **153140602.0003A**

**Section C**  
Invoice Information:

Attention: **Eric Schnieder, Ryan Feldman**

Company Name: **Goldier Associates Inc**

Address: **Ballwin, MO 63021**

Face Quote Reference: **9285, line 1**

Face Project Manager: **Jamie Church**

REGULATORY AGENCY: **MO**

NPDES  GROUND WATER  DRINKING WATER  
UST  RCRA  OTHER

Site Location: **MO**

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 WP AR OT TS	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	PRESERVATIVES		Analysis Test ↑	Requested Analysis Filtered (Y/N)												Temp in °C	Received on	Cooler (Y/N)	Custody Sealed (Y/N)	Samples Intact (Y/N)													
			COMPOSITE START	COMPOSITE END/GRAB			DATE	TIME		H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Methanol	Other	Y	N	Y	N	Y						N	Y	N	Y	N	Y	N	Y	N				
1	S-AM-1S				4/27/20 1325				Unpreserved																														
2	S-AM-1D				4/27/20 1410																																		
3	S-PZ-1S				4/27/20 1455																																		
4	S-PZ-9D				4/27/20 1340																																		
5	S-TP-2D																																						
6	S-TP-3D																																						
7	S-TP-4D																																						
8	S-TP-5D																																						
9	S-TP-6S																																						
10	S-TP-6D																																						
11	S-TP-8D																																						
12	S-CA-DUP-1																																						
ADDITIONAL COMMENTS		RELINQUISHED BY / AFFILIATION		DATE		TIME		ACCEPTED BY / AFFILIATION		DATE		TIME		SAMPLE CONDITIONS																									
		Lynn Collier		4/27/20		1:00		Eric Schnieder		4/24/20		0:40		0.9																									
														1.4																									
														19.4																									
														19.0																									
														19.9																									
SAMPLER NAME AND SIGNATURE		PRINT Name of SAMPLER:		DATE Signed (MM/DD/YY):																																			
Eric Schnieder		Lynn Collier		4/23/20																																			



Sample Condition Upon Receipt

WO#: 60335364  
60335364

Client Name: Golder Assoc

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  zpic

Thermometer Used: T298 Type of Ice: Wet Blue  None

Cooler Temperature (°C): As-read 0.5 Corr. Factor 40.1 Corrected 0.6

Date and initials of person examining contents:

Temperature should be above freezing to 6°C 21.4, 20.2, 0.6, 0.8, 0.1, 1.4 21.5, 20.3, 0.7, 0.9, 0.2, 1.5

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	All coolers with out of temp had 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 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	Received extra sample S-TP-8D Taken 4.27.20 at 1600
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 <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) Lot # <u>6003173</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
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: Jamie Church Date: 4/29/20



# CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: **1** of **3**

**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 Schnieder, Ryan Feldman  
 Purchase Order No.: COC #8  
 Project Name: Ameren Sioux Energy Center SCPA-CA  
 Project Number: 153140602.0003A

**Section C**  
 Invoice Information:  
 Attention:  
 Company Name: Golder Associates Inc  
 Address:  
 Face Quote Reference:  
 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 #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WATER WT WASTE WATER WW PRODUCT P SOIL/SOLID SL OIL OL WP AR OT TS	Requested Client Information	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	Preservatives			Requested Analysis Filtered (Y/N)	Pace Project No./ Lab I.D.
			COMPOSITE START	COMPOSITE END/GRAB				DATE	TIME	DATE		
1	S-AM-10-S-06-3		4/27/20	1325	G	WT	6	H <sub>2</sub> SO <sub>4</sub>			Y	60557 S761
2	S-AM-1D				G	WT		HNO <sub>3</sub>			Y	
3	S-PZ-1S				G	WT		HCl			Y	
4	S-PZ-9D				G	WT		NaOH			Y	
5	S-TP-2D				G	WT		Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>			Y	
6	S-TP-3D				G	WT		Methanol			Y	
7	S-TP-4D				G	WT		Other			Y	
8	S-TP-5D		4/27/20	1420	G	WT	6	Unpreserved			Y	
9	S-TP-6S				G	WT					Y	
10	S-TP-6D				G	WT					Y	
11	S-TP-8D				G	WT					Y	
12	S-CA-DUP-1				G	WT					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

**RELINQUISHED BY / AFFILIATION**  
 Eric Schnieder  
 DATE: 4/28/20 TIME: 1700  
 SIGNATURE: [Signature]

**ACCEPTED BY / AFFILIATION**  
 Eric Schnieder  
 DATE: 4/28/20 TIME: 1600  
 SIGNATURE: [Signature]

**TEMPERATURE**  
 SAMPLE TEMP AT COLLECTION: 0.6  
 Temp in °C: 20.5  
 Received on: 0.5  
 Ice (Y/N): Y  
 Custody Sealed (Y/N): Y  
 Samples Intact (Y/N): Y

**SAMPLER NAME AND SIGNATURE**  
 PRINT Name of SAMPLER: Eric Schnieder  
 SIGNATURE of SAMPLER: [Signature]  
 DATE Signed (MM/DD/YY): 04/28/20



Sample Condition Upon Receipt

WO#: 60335364  
60335364

Client Name: Colder Assoc.

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  CPAC

Thermometer Used: T299 Type of Ice: Wet Blue  None

Cooler Temperature (°C): As-read 1.3 Corr. Factor +0.1 Corrected 1.4

Date and initials of person examining contents: 5-1-20<sup>WT</sup>

Temperature should be above freezing to 6°C 17.3, 1.1 17.4, 1.2

Chain of Custody present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<u>cooler out of temp had</u>
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<u>only Radium samples</u>
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	<u>Fe<sub>2</sub></u>
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 <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) Lot # <u>603173</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: Jamie Church 5/4/20  
Date: \_\_\_\_\_





# CHAIN-OF-CUSTODY / Analytical Request Document

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

<b>Section A</b> Required Client Information:		<b>Section B</b> Required Project Information:		<b>Section C</b> Invoice Information:	
Company: <b>Golder Associates</b>		Report To: <b>Jeffrey Ingram</b>		Attention: _____	
Address: <b>13515 Barrett Parkway Dr., Ste 260</b>		Copy To: <b>Eric Schmieder, Ryan Feldman</b>		Company Name: <b>Golder Associates Inc</b>	
Ballwin, MO 63021		Purchase Order No.: <b>COC #8</b>		Address: _____	
Email To: <b>jeffrey Ingram@golder.com</b>		Project Name: <b>Ameren Sioux Energy Center SCPA-CA</b>		Pace Quote Reference: _____	
Phone: <b>636-724-9191</b> Fax: <b>636-724-9323</b>		Project Number: <b>153140602.0003A</b>		Pace Project Manager: <b>Jamie Church</b>	
Requested Due Date/AT: <b>Standard</b>		Site Location: _____		MO STATE: _____	
<b>REGULATORY AGENCY</b>					
<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 _____					

Page: **1** of **2**

ITEM #	Section D Required Client Information	Valid Matrix Codes	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	Preservatives			Analysis Test ↑	Requested Analysis Filtered (Y/N)	Pace Project No./ Lab I.D.
					COMPOSITE START	COMPOSITE END/GRAB				DATE	TIME	DATE			
1	S-BMAL-36	5-TP-6S	WT G	G		4/30/26	1038	6	2	3					
2	S-TP-6D		WT G	G		0927									
3	S-PZ-1S		WT G	G		1015									
4	S-TP-2D		WT G	G		1230									
5	S-TP-4D		WT G	G		1207									
6	S-TP-3D		WT G	G		1542									
7	S-PZ-9D		WT G	G		4/30/26	1030	6	2	3					
8			WT G	G											
9			WT G	G											
10			WT G	G											
11			WT G	G											
12			WT G	G											

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION		ACCEPTED BY / AFFILIATION		SAMPLE CONDITIONS	
	DATE	TIME	DATE	TIME	DATE	TIME
*App III and Cat/An Metals - EPA 200.7; Fe, Mg, Mn, K, Na, Ca, B	4/30/26	1245	4/30	1246		
** App IV Metals - EPA 200.7 - Ba, Be, Co, Pb, Li, Mo 200.8 Metals - Sb, As, Cd, Cr, Se, Ti	4/30	12:46	5.11.26	02:20		
					1.2	↓
					17.4	↓

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: <b>Eric Schmieder</b>	DATE Signed (MM/DD/YYYY): <b>04/30/26</b>
SIGNATURE of SAMPLER: <b>[Signature]</b>	



**GOLDER**

**MEMORANDUM**

**DATE** July 1, 2020

**Project No.** 153140602

**TO** Project File  
Golder Associates

**CC** Amanda Derhake, Jeff Ingram

**FROM** Annie Muehlfarth

**EMAIL** [AMuehlfarth@golder.com](mailto:AMuehlfarth@golder.com)

**DATA VALIDATION SUMMARY, SIOUX ENERGY CENTER – SCPA-CA – CORRECTIVE ACTION  
SAMPLING - DATA PACKAGE 60335364**

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 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 for detects, UJ for non-detects).
- When a compound was analyzed outside of hold time, sample results were qualified as estimates (J for detects, UJ for non-detects).
- 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 Associates Inc.  
 Project Name: Ameren - SEC - SCPA-CA  
 Reviewer: A. Muehlfarth

Project Manager: J. Ingram  
 Project Number: 153140602  
 Validation Date: 05/27/2020

Laboratory: Pace Analytical

SDG #: 60335364

Analytical Method (type and no.): EPA 200.7/200.8 (Total Metals); EPA 7470 (Mercury); SM2320B (Alkalinity); SM2540C (TDS); SM3500-Fe B#4 (Ferric, Ferrous Iron); SM4500-S-2 D (Total Sulfide); EPA 300.0 (Anions); EPA 903.1/904.0 (Radium 226/228)

Matrix:  Air  Soil/Sed.  Water  Waste

Sample Names S-AM-1S, S-AM-1D, S-CA-DUP-2, S-CA-FB-1, S-CA-FB-2, S-LMW-1S, S-LMW-2S, S-LMW-4S, S-LMW-5S, S-LMW-6S, S-CA-LMW-1S-MS-1, S-CA-DUP-1, S-BMW-1S, S-BMW-3S, S-CA-LMW-1-MSD-1, S-UG-3, S-TP-5D, S-TP-8D, S-TP-6S, S-TP-6D, S-PZ-1S, S-TP-2D, S-TP-4D, S-TP-3D, S-PZ-9D

**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>04/22 - 04/30/2020</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>				

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>Sample S-TP-8D was not recorded on COC.</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 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

<b>Blanks</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
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"/>	

<b>Laboratory Control Sample (LCS)</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
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"/>	

<b>Duplicates</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Were field duplicates collected (note original and duplicate sample names)?				S-CA-DUP-1 @ S-LMW-6S
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	S-CA-DUP-2 @ S-LMW-2S
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

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

<b>Matrix Spike/Matrix Spike Duplicate (MS/MSD)</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Was MS accuracy criteria met?	<input checked="" type="checkbox"/>	<input 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 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"/>	See Notes
c) Were MS/MSD precision criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

**Comments/Notes:**

Ferrous Iron was analyzed outside of hold time in all samples.

Chloride, and Sulfate were diluted in several samples, no qualification necessary.

MB: 2650432: Sodium (196 J), associated samples -64024, -64025, detections in samples > RL, no qualification necessary.

1913444: Radium-228 (0.810 ± 0.404), associated samples -64019 through -64023

**QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST**

**Comments/Notes:**

S-CA-FB-1 @ S-LMW-5S: Boron (17.8 J), TDS (10.0), Ferric Iron (0.0000000010 J), no qualification necessary, sample results > 10x blank results

S-CA-FB-2 @ S-LMW-4S: TDS (8.0), Ferric Iron (0.0000000010J)

DUP: S-CA-DUP-1: Iron, Sulfide, Radium-228 detected in DUP, non-detect in sample; RPD exceeds limit (20%) for Ferric Iron.

S-CA-DUP-2: Radium-228 detected in sample, non-detect in DUP; RPD exceeds limit (20%) for Ferric Iron.

Lab Duplicates: 2647467: RPD exceeds limit (10%) for Alkalinity, associated sample 60335395014 (unrelated sample).

MS/MSD: 2646779, 2646780: MS/MSD % Rec high for Boron, Calcium, associated with sample 60335363005 (unrelated sample).

2647680, 2647681: MSD % Rec low for Calcium, associated with sample 60335364019.

2650434, 2650435: MS % Rec high for Calcium, associated with sample 60336229003 (unrelated sample).

2642924: MS % Rec low for Sulfide, associated with sample 60335364006.

2658523: MS % Rec hight for Chloride, Sulfate, associated with sample 60335416011 (unrelated sample).

**QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST**

**Data Qualification:**

Sample Name	Constituent(s)	Result	Qualifier	Reason
S-AM-1S	Ferrous Iron	0.084	J	Analyzed outside of hold time
S-AM-1D	"	0.092	J	"
S-TP-5D	"	2.0	J	"
S-TP-8D	"	0.12	J	"
S-TP-6D	"	0.18	J	"
S-PZ-1S	"	0.51	J	"
S-TP-2D	"	0.43	J	"
S-TP-4D	"	0.082	J	"
S-TP-3D	"	0.088	J	"
S-PZ-9D	"	1.5	J	"
S-CA-DUP-2	"	0.035	UJ	Analyzed outside of hold time, non-detect
S-CA-FB-1	"	0.035	UJ	"
S-CA-FB-2	"	0.035	UJ	"
S-LMW-1S	"	0.035	UJ	"
S-LMW-2S	"	0.035	UJ	"
S-LMW-4S	"	0.035	UJ	"
S-LMW-5S	"	0.035	UJ	"
S-LMW-6S	"	0.035	UJ	"
S-CA-DUP-1	"	0.035	UJ	"
S-BMW-1S	"	0.035	UJ	"
S-BMW-3S	"	0.035	UJ	"
S-UG-3	"	0.035	UJ	"
S-TP-6S	"	0.035	UJ	"
S-PZ-1S	Radium-228	0.895 ± 0.461	J	Detected in MB
S-LMW-4S	Ferric Iron	0.050	U	Detected in FB
S-LMW-6S	Iron	26.8	UJ	Detected in DUP, non-detect in sample
"	Sulfide	0.039	UJ	"
"	Radium-228	0.409 ± 0.421	UJ	"
"	Ferric Iron	0.025	J	DUP RPD exceeds limit
S-CA-DUP-1	Iron	33.5	J	Detected in DUP, non-detect in sample
"	Sulfide	0.051	J	"
"	Radium-228	0.977 ± 0.503 ± 0.503	J	"
"	Ferric Iron	0.033	J	DUP RPD exceeds limit
S-LMW-2S	Radium-228	1.34 ± 0.577	J	Detected in sample, non-detect in DUP

**QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST**

**Data Qualification:**

Sample Name	Constituent(s)	Result	Qualifier	Reason
S-LMW-2S	Ferric Iron	0.026	J	DUP RPD exceeds limit
S-CA-DUP-2	Radium-228	-0.0814 ± 0.407	UJ	Detected in sample, non-detect in DUP
"	Ferric Iron	0.019	J	DUP RPD exceeds limit
S-TP-6S	Calcium	137000	J	MS/MSD % Rec low
S-LMW-1S	Sulfide	0.039	UJ	"

Signature: \_\_\_\_\_ *Ann Mulholland* \_\_\_\_\_ Date: 05/27/2020

June 10, 2020

Jeffrey Ingram  
Golder Associates  
13515 Barrett Parkway Drive  
Suite 260  
Ballwin, MO 63021

RE: Project: AMEREN SIOUX ENERGY CTR SCPA  
Pace Project No.: 60335363

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory between April 24, 2020 and May 19, 2020. 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



## 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 SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

---

### **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 #: 9526

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 #: 200030

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

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

## SAMPLE SUMMARY

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60335363001	S-BMW-3D	Water	04/22/20 12:50	04/24/20 02:40
60335363002	S-BMW-1D	Water	04/22/20 14:35	04/24/20 02:40
60335363003	S-UMW-1D	Water	04/28/20 10:05	04/29/20 03:12
60335363004	S-UMW-2D	Water	04/28/20 14:10	04/29/20 03:12
60335363005	S-UMW-3D	Water	04/28/20 12:50	04/29/20 03:12
60335363006	S-UMW-4D	Water	04/28/20 11:55	04/29/20 03:12
60335363007	S-UMW-DUP-1	Water	04/28/20 08:00	04/29/20 03:12
60335363008	S-UMW-FB-1	Water	04/28/20 10:25	04/29/20 03:12
60335363009	S-UMW-3D-MS-1	Water	04/28/20 10:25	04/29/20 03:12
60335363010	S-UMW-3D-MSD-1	Water	04/28/20 12:50	04/29/20 03:12
60335363011	S-UMW-5D	Water	04/29/20 13:55	05/01/20 02:30
60335363012	S-UMW-6D	Water	05/18/20 10:33	05/19/20 02:25

## REPORT OF LABORATORY ANALYSIS

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

### SAMPLE ANALYTE COUNT

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
60335363001	S-BMW-3D	EPA 200.7	JLH	13	PASI-K		
		EPA 200.8	JGP	6	PASI-K		
		EPA 7470	TDS	1	PASI-K		
		EPA 903.1	MK1	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		
		SM 2320B	MGS	1	PASI-K		
		SM 2540C	CNB	1	PASI-K		
		SM 3500-Fe B#4	LDB	1	PASI-K		
		SM 3500-Fe B#4	CNB	1	PASI-K		
		SM 4500-S-2 D	CNB	1	PASI-K		
		EPA 300.0	LDB, MJK	3	PASI-K		
		60335363002	S-BMW-1D	EPA 200.7	JLH	13	PASI-K
				EPA 200.8	JGP	6	PASI-K
EPA 7470	TDS			1	PASI-K		
EPA 903.1	MK1			1	PASI-PA		
EPA 904.0	VAL			1	PASI-PA		
SM 2320B	MGS			1	PASI-K		
SM 2540C	CNB			1	PASI-K		
SM 3500-Fe B#4	LDB			1	PASI-K		
SM 3500-Fe B#4	CNB			1	PASI-K		
SM 4500-S-2 D	CNB			1	PASI-K		
EPA 300.0	LDB, MJK			3	PASI-K		
60335363003	S-UMW-1D			EPA 200.7	JLH	13	PASI-K
				EPA 200.8	JGP	6	PASI-K
		EPA 7470	TDS	1	PASI-K		
		EPA 903.1	MK1	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		
		SM 2320B	MGS	1	PASI-K		
		SM 2540C	CNB	1	PASI-K		
		SM 3500-Fe B#4	LDB	1	PASI-K		
		SM 3500-Fe B#4	CNB	1	PASI-K		
		SM 4500-S-2 D	CNB	1	PASI-K		
		EPA 300.0	LDB, MJK	3	PASI-K		
		60335363004	S-UMW-2D	EPA 200.7	JLH	13	PASI-K
				EPA 200.8	JGP	6	PASI-K
EPA 7470	TDS			1	PASI-K		
EPA 903.1	MK1			1	PASI-PA		
EPA 300.0	LDB, MJK			3	PASI-K		
EPA 200.7	JLH			13	PASI-K		
EPA 200.8	JGP			6	PASI-K		

### REPORT OF LABORATORY ANALYSIS

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

### SAMPLE ANALYTE COUNT

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60335363005	S-UMW-3D	EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	CNB	1	PASI-K
		SM 4500-S-2 D	CNB	1	PASI-K
		EPA 300.0	LDB, MJK	3	PASI-K
		EPA 200.7	JLH	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	TDS	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		60335363006	S-UMW-4D	SM 3500-Fe B#4	LDB
SM 3500-Fe B#4	CNB			1	PASI-K
SM 4500-S-2 D	CNB			1	PASI-K
EPA 300.0	LDB, MJK			3	PASI-K
EPA 200.7	JLH			13	PASI-K
EPA 200.8	JGP			6	PASI-K
EPA 7470	TDS			1	PASI-K
EPA 903.1	MK1			1	PASI-PA
EPA 904.0	VAL			1	PASI-PA
SM 2320B	MGS			1	PASI-K
SM 2540C	CNB			1	PASI-K
SM 3500-Fe B#4	LDB			1	PASI-K
SM 3500-Fe B#4	CNB			1	PASI-K
SM 4500-S-2 D	CNB			1	PASI-K
60335363007	S-UMW-DUP-1			EPA 300.0	LDB, MJK
		EPA 200.7	JLH	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	TDS	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K

### REPORT OF LABORATORY ANALYSIS

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

### SAMPLE ANALYTE COUNT

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60335363008	S-UMW-FB-1	SM 3500-Fe B#4	CNB	1	PASI-K
		SM 4500-S-2 D	CNB	1	PASI-K
		EPA 300.0	LDB, MJK	3	PASI-K
		EPA 200.7	JLH	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	TDS	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	CNB	1	PASI-K
		SM 4500-S-2 D	CNB	1	PASI-K
60335363009	S-UMW-3D-MS-1	EPA 300.0	LDB	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60335363010	S-UMW-3D-MSD-1	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60335363011	S-UMW-5D	EPA 200.7	HKC	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	JLH	1	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		SM 3500-Fe B#4	LDB	1	PASI-K
		SM 3500-Fe B#4	CNB	1	PASI-K
		SM 4500-S-2 D	CNB	1	PASI-K
		EPA 300.0	JWR, LDB	3	PASI-K
		EPA 200.7	HKC	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
EPA 7470	JLH	1	PASI-K		
EPA 903.1	MK1	1	PASI-PA		
EPA 904.0	VAL	1	PASI-PA		
SM 2320B	LDB	1	PASI-K		
SM 2540C	CNB	1	PASI-K		
SM 3500-Fe B#4	LDB	1	PASI-K		

### REPORT OF LABORATORY ANALYSIS

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

**SAMPLE ANALYTE COUNT**

Project: AMEREN SIOUX ENERGY CTR SCPA  
Pace Project No.: 60335363

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 3500-Fe B#4	CNB	1	PASI-K
		SM 4500-S-2 D	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K

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

**REPORT OF LABORATORY ANALYSIS**

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY CTR SCPA

Project No.: 60335363

Sample: S-BMW-3D Lab ID: 60335363001 Collected: 04/22/20 12:50 Received: 04/24/20 02:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	659	ug/L	5.0	1.8	1	04/29/20 13:20	04/30/20 17:34	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	04/29/20 13:20	04/30/20 17:34	7440-41-7	
Boron	72.5J	ug/L	100	11.7	1	04/29/20 13:20	04/30/20 17:34	7440-42-8	B
Calcium	107000	ug/L	200	32.4	1	04/29/20 13:20	04/30/20 17:34	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	04/29/20 13:20	04/30/20 17:34	7440-48-4	
Iron	7070	ug/L	50.0	26.8	1	04/29/20 13:20	04/30/20 17:34	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	04/29/20 13:20	04/30/20 17:34	7439-92-1	
Lithium	22.3	ug/L	10.0	4.6	1	04/29/20 13:20	04/30/20 17:34	7439-93-2	
Magnesium	26800	ug/L	50.0	19.7	1	04/29/20 13:20	04/30/20 17:34	7439-95-4	
Manganese	527	ug/L	5.0	0.97	1	04/29/20 13:20	04/30/20 17:34	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	04/29/20 13:20	04/30/20 17:34	7439-98-7	
Potassium	3700	ug/L	500	189	1	04/29/20 13:20	04/30/20 17:34	7440-09-7	
Sodium	6170	ug/L	500	107	1	04/29/20 13:20	04/30/20 17:34	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/04/20 10:20	05/13/20 15:13	7440-36-0	
Arsenic	<0.086	ug/L	1.0	0.086	1	05/04/20 10:20	05/13/20 15:13	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	05/04/20 10:20	05/13/20 15:13	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/04/20 10:20	05/13/20 15:13	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/04/20 10:20	05/13/20 15:13	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/04/20 10:20	05/13/20 15:13	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.058	ug/L	0.20	0.058	1	05/11/20 12:10	05/12/20 10:25	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	350	mg/L	20.0	8.4	1		05/01/20 15:21		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	430	mg/L	10.0	10.0	1		04/28/20 14:15		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	7.0	mg/L	0.050		1		05/12/20 11:04	7439-89-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.11J	mg/L	0.20	0.035	1		04/25/20 10:57		H6

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

---

**Sample: S-BMW-3D**      **Lab ID: 60335363001**      Collected: 04/22/20 12:50      Received: 04/24/20 02:40      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<b>&lt;0.039</b>	mg/L	0.050	0.039	1		04/27/20 11:29	18496-25-8	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	<b>7.5</b>	mg/L	1.0	0.39	1		05/14/20 23:04	16887-00-6	
Fluoride	<b>0.31</b>	mg/L	0.20	0.075	1		05/14/20 23:04	16984-48-8	
Sulfate	<b>30.8</b>	mg/L	2.0	0.56	2		05/14/20 01:25	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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



### ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY CTR SCPA

Project No.: 60335363

Sample: S-BMW-1D Lab ID: 60335363002 Collected: 04/22/20 14:35 Received: 04/24/20 02:40 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	323	ug/L	5.0	1.8	1	04/29/20 13:20	04/30/20 17:36	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	04/29/20 13:20	04/30/20 17:36	7440-41-7	
Boron	195	ug/L	100	11.7	1	04/29/20 13:20	04/30/20 17:36	7440-42-8	
Calcium	132000	ug/L	200	32.4	1	04/29/20 13:20	04/30/20 17:36	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	04/29/20 13:20	04/30/20 17:36	7440-48-4	
Iron	9140	ug/L	50.0	26.8	1	04/29/20 13:20	04/30/20 17:36	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	04/29/20 13:20	04/30/20 17:36	7439-92-1	
Lithium	14.6	ug/L	10.0	4.6	1	04/29/20 13:20	04/30/20 17:36	7439-93-2	
Magnesium	30600	ug/L	50.0	19.7	1	04/29/20 13:20	04/30/20 17:36	7439-95-4	
Manganese	882	ug/L	5.0	0.97	1	04/29/20 13:20	04/30/20 17:36	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	04/29/20 13:20	04/30/20 17:36	7439-98-7	
Potassium	2760	ug/L	500	189	1	04/29/20 13:20	04/30/20 17:36	7440-09-7	
Sodium	6680	ug/L	500	107	1	04/29/20 13:20	04/30/20 17:36	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/04/20 10:20	05/13/20 15:14	7440-36-0	
Arsenic	0.20J	ug/L	1.0	0.086	1	05/04/20 10:20	05/13/20 15:14	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	05/04/20 10:20	05/13/20 15:14	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/04/20 10:20	05/13/20 15:14	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/04/20 10:20	05/13/20 15:14	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/04/20 10:20	05/13/20 15:14	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.058	ug/L	0.20	0.058	1	05/11/20 12:10	05/12/20 10:28	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	389	mg/L	20.0	8.4	1		05/01/20 15:33		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	524	mg/L	10.0	10.0	1		04/28/20 14:15		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	9.0	mg/L	0.050		1		05/12/20 11:05	7439-89-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.092J	mg/L	0.20	0.035	1		04/25/20 10:59		H6

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

---

**Sample: S-BMW-1D**      **Lab ID: 60335363002**      Collected: 04/22/20 14:35      Received: 04/24/20 02:40      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>&lt;0.039</b>	mg/L	0.050	0.039	1		04/27/20 11:30	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>6.0</b>	mg/L	1.0	0.39	1		05/14/20 23:19	16887-00-6	
Fluoride	<b>0.30</b>	mg/L	0.20	0.075	1		05/14/20 23:19	16984-48-8	
Sulfate	<b>50.7</b>	mg/L	5.0	1.4	5		05/14/20 01:58	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

Sample: S-UMW-1D Lab ID: 60335363003 Collected: 04/28/20 10:05 Received: 04/29/20 03:12 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	116	ug/L	5.0	1.8	1	05/04/20 10:20	05/05/20 10:58	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	05/04/20 10:20	05/05/20 10:58	7440-41-7	
Boron	1550	ug/L	100	11.7	1	05/04/20 10:20	05/05/20 10:58	7440-42-8	
Calcium	65100	ug/L	200	32.4	1	05/04/20 10:20	05/05/20 10:58	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	05/04/20 10:20	05/05/20 10:58	7440-48-4	
Iron	954	ug/L	50.0	26.8	1	05/04/20 10:20	05/05/20 10:58	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	05/04/20 10:20	05/05/20 10:58	7439-92-1	
Lithium	13.7	ug/L	10.0	4.6	1	05/04/20 10:20	05/05/20 10:58	7439-93-2	
Magnesium	17900	ug/L	50.0	19.7	1	05/04/20 10:20	05/05/20 10:58	7439-95-4	
Manganese	123	ug/L	5.0	0.97	1	05/04/20 10:20	05/05/20 10:58	7439-96-5	
Molybdenum	29.0	ug/L	20.0	1.7	1	05/04/20 10:20	05/05/20 10:58	7439-98-7	
Potassium	4360	ug/L	500	189	1	05/04/20 10:20	05/05/20 10:58	7440-09-7	
Sodium	15400	ug/L	500	107	1	05/04/20 10:20	05/05/20 10:58	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/04/20 10:20	05/13/20 15:16	7440-36-0	
Arsenic	1.2	ug/L	1.0	0.086	1	05/04/20 10:20	05/13/20 15:16	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	05/04/20 10:20	05/13/20 15:16	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/04/20 10:20	05/13/20 15:16	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/04/20 10:20	05/13/20 15:16	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/04/20 10:20	05/13/20 15:16	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.058	ug/L	0.20	0.058	1	05/13/20 15:32	05/14/20 11:30	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	187	mg/L	20.0	8.4	1		05/08/20 17:00		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	312	mg/L	5.0	5.0	1		05/01/20 11:45		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.95	mg/L	0.050		1		05/12/20 11:05	7439-89-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.035	mg/L	0.20	0.035	1		04/29/20 14:11		H6

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

---

**Sample: S-UMW-1D**      **Lab ID: 60335363003**      Collected: 04/28/20 10:05      Received: 04/29/20 03:12      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<b>&lt;0.039</b>	mg/L	0.050	0.039	1		04/30/20 11:35	18496-25-8	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	<b>17.7</b>	mg/L	1.0	0.39	1		05/13/20 15:24	16887-00-6	
Fluoride	<b>0.25</b>	mg/L	0.20	0.075	1		05/13/20 15:24	16984-48-8	
Sulfate	<b>57.1</b>	mg/L	10.0	2.8	10		05/14/20 18:02	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

Sample: S-UMW-2D Lab ID: 60335363004 Collected: 04/28/20 14:10 Received: 04/29/20 03:12 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	70.7	ug/L	5.0	1.8	1	05/04/20 10:20	05/05/20 11:01	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	05/04/20 10:20	05/05/20 11:01	7440-41-7	
Boron	15100	ug/L	100	11.7	1	05/04/20 10:20	05/05/20 11:01	7440-42-8	
Calcium	182000	ug/L	200	32.4	1	05/04/20 10:20	05/05/20 11:01	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	05/04/20 10:20	05/05/20 11:01	7440-48-4	
Iron	341	ug/L	50.0	26.8	1	05/04/20 10:20	05/05/20 11:01	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	05/04/20 10:20	05/05/20 11:01	7439-92-1	
Lithium	20.0	ug/L	10.0	4.6	1	05/04/20 10:20	05/05/20 11:01	7439-93-2	
Magnesium	5760	ug/L	50.0	19.7	1	05/04/20 10:20	05/05/20 11:01	7439-95-4	
Manganese	182	ug/L	5.0	0.97	1	05/04/20 10:20	05/05/20 11:01	7439-96-5	
Molybdenum	980	ug/L	20.0	1.7	1	05/04/20 10:20	05/05/20 11:01	7439-98-7	
Potassium	23700	ug/L	500	189	1	05/04/20 10:20	05/05/20 11:01	7440-09-7	
Sodium	50400	ug/L	500	107	1	05/04/20 10:20	05/05/20 11:01	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/04/20 10:20	05/13/20 15:18	7440-36-0	
Arsenic	2.8	ug/L	1.0	0.086	1	05/04/20 10:20	05/13/20 15:18	7440-38-2	
Cadmium	0.38J	ug/L	0.50	0.056	1	05/04/20 10:20	05/13/20 15:18	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/04/20 10:20	05/13/20 15:18	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/04/20 10:20	05/13/20 15:18	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/04/20 10:20	05/13/20 15:18	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.058	ug/L	0.20	0.058	1	05/13/20 15:32	05/14/20 11:36	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	187	mg/L	20.0	8.4	1		05/08/20 17:06		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	831	mg/L	10.0	10.0	1		05/01/20 11:46		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.34	mg/L	0.050		1		05/12/20 11:05	7439-89-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.035	mg/L	0.20	0.035	1		04/29/20 14:13		H6

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

---

**Sample: S-UMW-2D**      **Lab ID: 60335363004**      Collected: 04/28/20 14:10      Received: 04/29/20 03:12      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>&lt;0.039</b>	mg/L	0.050	0.039	1		04/30/20 11:36	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>19.1</b>	mg/L	2.0	0.78	2		05/14/20 16:59	16887-00-6	
Fluoride	<b>0.50</b>	mg/L	0.20	0.075	1		05/13/20 15:56	16984-48-8	
Sulfate	<b>385</b>	mg/L	50.0	13.9	50		05/14/20 17:47	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

Sample: S-UMW-3D Lab ID: 60335363005 Collected: 04/28/20 12:50 Received: 04/29/20 03:12 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	70.7	ug/L	5.0	1.8	1	05/04/20 10:20	05/05/20 11:27	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	05/04/20 10:20	05/05/20 11:27	7440-41-7	
Boron	30400	ug/L	100	11.7	1	05/04/20 10:20	05/05/20 11:27	7440-42-8	M1
Calcium	254000	ug/L	200	32.4	1	05/04/20 10:20	05/05/20 11:27	7440-70-2	M1
Cobalt	<1.5	ug/L	5.0	1.5	1	05/04/20 10:20	05/05/20 11:27	7440-48-4	
Iron	1170	ug/L	50.0	26.8	1	05/04/20 10:20	05/05/20 11:27	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	05/04/20 10:20	05/05/20 11:27	7439-92-1	
Lithium	22.5	ug/L	10.0	4.6	1	05/04/20 10:20	05/05/20 11:27	7439-93-2	
Magnesium	10000	ug/L	50.0	19.7	1	05/04/20 10:20	05/05/20 11:27	7439-95-4	
Manganese	707	ug/L	5.0	0.97	1	05/04/20 10:20	05/05/20 11:27	7439-96-5	
Molybdenum	3290	ug/L	20.0	1.7	1	05/04/20 10:20	05/05/20 11:27	7439-98-7	
Potassium	18000	ug/L	500	189	1	05/04/20 10:20	05/05/20 11:27	7440-09-7	
Sodium	88600	ug/L	500	107	1	05/04/20 10:20	05/05/20 11:27	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/04/20 10:20	05/13/20 15:20	7440-36-0	
Arsenic	0.32J	ug/L	1.0	0.086	1	05/04/20 10:20	05/13/20 15:20	7440-38-2	
Cadmium	1.3	ug/L	0.50	0.056	1	05/04/20 10:20	05/13/20 15:20	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/04/20 10:20	05/13/20 15:20	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/04/20 10:20	05/13/20 15:20	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/04/20 10:20	05/13/20 15:20	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.058	ug/L	0.20	0.058	1	05/13/20 15:32	05/14/20 11:39	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	77.2	mg/L	20.0	8.4	1		05/08/20 17:11		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1370	mg/L	13.3	13.3	1		05/01/20 11:46		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	1.1	mg/L	0.050		1		05/12/20 11:05	7439-89-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.035	mg/L	0.20	0.035	1		04/29/20 14:12		H6

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

**Sample: S-UMW-3D**      **Lab ID: 60335363005**      Collected: 04/28/20 12:50      Received: 04/29/20 03:12      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>&lt;0.039</b>	mg/L	0.050	0.039	1		04/30/20 11:36	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>12.0</b>	mg/L	1.0	0.39	1		05/13/20 16:35	16887-00-6	
Fluoride	<b>0.49</b>	mg/L	0.20	0.075	1		05/13/20 16:35	16984-48-8	
Sulfate	<b>832</b>	mg/L	50.0	13.9	50		05/14/20 18:18	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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



### ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

Sample: S-UMW-4D Lab ID: 60335363006 Collected: 04/28/20 11:55 Received: 04/29/20 03:12 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	79.8	ug/L	5.0	1.8	1	05/04/20 10:20	05/05/20 11:37	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	05/04/20 10:20	05/05/20 11:37	7440-41-7	
Boron	30100	ug/L	100	11.7	1	05/04/20 10:20	05/05/20 11:37	7440-42-8	
Calcium	228000	ug/L	200	32.4	1	05/04/20 10:20	05/05/20 11:37	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	05/04/20 10:20	05/05/20 11:37	7440-48-4	
Iron	8500	ug/L	50.0	26.8	1	05/04/20 10:20	05/05/20 11:37	7439-89-6	
Lead	9.5J	ug/L	10.0	4.6	1	05/04/20 10:20	05/06/20 10:07	7439-92-1	
Lithium	30.2	ug/L	10.0	4.6	1	05/04/20 10:20	05/05/20 11:37	7439-93-2	
Magnesium	29500	ug/L	50.0	19.7	1	05/04/20 10:20	05/05/20 11:37	7439-95-4	
Manganese	1690	ug/L	5.0	0.97	1	05/04/20 10:20	05/05/20 11:37	7439-96-5	
Molybdenum	8860	ug/L	20.0	1.7	1	05/04/20 10:20	05/05/20 11:37	7439-98-7	
Potassium	16800	ug/L	500	189	1	05/04/20 10:20	05/05/20 11:37	7440-09-7	
Sodium	76300	ug/L	500	107	1	05/04/20 10:20	05/05/20 11:37	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/04/20 10:20	05/13/20 15:25	7440-36-0	
Arsenic	0.28J	ug/L	1.0	0.086	1	05/04/20 10:20	05/13/20 15:25	7440-38-2	
Cadmium	3.4	ug/L	0.50	0.056	1	05/04/20 10:20	05/13/20 15:25	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/04/20 10:20	05/13/20 15:25	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/04/20 10:20	05/13/20 15:25	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/04/20 10:20	05/13/20 15:25	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.058	ug/L	0.20	0.058	1	05/13/20 15:32	05/14/20 11:46	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	142	mg/L	20.0	8.4	1		05/08/20 17:19		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1230	mg/L	13.3	13.3	1		05/01/20 11:46		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	6.5	mg/L	0.050		1		05/12/20 11:05	7439-89-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	2.0	mg/L	0.20	0.035	1		04/29/20 14:11		H6

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

---

**Sample: S-UMW-4D**      **Lab ID: 60335363006**      Collected: 04/28/20 11:55      Received: 04/29/20 03:12      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<b>&lt;0.039</b>	mg/L	0.050	0.039	1		04/30/20 11:37	18496-25-8	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	<b>16.8</b>	mg/L	1.0	0.39	1		05/13/20 19:30	16887-00-6	
Fluoride	<b>0.31</b>	mg/L	0.20	0.075	1		05/13/20 19:30	16984-48-8	
Sulfate	<b>647</b>	mg/L	100	27.8	100		05/14/20 19:06	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

**Sample: S-UMW-DUP-1**      **Lab ID: 60335363007**      Collected: 04/28/20 08:00      Received: 04/29/20 03:12      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	70.3	ug/L	5.0	1.8	1	05/04/20 10:20	05/05/20 11:40	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	05/04/20 10:20	05/05/20 11:40	7440-41-7	
Boron	15300	ug/L	100	11.7	1	05/04/20 10:20	05/05/20 11:40	7440-42-8	
Calcium	182000	ug/L	200	32.4	1	05/04/20 10:20	05/05/20 11:40	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	05/04/20 10:20	05/05/20 11:40	7440-48-4	
Iron	347	ug/L	50.0	26.8	1	05/04/20 10:20	05/05/20 11:40	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	05/04/20 10:20	05/05/20 11:40	7439-92-1	
Lithium	19.1	ug/L	10.0	4.6	1	05/04/20 10:20	05/05/20 11:40	7439-93-2	
Magnesium	5700	ug/L	50.0	19.7	1	05/04/20 10:20	05/05/20 11:40	7439-95-4	
Manganese	184	ug/L	5.0	0.97	1	05/04/20 10:20	05/05/20 11:40	7439-96-5	
Molybdenum	998	ug/L	20.0	1.7	1	05/04/20 10:20	05/05/20 11:40	7439-98-7	
Potassium	23500	ug/L	500	189	1	05/04/20 10:20	05/05/20 11:40	7440-09-7	
Sodium	49900	ug/L	500	107	1	05/04/20 10:20	05/05/20 11:40	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/04/20 10:20	05/13/20 15:32	7440-36-0	
Arsenic	2.8	ug/L	1.0	0.086	1	05/04/20 10:20	05/13/20 15:32	7440-38-2	
Cadmium	0.38J	ug/L	0.50	0.056	1	05/04/20 10:20	05/13/20 15:32	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/04/20 10:20	05/13/20 15:32	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/04/20 10:20	05/13/20 15:32	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/04/20 10:20	05/13/20 15:32	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470    Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	0.059J	ug/L	0.20	0.058	1	05/13/20 15:32	05/14/20 11:48	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	184	mg/L	20.0	8.4	1		05/08/20 17:24		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	819	mg/L	10.0	10.0	1		05/01/20 11:46		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.35	mg/L	0.050		1		05/12/20 11:05	7439-89-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.035	mg/L	0.20	0.035	1		04/29/20 14:11		H6

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

---

**Sample: S-UMW-DUP-1**      **Lab ID: 60335363007**      Collected: 04/28/20 08:00      Received: 04/29/20 03:12      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<b>&lt;0.039</b>	mg/L	0.050	0.039	1		04/30/20 11:37	18496-25-8	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	<b>18.9</b>	mg/L	2.0	0.78	2		05/14/20 19:22	16887-00-6	
Fluoride	<b>0.49</b>	mg/L	0.20	0.075	1		05/13/20 20:01	16984-48-8	
Sulfate	<b>374</b>	mg/L	50.0	13.9	50		05/14/20 19:38	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

Sample: S-UMW-FB-1 Lab ID: 60335363008 Collected: 04/28/20 10:25 Received: 04/29/20 03:12 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
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	05/04/20 10:20	05/05/20 11:43	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	05/04/20 10:20	05/05/20 11:43	7440-41-7	
Boron	54.9J	ug/L	100	11.7	1	05/04/20 10:20	05/05/20 11:43	7440-42-8	
Calcium	35.0J	ug/L	200	32.4	1	05/04/20 10:20	05/05/20 11:43	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	05/04/20 10:20	05/05/20 11:43	7440-48-4	
Iron	<26.8	ug/L	50.0	26.8	1	05/04/20 10:20	05/05/20 11:43	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	05/04/20 10:20	05/05/20 11:43	7439-92-1	
Lithium	<4.6	ug/L	10.0	4.6	1	05/04/20 10:20	05/05/20 11:43	7439-93-2	
Magnesium	<19.7	ug/L	50.0	19.7	1	05/04/20 10:20	05/05/20 11:43	7439-95-4	
Manganese	<0.97	ug/L	5.0	0.97	1	05/04/20 10:20	05/05/20 11:43	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	05/04/20 10:20	05/05/20 11:43	7439-98-7	
Potassium	<189	ug/L	500	189	1	05/04/20 10:20	05/05/20 11:43	7440-09-7	
Sodium	<107	ug/L	500	107	1	05/04/20 10:20	05/05/20 11:43	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/04/20 10:20	05/13/20 15:30	7440-36-0	
Arsenic	<0.086	ug/L	1.0	0.086	1	05/04/20 10:20	05/13/20 15:30	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	05/04/20 10:20	05/13/20 15:30	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/04/20 10:20	05/13/20 15:30	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/04/20 10:20	05/13/20 15:30	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/04/20 10:20	05/13/20 15:30	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.058	ug/L	0.20	0.058	1	05/13/20 15:32	05/14/20 11:50	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<8.4	mg/L	20.0	8.4	1		05/08/20 17:27		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	8.0	mg/L	5.0	5.0	1		05/01/20 11:46		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.0000000 0010J	mg/L	0.050		1		05/12/20 11:05	7439-89-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.035	mg/L	0.20	0.035	1		04/29/20 14:11		H6

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

---

**Sample: S-UMW-FB-1**      **Lab ID: 60335363008**      Collected: 04/28/20 10:25      Received: 04/29/20 03:12      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<b>&lt;0.039</b>	mg/L	0.050	0.039	1		04/30/20 11:37	18496-25-8	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	<b>&lt;0.39</b>	mg/L	1.0	0.39	1		05/13/20 21:05	16887-00-6	
Fluoride	<b>&lt;0.075</b>	mg/L	0.20	0.075	1		05/13/20 21:05	16984-48-8	
Sulfate	<b>&lt;0.28</b>	mg/L	1.0	0.28	1		05/13/20 21:05	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY CTR SCPA

Sample Project No.: 60335363

Sample: S-UMW-5D Lab ID: 60335363011 Collected: 04/29/20 13:55 Received: 05/01/20 02:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	334	ug/L	5.0	1.8	1	05/07/20 11:15	05/08/20 13:58	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	05/07/20 11:15	05/08/20 13:58	7440-41-7	
Boron	14000	ug/L	100	11.7	1	05/07/20 11:15	05/08/20 13:58	7440-42-8	
Calcium	98900	ug/L	200	32.4	1	05/07/20 11:15	05/08/20 13:58	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	05/07/20 11:15	05/08/20 13:58	7440-48-4	
Iron	3340	ug/L	50.0	26.8	1	05/07/20 11:15	05/08/20 13:58	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	05/07/20 11:15	05/08/20 13:58	7439-92-1	
Lithium	31.7	ug/L	10.0	4.6	1	05/07/20 11:15	05/08/20 13:58	7439-93-2	
Magnesium	18000	ug/L	50.0	19.7	1	05/07/20 11:15	05/08/20 13:58	7439-95-4	
Manganese	288	ug/L	5.0	0.97	1	05/07/20 11:15	05/08/20 13:58	7439-96-5	
Molybdenum	2240	ug/L	20.0	1.7	1	05/07/20 11:15	05/08/20 13:58	7439-98-7	
Potassium	11200	ug/L	500	189	1	05/07/20 11:15	05/08/20 13:58	7440-09-7	
Sodium	37300	ug/L	500	107	1	05/07/20 11:15	05/08/20 13:58	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/07/20 09:50	05/13/20 16:10	7440-36-0	
Arsenic	0.39J	ug/L	1.0	0.086	1	05/07/20 09:50	05/13/20 16:10	7440-38-2	
Cadmium	0.84	ug/L	0.50	0.056	1	05/07/20 09:50	05/13/20 16:10	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/07/20 09:50	05/13/20 16:10	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/07/20 09:50	05/13/20 16:10	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/07/20 09:50	05/13/20 16:10	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.085	ug/L	0.20	0.085	1	05/14/20 14:45	05/15/20 15:16	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	242	mg/L	20.0	8.4	1		05/08/20 18:30		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	547	mg/L	10.0	10.0	1		05/04/20 15:20		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	3.2	mg/L	0.050		1		05/12/20 13:10	7439-89-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.10J	mg/L	0.20	0.035	1		05/04/20 10:44		H6

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

---

**Sample: S-UMW-5D**      **Lab ID: 60335363011**      Collected: 04/29/20 13:55      Received: 05/01/20 02:30      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	<b>&lt;0.039</b>	mg/L	0.050	0.039	1		05/04/20 11:35	18496-25-8	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	<b>27.9</b>	mg/L	2.0	0.78	2		05/19/20 22:40	16887-00-6	
Fluoride	<b>1.0</b>	mg/L	0.20	0.075	1		05/19/20 22:23	16984-48-8	
Sulfate	<b>145</b>	mg/L	10.0	2.8	10		05/20/20 16:38	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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



### ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

Sample: S-UMW-6D Lab ID: 60335363012 Collected: 05/18/20 10:33 Received: 05/19/20 02:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	127	ug/L	5.0	1.8	1	06/03/20 16:00	06/04/20 12:45	7440-39-3	
Beryllium	<0.49	ug/L	1.0	0.49	1	06/03/20 16:00	06/04/20 12:45	7440-41-7	
Boron	874	ug/L	100	11.7	1	06/03/20 16:00	06/04/20 12:45	7440-42-8	
Calcium	86100	ug/L	200	32.4	1	06/03/20 16:00	06/04/20 12:45	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	06/03/20 16:00	06/04/20 12:45	7440-48-4	
Iron	5110	ug/L	50.0	26.8	1	06/03/20 16:00	06/04/20 12:45	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	06/03/20 16:00	06/04/20 12:45	7439-92-1	
Lithium	19.2	ug/L	10.0	4.6	1	06/03/20 16:00	06/04/20 12:45	7439-93-2	
Magnesium	20100	ug/L	50.0	19.7	1	06/03/20 16:00	06/04/20 12:45	7439-95-4	
Manganese	624	ug/L	5.0	0.97	1	06/03/20 16:00	06/04/20 12:45	7439-96-5	
Molybdenum	82.4	ug/L	20.0	1.7	1	06/03/20 16:00	06/04/20 12:45	7439-98-7	
Potassium	4580	ug/L	500	189	1	06/03/20 16:00	06/04/20 12:45	7440-09-7	
Sodium	14300	ug/L	500	107	1	06/03/20 16:00	06/04/20 12:45	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.097	ug/L	1.0	0.097	1	05/20/20 08:20	05/21/20 12:10	7440-36-0	
Arsenic	0.46J	ug/L	1.0	0.086	1	05/20/20 08:20	05/21/20 12:10	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	05/20/20 08:20	05/21/20 12:10	7440-43-9	
Chromium	<0.22	ug/L	1.0	0.22	1	05/20/20 08:20	05/21/20 12:10	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	05/20/20 08:20	05/21/20 12:10	7782-49-2	
Thallium	<0.093	ug/L	1.0	0.093	1	05/20/20 08:20	05/21/20 12:10	7440-28-0	
<b>7470 Mercury</b>									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.058	ug/L	0.20	0.058	1	05/20/20 15:55	05/22/20 11:33	7439-97-6	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	246	mg/L	20.0	8.4	1		05/28/20 14:01		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	394	mg/L	5.0	5.0	1		05/21/20 10:59		
<b>Iron, Ferric (Calculation)</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	5.0	mg/L	0.050		1		06/09/20 16:33	7439-89-6	
<b>Iron, Ferrous</b>									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.072J	mg/L	0.20	0.035	1		05/21/20 13:26		H6

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

---

**Sample: S-UMW-6D**      **Lab ID: 60335363012**      Collected: 05/18/20 10:33      Received: 05/19/20 02:25      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>4500S2D Sulfide, Total</b>									
Analytical Method: SM 4500-S-2 D									
Pace Analytical Services - Kansas City									
Sulfide, Total	<b>&lt;0.039</b>	mg/L	0.050	0.039	1		05/21/20 15:36	18496-25-8	
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>15.5</b>	mg/L	1.0	0.39	1		06/02/20 21:32	16887-00-6	
Fluoride	<b>0.49</b>	mg/L	0.20	0.075	1		06/02/20 21:32	16984-48-8	
Sulfate	<b>71.7</b>	mg/L	5.0	1.4	5		06/02/20 21:49	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

QC Batch: 653803	Analysis Method: EPA 7470
QC Batch Method: EPA 7470	Analysis Description: 7470 Mercury
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60335363001, 60335363002

METHOD BLANK: 2652699 Matrix: Water

Associated Lab Samples: 60335363001, 60335363002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.058	0.20	0.058	05/12/20 09:26	

LABORATORY CONTROL SAMPLE: 2652700

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2652701 2652702

Parameter	Units	60334857001		2652702		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	ug/L	ND	5	5	4.4	4.5	87	90	75-125	2	20

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

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

QC Batch: 654466

Analysis Method: EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60335363003, 60335363004, 60335363005, 60335363006, 60335363007, 60335363008

METHOD BLANK: 2654779

Matrix: Water

Associated Lab Samples: 60335363003, 60335363004, 60335363005, 60335363006, 60335363007, 60335363008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.058	0.20	0.058	05/14/20 11:25	

LABORATORY CONTROL SAMPLE: 2654780

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.2	84	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2654781 2654782

Parameter	Units	60335363005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.058	5	5	4.2	4.6	84	90	75-125	8	20	

MATRIX SPIKE SAMPLE: 2654783

Parameter	Units	60335361003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	0.059J	5	5.3	105	75-125	

MATRIX SPIKE SAMPLE: 2654784

Parameter	Units	60336245003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	0.000066J mg/L	5	5.3	105	75-125	

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

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

QC Batch: 654729	Analysis Method: EPA 7470
QC Batch Method: EPA 7470	Analysis Description: 7470 Mercury
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60335363011

METHOD BLANK: 2655668 Matrix: Water

Associated Lab Samples: 60335363011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.085	0.20	0.085	05/15/20 15:04	

LABORATORY CONTROL SAMPLE: 2655669

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.6	93	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2655670 2655671

Parameter	Units	60336232002		2655671		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.						
Mercury	ug/L	<0.085	5	5	4.7	4.3	94	86	75-125	8	20

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

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

QC Batch: 655937

Analysis Method: EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60335363012

METHOD BLANK: 2660242

Matrix: Water

Associated Lab Samples: 60335363012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.058	0.20	0.058	05/22/20 11:07	

LABORATORY CONTROL SAMPLE: 2660243

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.9	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2660244 2660245

Parameter	Units	2660244		2660245		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60335363012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Mercury	ug/L	<0.058	5	5	4.8	4.8	96	97	75-125	1	20

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

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY CTR SCPA  
Pace Project No.: 60335363

QC Batch: 651904 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: 60335363001, 60335363002

METHOD BLANK: 2644803 Matrix: Water

Associated Lab Samples: 60335363001, 60335363002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	04/30/20 17:09	
Beryllium	ug/L	<0.49	1.0	0.49	04/30/20 17:09	
Boron	ug/L	12.8J	100	11.7	04/30/20 17:09	
Calcium	ug/L	<32.4	200	32.4	04/30/20 17:09	
Cobalt	ug/L	<1.5	5.0	1.5	04/30/20 17:09	
Iron	ug/L	<26.8	50.0	26.8	04/30/20 17:09	
Lead	ug/L	<4.6	10.0	4.6	04/30/20 17:09	
Lithium	ug/L	<4.6	10.0	4.6	04/30/20 17:09	
Magnesium	ug/L	<19.7	50.0	19.7	04/30/20 17:09	
Manganese	ug/L	<0.97	5.0	0.97	04/30/20 17:09	
Molybdenum	ug/L	<1.7	20.0	1.7	04/30/20 17:09	
Potassium	ug/L	<189	500	189	04/30/20 17:09	
Sodium	ug/L	<107	500	107	04/30/20 17:09	

LABORATORY CONTROL SAMPLE: 2644804

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	975	98	85-115	
Beryllium	ug/L	1000	986	99	85-115	
Boron	ug/L	1000	999	100	85-115	
Calcium	ug/L	10000	10100	101	85-115	
Cobalt	ug/L	1000	1020	102	85-115	
Iron	ug/L	10000	9930	99	85-115	
Lead	ug/L	1000	1050	105	85-115	
Lithium	ug/L	1000	971	97	85-115	
Magnesium	ug/L	10000	10500	105	85-115	
Manganese	ug/L	1000	1010	101	85-115	
Molybdenum	ug/L	1000	1000	100	85-115	
Potassium	ug/L	10000	9960	100	85-115	
Sodium	ug/L	10000	10200	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2644805 2644806

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Result	Conc.						
Barium	ug/L	68.3	1000	1000	1040	1060	97	99	70-130	1	20
Beryllium	ug/L	<0.49	1000	1000	986	1010	99	101	70-130	2	20

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

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

Parameter	Units	60334356027		2644805		2644806		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
Boron	ug/L	7780	1000	1000	8480	8340	69	56	70-130	2	20	M1		
Calcium	ug/L	95600	10000	10000	102000	103000	62	74	70-130	1	20	M1		
Cobalt	ug/L	<1.5	1000	1000	1010	1010	101	101	70-130	0	20			
Iron	ug/L	4560	10000	10000	14200	14600	97	100	70-130	3	20			
Lead	ug/L	<4.6	1000	1000	1020	1020	102	102	70-130	0	20			
Lithium	ug/L	39.0	1000	1000	1030	1040	99	100	70-130	1	20			
Magnesium	ug/L	15300	10000	10000	24400	24800	91	95	70-130	2	20			
Manganese	ug/L	266	1000	1000	1260	1280	100	102	70-130	2	20			
Molybdenum	ug/L	398	1000	1000	1400	1390	100	99	70-130	1	20			
Potassium	ug/L	8110	10000	10000	18000	18200	98	101	70-130	2	20			
Sodium	ug/L	117000	10000	10000	124000	123000	68	64	70-130	0	20	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

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



**QUALITY CONTROL DATA**

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

QC Batch:	652406	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: 60335363003, 60335363004, 60335363005, 60335363006, 60335363007, 60335363008

METHOD BLANK:	2646777	Matrix:	Water
---------------	---------	---------	-------

Associated Lab Samples: 60335363003, 60335363004, 60335363005, 60335363006, 60335363007, 60335363008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	05/05/20 10:55	
Beryllium	ug/L	<0.49	1.0	0.49	05/05/20 10:55	
Boron	ug/L	<11.7	100	11.7	05/05/20 10:55	
Calcium	ug/L	<32.4	200	32.4	05/05/20 10:55	
Cobalt	ug/L	<1.5	5.0	1.5	05/05/20 10:55	
Iron	ug/L	<26.8	50.0	26.8	05/05/20 10:55	
Lead	ug/L	<4.6	10.0	4.6	05/05/20 10:55	
Lithium	ug/L	<4.6	10.0	4.6	05/05/20 10:55	
Magnesium	ug/L	<19.7	50.0	19.7	05/05/20 10:55	
Manganese	ug/L	<0.97	5.0	0.97	05/05/20 10:55	
Molybdenum	ug/L	<1.7	20.0	1.7	05/05/20 10:55	
Potassium	ug/L	<189	500	189	05/05/20 10:55	
Sodium	ug/L	<107	500	107	05/05/20 10:55	

LABORATORY CONTROL SAMPLE: 2646778

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	997	100	85-115	
Beryllium	ug/L	1000	1000	100	85-115	
Boron	ug/L	1000	956	96	85-115	
Calcium	ug/L	10000	10200	102	85-115	
Cobalt	ug/L	1000	1020	102	85-115	
Iron	ug/L	10000	10100	101	85-115	
Lead	ug/L	1000	1040	104	85-115	
Lithium	ug/L	1000	1020	102	85-115	
Magnesium	ug/L	10000	9940	99	85-115	
Manganese	ug/L	1000	975	97	85-115	
Molybdenum	ug/L	1000	1000	100	85-115	
Potassium	ug/L	10000	9900	99	85-115	
Sodium	ug/L	10000	10300	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		2646779		2646780									
Parameter	Units	60335363005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Barium	ug/L	70.7	1000	1000	1060	1050	99	98	70-130	1	20		
Beryllium	ug/L	<0.49	1000	1000	999	997	100	100	70-130	0	20		

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**

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

**QUALITY CONTROL DATA**

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2646779												2646780	
Parameter	Units	60335363005		MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual	
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD		
Boron	ug/L	30400	1000	1000	32300	32200	187	179	70-130	0	20	M1	
Calcium	ug/L	254000	10000	10000	268000	267000	143	132	70-130	0	20	M1	
Cobalt	ug/L	<1.5	1000	1000	994	989	99	99	70-130	1	20		
Iron	ug/L	1170	10000	10000	11200	11100	100	100	70-130	0	20		
Lead	ug/L	<4.6	1000	1000	984	979	98	98	70-130	1	20		
Lithium	ug/L	22.5	1000	1000	997	987	97	96	70-130	1	20		
Magnesium	ug/L	10000	10000	10000	19600	19500	96	95	70-130	1	20		
Manganese	ug/L	707	1000	1000	1710	1710	101	100	70-130	0	20		
Molybdenum	ug/L	3290	1000	1000	4380	4370	109	108	70-130	0	20		
Potassium	ug/L	18000	10000	10000	28200	28000	101	100	70-130	0	20		
Sodium	ug/L	88600	10000	10000	99100	98800	105	101	70-130	0	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2646781												2646782	
Parameter	Units	60335361003		MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual	
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD		
Barium	ug/L	292	1000	1000	1270	1270	98	97	70-130	0	20		
Beryllium	ug/L	<0.49	1000	1000	1010	1010	101	101	70-130	0	20		
Boron	ug/L	111	1000	1000	1090	1100	98	99	70-130	1	20		
Calcium	ug/L	142000	10000	10000	151000	150000	88	71	70-130	1	20		
Cobalt	ug/L	<1.5	1000	1000	978	982	98	98	70-130	0	20		
Iron	ug/L	865	10000	10000	10800	10800	100	100	70-130	0	20		
Lead	ug/L	<4.6	1000	1000	996	992	99	99	70-130	0	20		
Lithium	ug/L	43.6	1000	1000	1040	1030	99	99	70-130	0	20		
Magnesium	ug/L	38600	10000	10000	47600	47200	90	87	70-130	1	20		
Manganese	ug/L	403	1000	1000	1370	1380	96	97	70-130	1	20		
Molybdenum	ug/L	<1.7	1000	1000	1000	1010	100	101	70-130	1	20		
Potassium	ug/L	7390	10000	10000	17300	17100	99	97	70-130	1	20		
Sodium	ug/L	11900	10000	10000	21700	21500	98	96	70-130	1	20		

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**

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY CTR SCPA  
Pace Project No.: 60335363

QC Batch: 653354	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: 60335363011

METHOD BLANK: 2650432 Matrix: Water

Associated Lab Samples: 60335363011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	05/11/20 12:10	
Beryllium	ug/L	<0.49	1.0	0.49	05/11/20 12:10	
Boron	ug/L	<11.7	100	11.7	05/08/20 13:49	
Calcium	ug/L	<32.4	200	32.4	05/11/20 12:10	
Cobalt	ug/L	<1.5	5.0	1.5	05/08/20 13:49	
Iron	ug/L	<26.8	50.0	26.8	05/11/20 12:10	
Lead	ug/L	<4.6	10.0	4.6	05/08/20 13:49	
Lithium	ug/L	<4.6	10.0	4.6	05/11/20 12:10	
Magnesium	ug/L	<19.7	50.0	19.7	05/08/20 13:49	
Manganese	ug/L	<0.97	5.0	0.97	05/08/20 13:49	
Molybdenum	ug/L	<1.7	20.0	1.7	05/08/20 13:49	
Potassium	ug/L	<189	500	189	05/11/20 12:10	
Sodium	ug/L	196J	500	107	05/11/20 12:10	

LABORATORY CONTROL SAMPLE: 2650433

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	978	98	85-115	
Beryllium	ug/L	1000	973	97	85-115	
Boron	ug/L	1000	931	93	85-115	
Calcium	ug/L	10000	9900	99	85-115	
Cobalt	ug/L	1000	1040	104	85-115	
Iron	ug/L	10000	9950	99	85-115	
Lead	ug/L	1000	1030	103	85-115	
Lithium	ug/L	1000	952	95	85-115	
Magnesium	ug/L	10000	9430	94	85-115	
Manganese	ug/L	1000	934	93	85-115	
Molybdenum	ug/L	1000	1010	101	85-115	
Potassium	ug/L	10000	9880	99	85-115	
Sodium	ug/L	10000	9690	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2650434 2650435

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60336229003	Result	Spike Conc.	Spike Conc.								
Barium	ug/L	124	1000	1000	1130	1140	101	101	70-130	1	20		
Beryllium	ug/L	<0.49	1000	1000	1010	1020	101	102	70-130	0	20		

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

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

**QUALITY CONTROL DATA**

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2650434												2650435	
Parameter	Units	60336229003 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Boron	ug/L	9690	1000	1000	10700	10600	99	92	70-130	1	20		
Calcium	ug/L	193000	10000	10000	207000	205000	143	119	70-130	1	20	M1	
Cobalt	ug/L	<1.5	1000	1000	1030	1020	103	102	70-130	0	20		
Iron	ug/L	10600	10000	10000	21100	21000	105	104	70-130	0	20		
Lead	ug/L	<4.6	1000	1000	1010	1000	101	100	70-130	1	20		
Lithium	ug/L	29.9	1000	1000	1030	1040	100	101	70-130	1	20		
Magnesium	ug/L	39400	10000	10000	50400	49000	111	97	70-130	3	20		
Manganese	ug/L	1920	1000	1000	2930	2890	101	97	70-130	1	20		
Molybdenum	ug/L	219	1000	1000	1270	1260	105	104	70-130	1	20		
Potassium	ug/L	6830	10000	10000	17400	17500	106	107	70-130	1	20		
Sodium	ug/L	34600	10000	10000	45400	44800	107	102	70-130	1	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2650436												2650437	
Parameter	Units	60336232002 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Barium	ug/L	211	1000	1000	1210	1220	100	101	70-130	1	20		
Beryllium	ug/L	<0.49	1000	1000	1000	1010	100	101	70-130	1	20		
Boron	ug/L	8120	1000	1000	8980	9130	86	101	70-130	2	20		
Calcium	ug/L	228000	10000	10000	235000	240000	79	121	70-130	2	20		
Cobalt	ug/L	<1.5	1000	1000	1020	1020	102	102	70-130	0	20		
Iron	ug/L	15700	10000	10000	25700	26000	100	103	70-130	1	20		
Lead	ug/L	<4.6	1000	1000	1010	1020	101	101	70-130	1	20		
Lithium	ug/L	43.9	1000	1000	1050	1060	101	102	70-130	0	20		
Magnesium	ug/L	66000	10000	10000	76500	78200	106	122	70-130	2	20		
Manganese	ug/L	1160	1000	1000	2150	2180	98	102	70-130	1	20		
Molybdenum	ug/L	208	1000	1000	1250	1260	104	106	70-130	1	20		
Potassium	ug/L	7770	10000	10000	18100	18300	104	106	70-130	1	20		
Sodium	ug/L	39700	10000	10000	49300	50200	96	105	70-130	2	20		

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**

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

**QUALITY CONTROL DATA**

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

QC Batch: 658199

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: 60335363012

METHOD BLANK: 2668860

Matrix: Water

Associated Lab Samples: 60335363012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	06/04/20 12:40	
Beryllium	ug/L	<0.49	1.0	0.49	06/04/20 12:40	
Boron	ug/L	<11.7	100	11.7	06/04/20 12:40	
Calcium	ug/L	34.3J	200	32.4	06/04/20 12:40	
Cobalt	ug/L	<1.5	5.0	1.5	06/04/20 12:40	
Iron	ug/L	<26.8	50.0	26.8	06/04/20 12:40	
Lead	ug/L	<4.6	10.0	4.6	06/04/20 12:40	
Lithium	ug/L	<4.6	10.0	4.6	06/04/20 12:40	
Magnesium	ug/L	<19.7	50.0	19.7	06/04/20 12:40	
Manganese	ug/L	<0.97	5.0	0.97	06/04/20 12:40	
Molybdenum	ug/L	<1.7	20.0	1.7	06/04/20 12:40	
Potassium	ug/L	<189	500	189	06/04/20 12:40	
Sodium	ug/L	275J	500	107	06/04/20 12:40	

LABORATORY CONTROL SAMPLE: 2668861

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1020	102	85-115	
Beryllium	ug/L	1000	1030	103	85-115	
Boron	ug/L	1000	1010	101	85-115	
Calcium	ug/L	10000	10400	104	85-115	
Cobalt	ug/L	1000	1050	105	85-115	
Iron	ug/L	10000	10300	103	85-115	
Lead	ug/L	1000	1070	107	85-115	
Lithium	ug/L	1000	1040	104	85-115	
Magnesium	ug/L	10000	10200	102	85-115	
Manganese	ug/L	1000	1020	102	85-115	
Molybdenum	ug/L	1000	1040	104	85-115	
Potassium	ug/L	10000	10100	101	85-115	
Sodium	ug/L	10000	10600	106	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2668862 2668863

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60337632001	Result	Conc.	Conc.								
Barium	ug/L	605	1000	1000	1620	1580	101	97	70-130	3	20		
Beryllium	ug/L	<0.49	1000	1000	1040	1020	104	102	70-130	3	20		

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**

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

**QUALITY CONTROL DATA**

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2668862 2668863												
Parameter	Units	60337632001		MS	MSD	MS		MSD		% Rec Limits	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec			
Boron	ug/L	393	1000	1000	1420	1380	103	98	70-130	3	20	
Calcium	ug/L	292000	10000	10000	301000	292000	85	1	70-130	3	20	M1
Cobalt	ug/L	2.2J	1000	1000	1020	990	102	99	70-130	3	20	
Iron	ug/L	47800	10000	10000	57700	56000	99	82	70-130	3	20	
Lead	ug/L	4.7J	1000	1000	1020	990	102	98	70-130	3	20	
Lithium	ug/L	20.7	1000	1000	1050	1020	103	100	70-130	3	20	
Magnesium	ug/L	65200	10000	10000	75000	72300	98	70	70-130	4	20	
Manganese	ug/L	4970	1000	1000	5880	5700	91	74	70-130	3	20	
Molybdenum	ug/L	1.9J	1000	1000	1050	1010	105	101	70-130	3	20	
Potassium	ug/L	5900	10000	10000	16300	15800	104	99	70-130	3	20	
Sodium	ug/L	31700	10000	10000	41700	40600	100	89	70-130	3	20	

MATRIX SPIKE SAMPLE: 2668864								
Parameter	Units	60337632011		Spike Conc.	MS	MS	% Rec Limits	Qualifiers
		Result	Conc.		Result	% Rec		
Barium	ug/L	134	1000	1000	1160	102	70-130	
Beryllium	ug/L	<0.49	1000	1000	1040	104	70-130	
Boron	ug/L	322	1000	1000	1340	101	70-130	
Calcium	ug/L	62500	10000	10000	74200	117	70-130	
Cobalt	ug/L	<1.5	1000	1000	1030	103	70-130	
Iron	ug/L	3470	10000	10000	13800	103	70-130	
Lead	ug/L	<4.6	1000	1000	1040	104	70-130	
Lithium	ug/L	8.6J	1000	1000	1030	102	70-130	
Magnesium	ug/L	11100	10000	10000	21100	100	70-130	
Manganese	ug/L	1180	1000	1000	2200	102	70-130	
Molybdenum	ug/L	7.6J	1000	1000	1040	103	70-130	
Potassium	ug/L	3960	10000	10000	14100	102	70-130	
Sodium	ug/L	12100	10000	10000	22500	104	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**

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

**QUALITY CONTROL DATA**

Project: AMEREN SIOUX ENERGY CTR SCPA  
Pace Project No.: 60335363

QC Batch: 652407 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: 60335363001, 60335363002, 60335363003, 60335363004, 60335363005, 60335363006, 60335363007, 60335363008

METHOD BLANK: 2646790 Matrix: Water  
Associated Lab Samples: 60335363001, 60335363002, 60335363003, 60335363004, 60335363005, 60335363006, 60335363007, 60335363008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.097	1.0	0.097	05/13/20 15:09	
Arsenic	ug/L	<0.086	1.0	0.086	05/13/20 15:09	
Cadmium	ug/L	<0.056	0.50	0.056	05/13/20 15:09	
Chromium	ug/L	<0.22	1.0	0.22	05/13/20 15:09	
Selenium	ug/L	<0.18	1.0	0.18	05/13/20 15:09	
Thallium	ug/L	<0.093	1.0	0.093	05/13/20 15:09	

LABORATORY CONTROL SAMPLE: 2646791

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	41.7	104	85-115	
Arsenic	ug/L	40	35.8	90	85-115	
Cadmium	ug/L	40	36.3	91	85-115	
Chromium	ug/L	40	40.3	101	85-115	
Selenium	ug/L	40	36.7	92	85-115	
Thallium	ug/L	40	39.5	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2646792 2646793

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60335363005 Result	Spike Conc.	Spike Conc.	Conc.								
Antimony	ug/L	<0.097	40	40	40.9	41.4	102	104	70-130	1	20		
Arsenic	ug/L	0.32J	40	40	36.2	36.3	90	90	70-130	0	20		
Cadmium	ug/L	1.3	40	40	35.3	35.5	85	86	70-130	1	20		
Chromium	ug/L	<0.22	40	40	37.8	37.8	94	94	70-130	0	20		
Selenium	ug/L	<0.18	40	40	33.5	33.6	83	84	70-130	0	20		
Thallium	ug/L	<0.093	40	40	36.0	36.5	90	91	70-130	1	20		

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**

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY CTR SCPA  
Pace Project No.: 60335363

QC Batch: 653336 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: 60335363011

METHOD BLANK: 2650324 Matrix: Water  
Associated Lab Samples: 60335363011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.097	1.0	0.097	05/13/20 15:37	
Arsenic	ug/L	<0.086	1.0	0.086	05/13/20 15:37	
Cadmium	ug/L	<0.056	0.50	0.056	05/13/20 15:37	
Chromium	ug/L	<0.22	1.0	0.22	05/13/20 15:37	
Selenium	ug/L	<0.18	1.0	0.18	05/13/20 15:37	
Thallium	ug/L	<0.093	1.0	0.093	05/13/20 15:37	

LABORATORY CONTROL SAMPLE: 2650325

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	40.6	101	85-115	
Arsenic	ug/L	40	34.6	87	85-115	
Cadmium	ug/L	40	35.8	90	85-115	
Chromium	ug/L	40	39.3	98	85-115	
Selenium	ug/L	40	34.4	86	85-115	
Thallium	ug/L	40	39.5	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2650326 2650327

Parameter	Units	60335361003		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Antimony	ug/L	<0.097	40	40	40.5	39.2	101	98	70-130	3	20		
Arsenic	ug/L	2.3	40	40	36.5	35.3	86	83	70-130	3	20		
Cadmium	ug/L	<0.056	40	40	34.2	33.3	85	83	70-130	3	20		
Chromium	ug/L	<0.22	40	40	38.6	36.8	96	92	70-130	5	20		
Selenium	ug/L	0.22J	40	40	32.3	31.3	80	78	70-130	3	20		
Thallium	ug/L	<0.093	40	40	36.7	35.9	92	90	70-130	2	20		

MATRIX SPIKE SAMPLE: 2650328

Parameter	Units	60335364020 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	0.86J	40	41.5	102	70-130	
Arsenic	ug/L	0.14J	40	33.7	84	70-130	
Cadmium	ug/L	<0.056	40	34.8	87	70-130	
Chromium	ug/L	0.33J	40	38.4	95	70-130	
Selenium	ug/L	<0.18	40	32.1	80	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

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



### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

MATRIX SPIKE SAMPLE:		2650328					
Parameter	Units	60335364020 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Thallium	ug/L	<0.093	40	37.4	93	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

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

QC Batch: 655587	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: 60335363012

METHOD BLANK: 2659154 Matrix: Water

Associated Lab Samples: 60335363012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.097	1.0	0.097	05/21/20 11:38	
Arsenic	ug/L	<0.086	1.0	0.086	05/21/20 11:38	
Cadmium	ug/L	<0.056	0.50	0.056	05/21/20 11:38	
Chromium	ug/L	<0.22	1.0	0.22	05/21/20 11:38	
Selenium	ug/L	<0.18	1.0	0.18	05/21/20 11:38	
Thallium	ug/L	<0.093	1.0	0.093	05/21/20 11:38	

LABORATORY CONTROL SAMPLE: 2659155

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	39.9	100	85-115	
Arsenic	ug/L	40	38.3	96	85-115	
Cadmium	ug/L	40	38.2	96	85-115	
Chromium	ug/L	40	38.2	96	85-115	
Selenium	ug/L	40	37.7	94	85-115	
Thallium	ug/L	40	36.0	90	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2659156 2659157

Parameter	Units	60336850003		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	MS Result	MSD Result	% Rec	% Rec					
Antimony	ug/L	ND	40	40	40.5	39.8	101	99	70-130	2	20		
Arsenic	ug/L	ND	40	40	39.2	38.6	97	96	70-130	1	20		
Cadmium	ug/L	ND	40	40	37.5	37.3	94	93	70-130	1	20		
Chromium	ug/L	ND	40	40	37.5	37.3	93	93	70-130	1	20		
Selenium	ug/L	ND	40	40	37.9	37.6	94	94	70-130	1	20		
Thallium	ug/L	ND	40	40	35.2	35.0	88	88	70-130	0	20		

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

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

**QUALITY CONTROL DATA**

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

QC Batch: 652429	Analysis Method: SM 2320B
QC Batch Method: SM 2320B	Analysis Description: 2320B Alkalinity
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60335363001, 60335363002

METHOD BLANK: 2646871 Matrix: Water

Associated Lab Samples: 60335363001, 60335363002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<8.4	20.0	8.4	05/01/20 14:04	

LABORATORY CONTROL SAMPLE: 2646872

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	513	103	90-110	

SAMPLE DUPLICATE: 2646873

Parameter	Units	60335791001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	271	280	3	10	

SAMPLE DUPLICATE: 2646874

Parameter	Units	60335363001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	350	345	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**

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

QC Batch: 653472

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60335363003, 60335363004, 60335363005, 60335363006, 60335363007, 60335363008, 60335363011

METHOD BLANK: 2650891

Matrix: Water

Associated Lab Samples: 60335363003, 60335363004, 60335363005, 60335363006, 60335363007, 60335363008, 60335363011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<8.4	20.0	8.4	05/08/20 16:51	

LABORATORY CONTROL SAMPLE: 2650892

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	487	97	90-110	

SAMPLE DUPLICATE: 2650893

Parameter	Units	60335363005 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	77.2	78.6	2	10	

SAMPLE DUPLICATE: 2650894

Parameter	Units	60335364022 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	444	461	4	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

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

**QUALITY CONTROL DATA**

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

QC Batch: 657162

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60335363012

METHOD BLANK: 2665082

Matrix: Water

Associated Lab Samples: 60335363012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	<8.4	20.0	8.4	05/28/20 12:20	

LABORATORY CONTROL SAMPLE: 2665083

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	500	495	99	90-110	

SAMPLE DUPLICATE: 2665084

Parameter	Units	60337621001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	242	226	7	10	

SAMPLE DUPLICATE: 2665085

Parameter	Units	60337748002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	2110	2140	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**

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

QC Batch: 651545

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60335363001, 60335363002

METHOD BLANK: 2643651

Matrix: Water

Associated Lab Samples: 60335363001, 60335363002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	04/28/20 14:10	

LABORATORY CONTROL SAMPLE: 2643652

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	995	100	80-120	

SAMPLE DUPLICATE: 2643653

Parameter	Units	60335395021 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	178	178	0	10	

SAMPLE DUPLICATE: 2643654

Parameter	Units	60335247005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	213	216	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

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

QC Batch:	652392	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60335363003, 60335363004, 60335363005, 60335363006, 60335363007, 60335363008

METHOD BLANK: 2646704 Matrix: Water

Associated Lab Samples: 60335363003, 60335363004, 60335363005, 60335363006, 60335363007, 60335363008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/01/20 11:45	

LABORATORY CONTROL SAMPLE: 2646705

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1000	100	80-120	

SAMPLE DUPLICATE: 2646706

Parameter	Units	60335363005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1370	1360	1	10	

SAMPLE DUPLICATE: 2646707

Parameter	Units	60335359006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	452	476	5	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

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

QC Batch: 652673	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60335363011

METHOD BLANK: 2647724 Matrix: Water

Associated Lab Samples: 60335363011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/04/20 15:19	

LABORATORY CONTROL SAMPLE: 2647725

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	998	100	80-120	

SAMPLE DUPLICATE: 2647726

Parameter	Units	60335364019 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	490	504	3	10	

SAMPLE DUPLICATE: 2647727

Parameter	Units	60335830001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	226	227	0	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

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



### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

QC Batch: 656005

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60335363012

METHOD BLANK: 2660556

Matrix: Water

Associated Lab Samples: 60335363012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	05/21/20 10:57	

LABORATORY CONTROL SAMPLE: 2660557

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1000	100	80-120	

SAMPLE DUPLICATE: 2660558

Parameter	Units	60337657009 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1060	1050	1	10	

SAMPLE DUPLICATE: 2660559

Parameter	Units	60337555002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	430	429	0	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

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

QC Batch: 651256

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: 60335363001, 60335363002

METHOD BLANK: 2642663

Matrix: Water

Associated Lab Samples: 60335363001, 60335363002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.035	0.20	0.035	04/25/20 10:56	H6

LABORATORY CONTROL SAMPLE: 2642664

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.1	104	90-110	H6

SAMPLE DUPLICATE: 2642665

Parameter	Units	60335364006 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	<0.035	<0.035		20	H6

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

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

QC Batch: 651888	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: 60335363003, 60335363004, 60335363005, 60335363006, 60335363007, 60335363008

METHOD BLANK: 2644762 Matrix: Water

Associated Lab Samples: 60335363003, 60335363004, 60335363005, 60335363006, 60335363007, 60335363008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.035	0.20	0.035	04/29/20 14:10	H6

LABORATORY CONTROL SAMPLE: 2644763

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

SAMPLE DUPLICATE: 2644764

Parameter	Units	60335363005 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	<0.035	<0.035		20	H6

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

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

**QUALITY CONTROL DATA**

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

QC Batch: 652510	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: 60335363011

METHOD BLANK: 2647415 Matrix: Water

Associated Lab Samples: 60335363011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.035	0.20	0.035	05/04/20 10:40	H6

LABORATORY CONTROL SAMPLE: 2647416

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

SAMPLE DUPLICATE: 2647417

Parameter	Units	60335364020 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.18J	0.19J		20	H6

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**

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

**QUALITY CONTROL DATA**

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

QC Batch: 655994	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: 60335363012

METHOD BLANK: 2660523 Matrix: Water

Associated Lab Samples: 60335363012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.035	0.20	0.035	05/21/20 13:25	H6

LABORATORY CONTROL SAMPLE: 2660524

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.1	107	90-110	H6

SAMPLE DUPLICATE: 2660525

Parameter	Units	60335363012 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.072J	0.072J		20	H6

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**

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

QC Batch: 651299

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: 60335363001, 60335363002

METHOD BLANK: 2642921

Matrix: Water

Associated Lab Samples: 60335363001, 60335363002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.039	0.050	0.039	04/27/20 11:04	

LABORATORY CONTROL SAMPLE: 2642922

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.55	109	80-120	

MATRIX SPIKE SAMPLE: 2642924

Parameter	Units	60335364006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	<0.039	0.5	0.37	74	75-125	M1

SAMPLE DUPLICATE: 2642923

Parameter	Units	60335247008 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	<0.039		20	

SAMPLE DUPLICATE: 2642925

Parameter	Units	60335364006 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.039	<0.039		20	

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

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

QC Batch: 652113

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: 60335363003, 60335363004, 60335363005, 60335363006, 60335363007, 60335363008

METHOD BLANK: 2645575

Matrix: Water

Associated Lab Samples: 60335363003, 60335363004, 60335363005, 60335363006, 60335363007, 60335363008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.039	0.050	0.039	04/30/20 10:50	

LABORATORY CONTROL SAMPLE: 2645576

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

MATRIX SPIKE SAMPLE: 2645577

Parameter	Units	60335531002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.30	0.5	0.74	88	75-125	

SAMPLE DUPLICATE: 2645578

Parameter	Units	60335364017 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.039	<0.039		20	

SAMPLE DUPLICATE: 2645579

Parameter	Units	60335363005 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.039	0.044J		20	

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

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

QC Batch: 652557	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: 60335363011

METHOD BLANK: 2647471 Matrix: Water

Associated Lab Samples: 60335363011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.039	0.050	0.039	05/04/20 11:20	

LABORATORY CONTROL SAMPLE: 2647472

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.55	109	80-120	

MATRIX SPIKE SAMPLE: 2647473

Parameter	Units	60335676001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	ND	0.5	0.58	107	75-125	

SAMPLE DUPLICATE: 2647474

Parameter	Units	60335364020 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.095	0.099	4	20	

SAMPLE DUPLICATE: 2647475

Parameter	Units	60335826001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.050	0.046J		20	

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

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



**QUALITY CONTROL DATA**

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

QC Batch: 656000	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: 60335363012

METHOD BLANK: 2660537 Matrix: Water

Associated Lab Samples: 60335363012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.039	0.050	0.039	05/21/20 15:15	

LABORATORY CONTROL SAMPLE: 2660538

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.53	105	80-120	

MATRIX SPIKE SAMPLE: 2660540

Parameter	Units	60337657001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	2.3	2.5	4.6	93	75-125	

SAMPLE DUPLICATE: 2660539

Parameter	Units	60337316001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.19	0.19	0	20	

SAMPLE DUPLICATE: 2660541

Parameter	Units	60337657001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	2.3	2.3	0	20	

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**

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

**QUALITY CONTROL DATA**

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

QC Batch: 654367	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: 60335363001, 60335363002

METHOD BLANK: 2654374 Matrix: Water

Associated Lab Samples: 60335363001, 60335363002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/13/20 22:39	
Fluoride	mg/L	<0.075	0.20	0.075	05/13/20 22:39	
Sulfate	mg/L	<0.28	1.0	0.28	05/13/20 22:39	

METHOD BLANK: 2655360 Matrix: Water

Associated Lab Samples: 60335363001, 60335363002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.43J	1.0	0.39	05/14/20 14:37	
Fluoride	mg/L	<0.075	0.20	0.075	05/14/20 14:37	
Sulfate	mg/L	<0.28	1.0	0.28	05/14/20 14:37	

METHOD BLANK: 2659252 Matrix: Water

Associated Lab Samples: 60335363001, 60335363002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/18/20 10:18	
Fluoride	mg/L	<0.075	0.20	0.075	05/18/20 10:18	
Sulfate	mg/L	<0.28	1.0	0.28	05/18/20 10:18	

LABORATORY CONTROL SAMPLE: 2654375

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	
Sulfate	mg/L	5	4.8	97	90-110	

LABORATORY CONTROL SAMPLE: 2655361

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	2.4	97	90-110	
Sulfate	mg/L	5	4.9	97	90-110	

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**

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

LABORATORY CONTROL SAMPLE: 2659253

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	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2654376 2654377

Parameter	Units	60336256002		MS		MSD		% Rec		Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec				
Chloride	mg/L	102	100	100	200	198	97	95	80-120	1	15		
Fluoride	mg/L	ND	50	50	48.5	48.8	95	96	80-120	1	15		
Sulfate	mg/L	67.3	100	100	165	164	97	97	80-120	0	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

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

QC Batch:	654376	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: 60335363003, 60335363004, 60335363005, 60335363006, 60335363007, 60335363008

METHOD BLANK: 2654411 Matrix: Water  
Associated Lab Samples: 60335363003, 60335363004, 60335363005, 60335363006, 60335363007, 60335363008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/13/20 14:52	
Fluoride	mg/L	<0.075	0.20	0.075	05/13/20 14:52	
Sulfate	mg/L	<0.28	1.0	0.28	05/13/20 14:52	

METHOD BLANK: 2655379 Matrix: Water  
Associated Lab Samples: 60335363003, 60335363004, 60335363005, 60335363006, 60335363007, 60335363008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.43J	1.0	0.39	05/14/20 14:21	
Fluoride	mg/L	<0.075	0.20	0.075	05/14/20 14:21	
Sulfate	mg/L	<0.28	1.0	0.28	05/14/20 14:21	

METHOD BLANK: 2658822 Matrix: Water  
Associated Lab Samples: 60335363003, 60335363004, 60335363005, 60335363006, 60335363007, 60335363008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/15/20 09:31	
Fluoride	mg/L	<0.075	0.20	0.075	05/15/20 09:31	
Sulfate	mg/L	<0.28	1.0	0.28	05/15/20 09:31	

LABORATORY CONTROL SAMPLE: 2654413

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	93	90-110	
Fluoride	mg/L	2.5	2.3	92	90-110	
Sulfate	mg/L	5	4.7	95	90-110	

LABORATORY CONTROL SAMPLE: 2655380

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	2.4	97	90-110	
Sulfate	mg/L	5	4.8	97	90-110	

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

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

**QUALITY CONTROL DATA**

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

LABORATORY CONTROL SAMPLE: 2658823

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	93	90-110	
Sulfate	mg/L	5	4.8	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2654414 2654415

Parameter	Units	60335363005		MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.									
Chloride	mg/L	12.0	5	5	5	17.4	17.5	108	109	80-120	0	15	
Fluoride	mg/L	0.49	2.5	2.5	2.5	2.6	2.7	85	86	80-120	2	15	
Sulfate	mg/L	832	250	250	250	1100	1100	107	108	80-120	0	15	E

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2654416 2654417

Parameter	Units	60335361003		MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.									
Chloride	mg/L	42.1	50	50	50	91.7	92.7	99	101	80-120	1	15	
Fluoride	mg/L	0.28	2.5	2.5	2.5	2.7	2.7	96	95	80-120	1	15	
Sulfate	mg/L	31.8	50	50	50	81.4	82.5	99	101	80-120	1	15	

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

**REPORT OF LABORATORY ANALYSIS**

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY CTR SCPA  
Pace Project No.: 60335363

QC Batch: 655521 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: 60335363011

METHOD BLANK: 2658959 Matrix: Water  
Associated Lab Samples: 60335363011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/19/20 09:19	
Fluoride	mg/L	<0.075	0.20	0.075	05/19/20 09:19	
Sulfate	mg/L	<0.28	1.0	0.28	05/19/20 09:19	

METHOD BLANK: 2660762 Matrix: Water  
Associated Lab Samples: 60335363011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/20/20 09:31	
Fluoride	mg/L	<0.075	0.20	0.075	05/20/20 09:31	
Sulfate	mg/L	<0.28	1.0	0.28	05/20/20 09:31	

METHOD BLANK: 2660856 Matrix: Water  
Associated Lab Samples: 60335363011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	05/21/20 09:26	
Fluoride	mg/L	<0.075	0.20	0.075	05/21/20 09:26	
Sulfate	mg/L	<0.28	1.0	0.28	05/21/20 09:26	

LABORATORY CONTROL SAMPLE: 2658960

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	94	90-110	
Fluoride	mg/L	2.5	2.5	101	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

LABORATORY CONTROL SAMPLE: 2660763

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	103	90-110	
Sulfate	mg/L	5	5.0	99	90-110	

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

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

LABORATORY CONTROL SAMPLE: 2660857

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	2.6	103	90-110	
Sulfate	mg/L	5	4.9	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2658961 2658962

Parameter	Units	60335364016		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Conc.	Result	Result	% Rec	% Rec					
Chloride	mg/L	51.6	25	25	78.3	78.2	107	106	80-120	0	15		
Fluoride	mg/L	0.39	2.5	2.5	2.9	3.0	99	104	80-120	4	15		
Sulfate	mg/L	68.2	25	25	93.9	93.7	103	102	80-120	0	15		

MATRIX SPIKE SAMPLE: 2658963

Parameter	Units	60335364024 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	7.7	5	13.4	114	80-120	
Fluoride	mg/L	0.30	2.5	3.0	110	80-120	
Sulfate	mg/L	86.1	50	142	111	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.

### REPORT OF LABORATORY ANALYSIS

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

QC Batch: 657852	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: 60335363012

METHOD BLANK: 2667616 Matrix: Water

Associated Lab Samples: 60335363012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	06/02/20 09:34	
Fluoride	mg/L	<0.075	0.20	0.075	06/02/20 09:34	
Sulfate	mg/L	<0.28	1.0	0.28	06/02/20 09:34	

METHOD BLANK: 2669491 Matrix: Water

Associated Lab Samples: 60335363012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.47J	1.0	0.39	06/03/20 19:05	
Fluoride	mg/L	<0.075	0.20	0.075	06/03/20 19:05	
Sulfate	mg/L	<0.28	1.0	0.28	06/03/20 19:05	

METHOD BLANK: 2671044 Matrix: Water

Associated Lab Samples: 60335363012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	06/04/20 09:28	
Fluoride	mg/L	<0.075	0.20	0.075	06/04/20 09:28	
Sulfate	mg/L	<0.28	1.0	0.28	06/04/20 09:28	

METHOD BLANK: 2672173 Matrix: Water

Associated Lab Samples: 60335363012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	06/05/20 09:41	
Fluoride	mg/L	<0.075	0.20	0.075	06/05/20 09:41	
Sulfate	mg/L	<0.28	1.0	0.28	06/05/20 09:41	

LABORATORY CONTROL SAMPLE: 2667617

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	

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

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



**QUALITY CONTROL DATA**

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

LABORATORY CONTROL SAMPLE: 2667617

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	4.8	96	90-110	

LABORATORY CONTROL SAMPLE: 2669492

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	2.3	93	90-110	
Sulfate	mg/L	5	4.9	97	90-110	

LABORATORY CONTROL SAMPLE: 2671045

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	100	90-110	
Sulfate	mg/L	5	5.3	106	90-110	

LABORATORY CONTROL SAMPLE: 2672174

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	99	90-110	
Fluoride	mg/L	2.5	2.5	102	90-110	
Sulfate	mg/L	5	5.4	107	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2667618 2667619

Parameter	Units	60338397001		60338179002		60338179002		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec				
Chloride	mg/L	2850	1000	1000	3780	3760	94	91	80-120	1	15
Fluoride	mg/L	6.2	125	125	153	129	118	98	80-120	17	15 R1
Sulfate	mg/L	193	500	500	726	730	107	107	80-120	1	15

MATRIX SPIKE SAMPLE: 2667620

Parameter	Units	60338179002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	151	50	200	99	80-120	E
Fluoride	mg/L	ND	25	26.1	100	80-120	
Sulfate	mg/L	91.0	50	139	96	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.

**REPORT OF LABORATORY ANALYSIS**

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

**ANALYTICAL RESULTS - RADIOCHEMISTRY**

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

**Sample: S-BMW-3D**      **Lab ID: 60335363001**      Collected: 04/22/20 12:50      Received: 04/24/20 02:40      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	<b>0.305 ± 0.561 (1.00)</b> <b>C:NA T:83%</b>	pCi/L	05/06/20 16:21	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>1.20 ± 0.503 (0.819)</b> <b>C:77% T:79%</b>	pCi/L	05/07/20 11:03	15262-20-1	

**REPORT OF LABORATORY ANALYSIS**

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

**Sample: S-BMW-1D**      **Lab ID: 60335363002**      Collected: 04/22/20 14:35      Received: 04/24/20 02:40      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	<b>0.134 ± 0.322 (0.622)</b> <b>C:NA T:89%</b>	pCi/L	05/06/20 16:21	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.574 ± 0.394 (0.762)</b> <b>C:79% T:80%</b>	pCi/L	05/07/20 11:04	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

**Sample: S-UMW-1D**      **Lab ID: 60335363003**      Collected: 04/28/20 10:05      Received: 04/29/20 03:12      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	<b>0.311 ± 0.325 (0.458)</b> <b>C:NA T:97%</b>	pCi/L	05/25/20 15:21	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>-0.0755 ± 0.418 (0.983)</b> <b>C:65% T:82%</b>	pCi/L	05/21/20 12:35	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

**Sample: S-UMW-2D**      **Lab ID: 60335363004**      Collected: 04/28/20 14:10      Received: 04/29/20 03:12      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	<b>0.122 ± 0.448 (0.861)</b> <b>C:NA T:85%</b>	pCi/L	05/25/20 15:21	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.720 ± 0.452 (0.858)</b> <b>C:67% T:89%</b>	pCi/L	05/21/20 12:35	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

**Sample: S-UMW-3D**      **Lab ID: 60335363005**      Collected: 04/28/20 12:50      Received: 04/29/20 03:12      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	<b>0.687 ± 0.448 (0.459)</b> <b>C:NA T:87%</b>	pCi/L	05/25/20 15:21	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.943 ± 0.473 (0.845)</b> <b>C:70% T:89%</b>	pCi/L	05/21/20 12:18	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: S-UMW-4D</b> <b>Lab ID: 60335363006</b> Collected: 04/28/20 11:55      Received: 04/29/20 03:12      Matrix: Water PWS:      Site ID:      Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	<b>-0.132 ± 0.317 (0.791)</b> <b>C:NA T:97%</b>	pCi/L	05/25/20 15:38	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>1.54 ± 0.591 (0.915)</b> <b>C:65% T:87%</b>	pCi/L	05/21/20 12:36	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: S-UMW-DUP-1</b> <b>Lab ID: 60335363007</b> Collected: 04/28/20 08:00      Received: 04/29/20 03:12      Matrix: Water PWS:      Site ID:      Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.192 ± 0.332 (0.594)</b> <b>C:NA T:91%</b>	pCi/L	05/25/20 15:38	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.996 ± 0.541 (0.978)</b> <b>C:63% T:79%</b>	pCi/L	05/21/20 12:36	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

**Sample: S-UMW-FB-1**      **Lab ID: 60335363008**      Collected: 04/28/20 10:25      Received: 04/29/20 03:12      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	<b>0.282 ± 0.518 (0.924)</b> <b>C:NA T:92%</b>	pCi/L	05/25/20 15:38	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.355 ± 0.661 (1.45)</b> <b>C:59% T:80%</b>	pCi/L	05/21/20 12:18	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

**Sample: S-UMW-3D-MS-1**      **Lab ID: 60335363009**      Collected: 04/28/20 10:25      Received: 04/29/20 03:12      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	<b>78.82 %REC ± NA (NA)</b> <b>C:NA T:NA%</b>	pCi/L	05/25/20 15:38	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>113.30 %REC ± NA (NA)</b> <b>C:NA T:NA</b>	pCi/L	05/21/20 12:18	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

**Sample: S-UMW-3D-MSD-1**      **Lab ID: 60335363010**      Collected: 04/28/20 12:50      Received: 04/29/20 03:12      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	<b>98.25 %REC 21.95 RPD ±</b> <b>NA (NA)</b> <b>C:NA T:NA%</b>	pCi/L	05/25/20 15:38	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>110.51 %REC 2.49 RPD ±</b> <b>NA (NA)</b> <b>C:NA T:NA</b>	pCi/L	05/21/20 12:18	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: S-UMW-5D</b> <b>Lab ID: 60335363011</b> Collected: 04/29/20 13:55      Received: 05/01/20 02:30      Matrix: Water PWS:      Site ID:      Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.320 ± 0.519 (0.903)</b> <b>C:NA T:90%</b>	pCi/L	05/25/20 14:21	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>-0.106 ± 0.346 (0.827)</b> <b>C:82% T:81%</b>	pCi/L	05/21/20 14:05	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: S-UMW-6D</b> <b>Lab ID: 60335363012</b> Collected: 05/18/20 10:33      Received: 05/19/20 02:25      Matrix: Water PWS:      Site ID:      Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.313 ± 0.575 (1.03)</b> <b>C:NA T:78%</b>	pCi/L	06/03/20 12:47	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.109 ± 0.385 (0.868)</b> <b>C:72% T:85%</b>	pCi/L	06/01/20 14:42	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

QC Batch:	394231	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: 60335363001, 60335363002

METHOD BLANK:	1909548	Matrix:	Water
---------------	---------	---------	-------

Associated Lab Samples: 60335363001, 60335363002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.691 ± 0.438 (0.830) C:81% T:72%	pCi/L	05/07/20 11:03	

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

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

### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

QC Batch: 394233

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: 60335363001, 60335363002

METHOD BLANK: 1909566

Matrix: Water

Associated Lab Samples: 60335363001, 60335363002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.101 ± 0.421 (0.803) C:NA T:88%	pCi/L	05/06/20 16:21	

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

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

### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY CTR SCPA  
Pace Project No.: 60335363

---

QC Batch:	395154	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: 60335363003, 60335363004, 60335363005, 60335363006, 60335363007, 60335363008, 60335363009, 60335363010

---

METHOD BLANK: 1913458 Matrix: Water

Associated Lab Samples: 60335363003, 60335363004, 60335363005, 60335363006, 60335363007, 60335363008, 60335363009, 60335363010

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.107 ± 0.331 (0.753) C:NA T:86%	pCi/L	05/25/20 15:05	

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

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



### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

QC Batch: 398061

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: 60335363012

METHOD BLANK: 1928278

Matrix: Water

Associated Lab Samples: 60335363012

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.0515 ± 0.303 (0.675) C:NA T:85%	pCi/L	06/03/20 12:36	

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

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

### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

QC Batch: 395152

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: 60335363011

METHOD BLANK: 1913446

Matrix: Water

Associated Lab Samples: 60335363011

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.145 ± 0.251 (0.634) C:NA T:92%	pCi/L	05/25/20 14:07	

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

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

### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

QC Batch:	395151	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: 60335363011

METHOD BLANK:	1913444	Matrix:	Water
---------------	---------	---------	-------

Associated Lab Samples: 60335363011

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.810 ± 0.404 (0.699) C:81% T:80%	pCi/L	05/21/20 11:02	

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

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

### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

---

QC Batch:	395156	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: 60335363003, 60335363004, 60335363005, 60335363006, 60335363007, 60335363008, 60335363009, 60335363010

---

METHOD BLANK: 1913461 Matrix: Water

Associated Lab Samples: 60335363003, 60335363004, 60335363005, 60335363006, 60335363007, 60335363008, 60335363009, 60335363010

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.342 ± 0.344 (0.708) C:71% T:80%	pCi/L	05/21/20 12:34	

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

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

**QUALITY CONTROL - RADIOCHEMISTRY**

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

QC Batch: 398065

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: 60335363012

METHOD BLANK: 1928288

Matrix: Water

Associated Lab Samples: 60335363012

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.469 ± 0.397 (0.801) C:74% T:82%	pCi/L	06/01/20 11:31	

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**

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

## QUALIFIERS

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

---

### 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.

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.

H6 Analysis initiated outside of the 15 minute EPA required holding time.

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

R1 RPD value was outside control limits.

## REPORT OF LABORATORY ANALYSIS

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

### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60335363001	S-BMW-3D	EPA 200.7	651904	EPA 200.7	651985
60335363002	S-BMW-1D	EPA 200.7	651904	EPA 200.7	651985
60335363003	S-UMW-1D	EPA 200.7	652406	EPA 200.7	652606
60335363004	S-UMW-2D	EPA 200.7	652406	EPA 200.7	652606
60335363005	S-UMW-3D	EPA 200.7	652406	EPA 200.7	652606
60335363006	S-UMW-4D	EPA 200.7	652406	EPA 200.7	652606
60335363007	S-UMW-DUP-1	EPA 200.7	652406	EPA 200.7	652606
60335363008	S-UMW-FB-1	EPA 200.7	652406	EPA 200.7	652606
60335363011	S-UMW-5D	EPA 200.7	653354	EPA 200.7	653397
60335363012	S-UMW-6D	EPA 200.7	658199	EPA 200.7	658295
60335363001	S-BMW-3D	EPA 200.8	652407	EPA 200.8	652608
60335363002	S-BMW-1D	EPA 200.8	652407	EPA 200.8	652608
60335363003	S-UMW-1D	EPA 200.8	652407	EPA 200.8	652608
60335363004	S-UMW-2D	EPA 200.8	652407	EPA 200.8	652608
60335363005	S-UMW-3D	EPA 200.8	652407	EPA 200.8	652608
60335363006	S-UMW-4D	EPA 200.8	652407	EPA 200.8	652608
60335363007	S-UMW-DUP-1	EPA 200.8	652407	EPA 200.8	652608
60335363008	S-UMW-FB-1	EPA 200.8	652407	EPA 200.8	652608
60335363011	S-UMW-5D	EPA 200.8	653336	EPA 200.8	653394
60335363012	S-UMW-6D	EPA 200.8	655587	EPA 200.8	655788
60335363001	S-BMW-3D	EPA 7470	653803	EPA 7470	653941
60335363002	S-BMW-1D	EPA 7470	653803	EPA 7470	653941
60335363003	S-UMW-1D	EPA 7470	654466	EPA 7470	654613
60335363004	S-UMW-2D	EPA 7470	654466	EPA 7470	654613
60335363005	S-UMW-3D	EPA 7470	654466	EPA 7470	654613
60335363006	S-UMW-4D	EPA 7470	654466	EPA 7470	654613
60335363007	S-UMW-DUP-1	EPA 7470	654466	EPA 7470	654613
60335363008	S-UMW-FB-1	EPA 7470	654466	EPA 7470	654613
60335363011	S-UMW-5D	EPA 7470	654729	EPA 7470	654919
60335363012	S-UMW-6D	EPA 7470	655937	EPA 7470	655952
60335363001	S-BMW-3D	EPA 903.1	394233		
60335363002	S-BMW-1D	EPA 903.1	394233		
60335363003	S-UMW-1D	EPA 903.1	395154		
60335363004	S-UMW-2D	EPA 903.1	395154		
60335363005	S-UMW-3D	EPA 903.1	395154		
60335363006	S-UMW-4D	EPA 903.1	395154		
60335363007	S-UMW-DUP-1	EPA 903.1	395154		
60335363008	S-UMW-FB-1	EPA 903.1	395154		
60335363009	S-UMW-3D-MS-1	EPA 903.1	395154		
60335363010	S-UMW-3D-MSD-1	EPA 903.1	395154		
60335363011	S-UMW-5D	EPA 903.1	395152		
60335363012	S-UMW-6D	EPA 903.1	398061		

### REPORT OF LABORATORY ANALYSIS

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

### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60335363001	S-BMW-3D	EPA 904.0	394231		
60335363002	S-BMW-1D	EPA 904.0	394231		
60335363003	S-UMW-1D	EPA 904.0	395156		
60335363004	S-UMW-2D	EPA 904.0	395156		
60335363005	S-UMW-3D	EPA 904.0	395156		
60335363006	S-UMW-4D	EPA 904.0	395156		
60335363007	S-UMW-DUP-1	EPA 904.0	395156		
60335363008	S-UMW-FB-1	EPA 904.0	395156		
60335363009	S-UMW-3D-MS-1	EPA 904.0	395156		
60335363010	S-UMW-3D-MSD-1	EPA 904.0	395156		
60335363011	S-UMW-5D	EPA 904.0	395151		
60335363012	S-UMW-6D	EPA 904.0	398065		
60335363001	S-BMW-3D	SM 2320B	652429		
60335363002	S-BMW-1D	SM 2320B	652429		
60335363003	S-UMW-1D	SM 2320B	653472		
60335363004	S-UMW-2D	SM 2320B	653472		
60335363005	S-UMW-3D	SM 2320B	653472		
60335363006	S-UMW-4D	SM 2320B	653472		
60335363007	S-UMW-DUP-1	SM 2320B	653472		
60335363008	S-UMW-FB-1	SM 2320B	653472		
60335363011	S-UMW-5D	SM 2320B	653472		
60335363012	S-UMW-6D	SM 2320B	657162		
60335363001	S-BMW-3D	SM 2540C	651545		
60335363002	S-BMW-1D	SM 2540C	651545		
60335363003	S-UMW-1D	SM 2540C	652392		
60335363004	S-UMW-2D	SM 2540C	652392		
60335363005	S-UMW-3D	SM 2540C	652392		
60335363006	S-UMW-4D	SM 2540C	652392		
60335363007	S-UMW-DUP-1	SM 2540C	652392		
60335363008	S-UMW-FB-1	SM 2540C	652392		
60335363011	S-UMW-5D	SM 2540C	652673		
60335363012	S-UMW-6D	SM 2540C	656005		
60335363001	S-BMW-3D	SM 3500-Fe B#4	654094		
60335363002	S-BMW-1D	SM 3500-Fe B#4	654095		
60335363003	S-UMW-1D	SM 3500-Fe B#4	654095		
60335363004	S-UMW-2D	SM 3500-Fe B#4	654095		
60335363005	S-UMW-3D	SM 3500-Fe B#4	654095		
60335363006	S-UMW-4D	SM 3500-Fe B#4	654095		
60335363007	S-UMW-DUP-1	SM 3500-Fe B#4	654095		
60335363008	S-UMW-FB-1	SM 3500-Fe B#4	654095		
60335363011	S-UMW-5D	SM 3500-Fe B#4	654157		

### REPORT OF LABORATORY ANALYSIS

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



### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SIOUX ENERGY CTR SCPA

Pace Project No.: 60335363

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60335363012	S-UMW-6D	SM 3500-Fe B#4	659234		
60335363001	S-BMW-3D	SM 3500-Fe B#4	651256		
60335363002	S-BMW-1D	SM 3500-Fe B#4	651256		
60335363003	S-UMW-1D	SM 3500-Fe B#4	651888		
60335363004	S-UMW-2D	SM 3500-Fe B#4	651888		
60335363005	S-UMW-3D	SM 3500-Fe B#4	651888		
60335363006	S-UMW-4D	SM 3500-Fe B#4	651888		
60335363007	S-UMW-DUP-1	SM 3500-Fe B#4	651888		
60335363008	S-UMW-FB-1	SM 3500-Fe B#4	651888		
60335363011	S-UMW-5D	SM 3500-Fe B#4	652510		
60335363012	S-UMW-6D	SM 3500-Fe B#4	655994		
60335363001	S-BMW-3D	SM 4500-S-2 D	651299		
60335363002	S-BMW-1D	SM 4500-S-2 D	651299		
60335363003	S-UMW-1D	SM 4500-S-2 D	652113		
60335363004	S-UMW-2D	SM 4500-S-2 D	652113		
60335363005	S-UMW-3D	SM 4500-S-2 D	652113		
60335363006	S-UMW-4D	SM 4500-S-2 D	652113		
60335363007	S-UMW-DUP-1	SM 4500-S-2 D	652113		
60335363008	S-UMW-FB-1	SM 4500-S-2 D	652113		
60335363011	S-UMW-5D	SM 4500-S-2 D	652557		
60335363012	S-UMW-6D	SM 4500-S-2 D	656000		
60335363001	S-BMW-3D	EPA 300.0	654367		
60335363002	S-BMW-1D	EPA 300.0	654367		
60335363003	S-UMW-1D	EPA 300.0	654376		
60335363004	S-UMW-2D	EPA 300.0	654376		
60335363005	S-UMW-3D	EPA 300.0	654376		
60335363006	S-UMW-4D	EPA 300.0	654376		
60335363007	S-UMW-DUP-1	EPA 300.0	654376		
60335363008	S-UMW-FB-1	EPA 300.0	654376		
60335363011	S-UMW-5D	EPA 300.0	655521		
60335363012	S-UMW-6D	EPA 300.0	657852		

### REPORT OF LABORATORY ANALYSIS

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



Sample Condition Upon Receipt

WO#: 60335363



Client Name: Golder Assoc

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  zpk

Thermometer Used: T-296 Type of Ice: Wet Blue

Cooler Temperature (°C): As-read 2.0, 18.2 Corr. Factor +0.1 Corrected 2.1, 18.3

Date and initials of person examining contents: 4/24/20

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 <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) <u>Lot # 603173</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: Jami Clark Date 4/24/20

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.

<b>Section A</b> Required Client Information: Company: <b>Golder Associates</b> Address: <b>13515 Barrett Parkway Dr., Ste 260</b> Ballwin, MO 63021 Email To: <b>jeffrey_ingram@golder.com</b> Phone: <b>636-724-9191</b> Fax: <b>636-724-9323</b> Requested Due Date/TAT: <b>Standard</b>		<b>Section B</b> Required Project Information: Report To: <b>Jeffrey Ingram</b> Copy To: <b>Eric Schneider, Ryan Feldman</b> Purchase Order No.: <b>COC # 7</b> Project Name: <b>Ameren Sioux Energy Center SCPA</b> Project Number: <b>153140602.0003</b>		<b>Section C</b> Invoice Information: Attention: Company Name: <b>Golder Associates Inc</b> Address: Pace Quote Reference: Pace Project Manager: <b>Jamie Church</b> Pace Profile #: <b>9285, line 1</b>	
<b>REGULATORY AGENCY</b> <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 STATE: <b>MO</b>			

Page: **3** of **3**

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 WP AR AR OT OT TS 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							
1	S-BMW-3D			4/22/20	1250	G	WT	Unpreserved	Y		
2	S-BMW-ID			4/23/20	1435	G	WT	H <sub>2</sub> SO <sub>4</sub>	Y		
3						G	WT	HCl	Y		
4						G	WT	NaOH	Y		
5						G	WT	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Y		
6						G	WT	Methanol	Y		
7						G	WT	Other	Y		
8						G	WT	Analysis Test	Y		
9						G	WT	App III and CatVn Metals	Y		
10						G	WT	Chloride/Fluoride/Sulfate	Y		
11						G	WT	App III and CatVn Metals *	Y		
12						G	WT	Alkalinity	Y		
						G	WT	TDS	Y		
						G	WT	Appendix IV Metals *	Y		
						G	WT	Mercury	Y		
						G	WT	Radium 226	Y		
						G	WT	Radium 226	Y		
						G	WT	Ferrous/Ferric Iron	Y		
						G	WT	SM4500-S2D Sulfide	Y		

<b>ADDITIONAL COMMENTS</b> * App III and CatVn Metals - EPA 200.7 - Ba, Be, Cu, Pb, Li, Mo ** App IV Metals - EPA 200.7 - Ba, Be, Co, Pb, Li, Mo 200.8 Metals - Sb, As, Cd, Cr, Se, Tl	RELINQUISHED BY / AFFILIATION <b>Eric Schneider</b>	DATE <b>4/23/20</b>	TIME <b>1800</b>	ACCEPTED BY / AFFILIATION <b>E. Brockhoff Pace</b>	DATE <b>4/24/20</b>	TIME <b>1400</b>	SAMPLE CONDITIONS Received on Ice (Y/N) <b>N</b> Custody Sealed (Y/N) <b>Y</b> Cooler (Y/N) <b>Y</b> Samples Intact (Y/N) <b>Y</b>
SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: <b>Eric Schneider</b> SIGNATURE of SAMPLER: <i>[Signature]</i>			DATE Signed (MM/DD/YY): <b>04/23/20</b>			Temp in °C <b>14.3</b>	



Sample Condition Upon Receipt

WO#: 60335363



60335363

Client Name:

Golder Assoc

Courier: FedEx [ ] UPS [ ] VIA [ ] Clay [ ] PEX [ ] ECI [ ] Pace [ ] Xroads [X] Client [ ] Other [ ]

Tracking #:

Pace Shipping Label Used? Yes [ ] No [X]

Custody Seal on Cooler/Box Present: Yes [ ] No [X] Seals intact: Yes [ ] No [X]

Packing Material: Bubble Wrap [ ] Bubble Bags [ ] Foam [ ] None [ ] Other [X] zpic

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

Cooler Temperature (°C): As-read 0.5 Corr. Factor 10.1 Corrected 0.6

Date and initials of person examining contents: 4/29/20

Temperature should be above freezing to 6°C

21.5, 20.3, 0.7, 0.9, 0.2, 1.5

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	All coolers out of temp
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	had only Radium
Short Hold Time analyses (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Fez
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	No Dates on COC
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	All Dates on Containers read
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	4/28/20
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Received volume for MS/MSD for
Sample labels match COC: Date / time / ID / analyses	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Sample S-UMW-3D not UMW-1D
Samples contain multiple phases? Matrix: WT	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	as stated on COC
Containers requiring pH preservation in compliance? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) Lot # 603173	<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:

Jamie Chung

4/29/20

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.

<b>Section A</b> Required Client Information: Company: <b>Golder Associates</b> Address: <b>13515 Barrett Parkway Dr., Ste 260</b> Ballwin, MO 63021 Email To: <b>jeffrey_ingram@golder.com</b> Phone: <b>636-724-9191</b> Fax: <b>636-724-9323</b> Requested Due Date/TAT: <b>Standard</b>		<b>Section B</b> Required Project Information: Report To: <b>Jeffrey Ingram</b> Copy To: <b>Eric Schnieder, Ryan Feldman</b> Purchase Order No.: <b>COC #7</b> Project Name: <b>Ameren Sioux Energy Center SCPA</b> Project Number: <b>153140602.0003A</b>		<b>Section C</b> Invoice Information: Attention: Company Name: <b>Golder Associates Inc</b> Address: Face Quote Reference: Face Project Manager: <b>Jamie Church</b> Face Profile #: <b>9285, line 1</b>	
<b>REGULATORY AGENCY</b> <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 <b>MO</b> STATE:	

ITEM #	Valid Matrix Codes MATRIX CODE DW DRINKING WATER WT WATER WW WASTE WATER P PRODUCT SL SOIL/SOLID OL OIL WP WR AR OT TS	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	RELINQUISHED BY / AFFILIATION		ACCEPTED BY / AFFILIATION		DATE	TIME	DATE	TIME	SAMPLE CONDITIONS
		COMPOSITE START	COMPOSITE END/GRAB			DATE	TIME	DATE	TIME					
1	S-UMMW-1D			G	WT	4/25/10	1605							
2	S-UMMW-2D			G	WT	4/25/10	1410							
3	S-UMMW-3D			G	WT		1256							
4	S-UMMW-4D			G	WT		1155							
5	S-UMMW-5D			G	WT									
6	S-UMMW-6D			G	WT									
7	S-UMMW-1D			G	WT									
8	S-UMMW-3D			G	WT									
9	S-UMMW-DUP-1			G	WT									
10	S-UMMW-FB-1			G	WT		1025							
11	S-UMMW-MS-1			G	WT		1250							
12	S-UMMW-MSD-1			G	WT		1250							

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				Requested Analysis Filtered (Y/N) Residual Chlorine (Y/N) Pace Project No./ Lab I.D. S-UMMW-1D-MS-1 S-UMMW-10-MSD-1			
Temp in °C _____ Received on _____ Custody Sealed _____ Cooler (Y/N) _____ Samples Intact _____							
SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: <b>Eric Schnieder</b> SIGNATURE of SAMPLER: <i>[Signature]</i>				DATE Signed (MM/DD/YYYY): <b>04/26/10</b>			



Sample Condition Upon Receipt

WO#: 60335363  
60335363

Client Name: Golder Assoc.

Courier: FedEx  UPS  VIA  Clay  PEX  ECI  Pace  Xroad  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  CPIC

Thermometer Used: T299 Type of Ice: Wet Blue  None

Cooler Temperature (°C): As-read 1.3 Corr. Factor +0.1 Corrected 1.4

Date and initials of person examining contents: 5-1-20 WT

Temperature should be above freezing to 6°C 17.3, 1.1 17.2, 1.2

Chain of Custody present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<u>cooler out of temp had only Radium samples</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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<u>Fe2</u>
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 <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) Lot # <u>603173</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: Jamie Chubb Date: 5/4/20





Sample Condition Upon Receipt

WO#: 60335363



Client Name: Golden Assoc.

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  Ziploc

Thermometer Used: T299 Type of Ice: Wet Blue  None

Cooler Temperature (°C): As-read 0.1 Corr. Factor 40.1 Corrected 0.2

Temperature should be above freezing to 6°C 17.6 17.7

Date and initials of person examining contents: 5-19-2020

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	cooler that was out of temp had only radium samples  Fe+2
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 <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) Lot # <u>603173, 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: \_\_\_\_\_

Project Manager Review: Jamie Clark Date: 5/19/20

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 1

<b>Section A</b> Required Client Information: Company: <b>Golder Associates</b>	<b>Section B</b> Required Project Information: Report To: <b>Jeffrey Ingram</b>	<b>Section C</b> Invoice Information: Attention:	<b>REGULATORY AGENCY</b> <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
Address: <b>13515 Barrett Parkway Dr., Ste 260</b> Ballwin, MO 63021		Company Name: <b>Golder Associates Inc</b>	
Email To: <b>jeffrey_ingram@golder.com</b>		Address:	
Phone: <b>636-724-9191</b> Fax: <b>636-724-9323</b>		Pace Quote Reference: Pace Project Manager: <b>Jamie Church</b>	
Requested Due Date/TAT: <b>Standard</b>		Site Location STATE: <b>MO</b>	
Purchase Order No.: <b>COC #7</b>		Site Location STATE: <b>MO</b>	
Project Name: <b>Ameren Sioux Energy Center SCPA</b>		Pace Profile #: <b>9285, line 1</b>	
Project Number: <b>153140602.0003A</b>		Pace Profile #: <b>9285, line 1</b>	

ITEM #	Valid Matrix Codes MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	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 *	Mercury	Radium 226	Radium 228	Ferrous/Ferric Iron	SM4500-S2D Sulfide		Residual Chlorine (Y/N)																
1	S-UMW-1D	WT G	DATE	TIME	DATE	TIME	H <sub>2</sub> SO <sub>4</sub>		X	X	X	X	X	X	X	X	X	X	X	X																		
2	S-UMW-2D	WT G	DATE	TIME	DATE	TIME	HNO <sub>3</sub>																															
3	S-UMW-3D	WT G	DATE	TIME	DATE	TIME	HCl																															
4	S-UMW-4D	WT G	DATE	TIME	DATE	TIME	NaOH																															
5	S-UMW-5D	WT G	DATE	TIME	DATE	TIME	Na <sub>2</sub> O <sub>2</sub>																															
6	S-UMW-6D	WT G	DATE	TIME	DATE	TIME	Methanol																															
7	S-BMW-1D	WT G	DATE	TIME	DATE	TIME	Other																															
8	S-BMW-3D	WT G	DATE	TIME	DATE	TIME	Unpreserved																															
9	S-UMW-DUP-1	WT G	DATE	TIME	DATE	TIME	H <sub>2</sub> SO <sub>4</sub>																															
10	S-UMW-FB-1	WT G	DATE	TIME	DATE	TIME	HNO <sub>3</sub>																															
11	S-UMW-MS-1	WT G	DATE	TIME	DATE	TIME	HCl																															
12	S-UMW-MSD-1	WT G	DATE	TIME	DATE	TIME	Methanol																															

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Brendan Talbert	5/18/20	1200	[Signature]	5/18	1205	
	Dougale Mullen	5/18/20	1205	[Signature]	5-19-20	02250-2	Y Y Y Y Y
						17.7 N	Y N Y Y

**SAMPLER NAME AND SIGNATURE**

PRINT Name of SAMPLER: **Brendan Talbert** DATE Signed (MM/DD/YY): **5/18/2020**

SIGNATURE of SAMPLER: *[Signature]*

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

**MEMORANDUM****DATE** July 1, 2020**Project No.** 153140602**TO** Project File  
Golder Associates**CC** Amanda Derhake, Jeff Ingram**FROM** Annie Muehlfarth**EMAIL** [AMuehlfarth@golder.com](mailto:AMuehlfarth@golder.com)**DATA VALIDATION SUMMARY, SIOUX ENERGY CENTER – SCPA – DETECTION MONITORING AND ASSESSMENT MONITORING - DATA PACKAGE 60335363**

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 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).
- When a compound was analyzed outside of hold time, sample results were qualified as estimates (J for detects, UJ for non-detects).
- 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 Associates Inc.  
 Project Name: Ameren - SEC - SCPA  
 Reviewer: A. Muehlfarth

Project Manager: J. Ingram  
 Project Number: 153140602  
 Validation Date: 06/29/2020

Laboratory: Pace Analytical

SDG #: 60335363

Analytical Method (type and no.): EPA 200.7/200.8 (Total Metals); EPA 7470 (Mercury); SM2320B (Alkalinity); SM2540C (TDS); SM3500-Fe B#4 (Ferric, Ferrous Iron); SM4500-S-2 D (Total Sulfide); EPA 300.0 (Anions); EPA 903.1/904.0 (Radium 226/228)

Matrix:  Air  Soil/Sed.  Water  Waste

Sample Names S-BMW-3D, S-BMW-1D, S-UMW-1D, S-UMW-2D, S-UMW-3D, S-UMW-4D, S-UMW-DUP-1, S-UMW-FB-1, S-UMW-3D-MS-1, S-UMW-3D-MSD-1, S-UMW-5D, S-UMW-6D

**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>04/22 - 05/18/2020</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:

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</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 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"/>	S-UMW-DUP-1 @ S-UMW-2D
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"/>	

Blind Standards	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name, analytes included and concentrations)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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:**

COC: All coolers out of temp had only radium; no dates were on the COC from 04/28/2020, dates were taken from containers; lab received volume for MS/MSD for sample S-UMW-3D, not UMW-1D as stated on COC. The time on sample S-UMW-3D-MS-1 is listed as 10:25, it should be 12:50.

Ferrous Iron was analyzed outside of hold time in all samples.

Sulfate and Chloride were diluted in several samples, no qualification necessary.

MB: 2644803: Boron (12.8 J), associated samples -63001, -63002, detection in S-BMW-1D > RL therefore no qualification necessary for this sample.



**QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST**

**Data Qualification:**

Sample Name	Constituent(s)	Result	Qualifier	Reason
S-BMW-3D	Ferrous Iron	0.11	J	Analyzed outside of hold time
S-BMW-1D	"	0.092	J	"
S-UMW-1D	"	0.035	UJ	Analyzed outside of hold time, non-detect
S-UMW-2D	"	0.035	UJ	"
S-UMW-3D	"	0.035	UJ	"
S-UMW-4D	"	2.0	J	Analyzed outside of hold time
S-UMW-DUP-1	"	0.035	UJ	Analyzed outside of hold time, non-detect
S-UMW-FB-1	"	0.035	UJ	"
S-UMW-5D	"	0.10	J	Analyzed outside of hold time
S-UMW-6D	"	0.072	J	"
S-BMW-3D	Boron	100	U	Detected in method blank
S-UMW-5D	Radium-228	-0.106 ± 0.346	UJ	"
S-UMW-2D	Mercury	0.058	UJ	Detected in DUP, non-detect in sample
S-UMW-DUP-1	"	0.059	J	"
S-UMW-2D	Radium-228	0.720 ± 0.452	UJ	"
S-UMW-DUP-1	"	0.996 ± 0.541	J	"
S-UMW-3D	Boron	30400	J	MS/MSD % recovery high
"	Calcium	254000	J	"

Signature: Ann Mulholland

Date: 06/29/2020

July 01, 2020

Jeffrey Ingram  
Golder Associates  
13515 Barrett Parkway Drive  
Suite 260  
Ballwin, MO 63021

RE: Project: AMEREN SCPA-VS  
Pace Project No.: 60340572

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory on June 19, 2020. 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

REV-1, 7/1/20: Sample ID correction

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



## 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 SCPA-VS

Pace Project No.: 60340572

---

### **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 #: 200030

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

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



## SAMPLE SUMMARY

Project: AMEREN SCPA-VS

Pace Project No.: 60340572

---

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60340572001	S-UMW-1D	Water	06/17/20 16:25	06/19/20 04:22
60340572002	S-SCPA-FB-1	Water	06/17/20 16:25	06/19/20 04:22
60340572003	S-SCPA-DUP-1	Water	06/17/20 08:00	06/19/20 04:22

## REPORT OF LABORATORY ANALYSIS

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

### SAMPLE ANALYTE COUNT

Project: AMEREN SCPA-VS

Pace Project No.: 60340572

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60340572001	S-UMW-1D	EPA 200.7	JDE	1	PASI-K
		EPA 300.0	JWR	1	PASI-K
60340572002	S-SCPA-FB-1	EPA 200.7	JDE	1	PASI-K
		EPA 300.0	JWR	1	PASI-K
60340572003	S-SCPA-DUP-1	EPA 200.7	JDE	1	PASI-K
		EPA 300.0	JWR	1	PASI-K

PASI-K = Pace Analytical Services - Kansas City

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SCPA-VS

Pace Project No.: 60340572

**Sample: S-UMW-1D**      **Lab ID: 60340572001**      Collected: 06/17/20 16:25      Received: 06/19/20 04:22      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Boron	<b>664</b>	ug/L	100	11.7	1	06/25/20 09:30	06/26/20 11:13	7440-42-8	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Sulfate	<b>43.9</b>	mg/L	5.0	1.4	5		06/23/20 12:20	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SCPA-VS

Pace Project No.: 60340572

---

**Sample: S-SCPA-FB-1**      **Lab ID: 60340572002**      Collected: 06/17/20 16:25      Received: 06/19/20 04:22      Matrix: Water

---

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>	Analytical Method: EPA 200.7    Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Boron	<b>&lt;11.7</b>	ug/L	100	11.7	1	06/25/20 09:30	06/26/20 11:20	7440-42-8	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Sulfate	<b>&lt;0.28</b>	mg/L	1.0	0.28	1		06/24/20 18:25	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SCPA-VS

Pace Project No.: 60340572

---

**Sample: S-SCPA-DUP-1**      **Lab ID: 60340572003**      Collected: 06/17/20 08:00      Received: 06/19/20 04:22      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>	Analytical Method: EPA 200.7    Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Boron	<b>652</b>	ug/L	100	11.7	1	06/25/20 09:30	06/26/20 11:23	7440-42-8	
<b>300.0 IC Anions 28 Days</b>	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Sulfate	<b>61.1</b>	mg/L	5.0	1.4	5		06/23/20 13:25	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### QUALITY CONTROL DATA

Project: AMEREN SCPA-VS

Pace Project No.: 60340572

QC Batch: 662054

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: 60340572001, 60340572002, 60340572003

METHOD BLANK: 2683637

Matrix: Water

Associated Lab Samples: 60340572001, 60340572002, 60340572003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	ug/L	<11.7	100	11.7	06/26/20 11:08	

LABORATORY CONTROL SAMPLE: 2683638

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	1000	1000	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2683639 2683640

Parameter	Units	60340572001		60340572002		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Boron	ug/L	664	1000	1000	1680	101	103	70-130	1	20	

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

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

**QUALITY CONTROL DATA**

Project: AMEREN SCPA-VS

Pace Project No.: 60340572

QC Batch:	661608	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:	60340572001, 60340572002, 60340572003		

METHOD BLANK: 2682113 Matrix: Water  
Associated Lab Samples: 60340572001, 60340572002, 60340572003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	<0.28	1.0	0.28	06/23/20 09:24	

METHOD BLANK: 2684011 Matrix: Water  
Associated Lab Samples: 60340572001, 60340572002, 60340572003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	<0.28	1.0	0.28	06/24/20 17:55	

LABORATORY CONTROL SAMPLE: 2682114

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	4.9	99	90-110	

LABORATORY CONTROL SAMPLE: 2684012

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	5.5	109	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2682115 2682116

Parameter	Units	2682115		2682116		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60340572001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Sulfate	mg/L	43.9	25	25	69.8	69.4	104	102	80-120	1	15

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2682117 2682118

Parameter	Units	2682117		2682118		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60340573001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Sulfate	mg/L	45.3	25	25	71.0	71.4	103	104	80-120	0	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**

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

### QUALITY CONTROL DATA

Project: AMEREN SCPA-VS

Pace Project No.: 60340572

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2682119 2682120												
Parameter	Units	60340574001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.								
Sulfate	mg/L	38.5	5	5	43.8	43.9	106	107	80-120	0	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

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



## QUALIFIERS

Project: AMEREN SCPA-VS

Pace Project No.: 60340572

---

### 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.

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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

### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA-VS

Pace Project No.: 60340572

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60340572001	S-UMW-1D	EPA 200.7	662054	EPA 200.7	662168
60340572002	S-SCPA-FB-1	EPA 200.7	662054	EPA 200.7	662168
60340572003	S-SCPA-DUP-1	EPA 200.7	662054	EPA 200.7	662168
60340572001	S-UMW-1D	EPA 300.0	661608		
60340572002	S-SCPA-FB-1	EPA 300.0	661608		
60340572003	S-SCPA-DUP-1	EPA 300.0	661608		

### REPORT OF LABORATORY ANALYSIS

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



Sample Condition Upon Receipt

WO#: 60340572



Client Name:

Golder 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 [x] No [ ] Seals intact: Yes [x] No [ ]

Packing Material: Bubble Wrap [ ] Bubble Bags [ ] Foam [ ] None [ ] Other [x] CPK

Thermometer Used: T209 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 0.9 Corr. Factor +0.1 Corrected 1.0

Date and initials of person examining contents: 06/19/2014

Temperature should be above freezing to 6°C

Table with 3 columns: Question, Yes/No/N/A checkboxes, and Notes. Rows include Chain of Custody, Short Hold Time, Rush Turn Around Time, Containers, and various sample handling checks.

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

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: Jami Church Date: 6/22/20

# CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 1

<b>Section A</b> 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	<b>Section B</b> Required Project Information: Report To: Jeffrey Ingram Copy To: Ryan Feldmann/Eric Schneider Purchase Order No.: SCA - VS Project Name: Ameren Project Number: 153140602	<b>Section C</b> Invoice Information: Attention: Company Name: REGULATORY AGENCY Address: NPDES: GROUND WATER UST: RCRA Site Location: MO STATE: MO Pace Quote Reference: Jamie Church Pace Project Manager: Jamie Church Pace Profile #: 9285
--	--	---

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WATER WW WASTE WATER WWP PRODUCT LIQUID SL SOLID OIL WV AR OT TS	SAMPLE TYPE (G-GRAB G-COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives		Requested Analysis Filtered (Y/N)				Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
			COMPOSITE START	DATE			TIME	DATE	TIME	Y	N	N		
1	S-VWWS-1D	G	6/17/20	1625		2	Unpreserved							
2	S-SCPA-FA-1	G	6/18	1325		1	H <sub>2</sub> SO <sub>4</sub>							
3	S-SCPA-DUP-1	G	6/18	1625		1	HNO <sub>3</sub>							
4	S-SCPA-MS-1	G	6/18	1625		1	Unpreserved							
5	S-SCPA-MSD-1	G	6/18	1625		1	HCl							
6		G				1	NaOH							
7		G				1	Na <sub>2</sub> O <sub>3</sub>							
8		G				1	Methanol							
9		G				1	Other							
10		G				1	Analysis Test ↑							
11		G				1	200.7 Calcium							
12		G				1	Fluoride							
						1	Sulfate							
						1	TDS							
						1								

*Handwritten notes: 200.7 Reson, X 200.7 Reson, S-VWWS-1D-MS-1, S-UNWWS-1D-MSD-1*

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Amey Loh	6/18/20	1320	Amey Ingram	6/18	1305	
	Amey Loh	6/18	1325	Amey Ingram	6/18	1305	
				Amey Ingram	6/18	1305	

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: Eric Schneider SIGNATURE of SAMPLER: <i>[Signature]</i> DATE Signed (MM/DD/YYYY): 06/18/20			



**GOLDER**

**MEMORANDUM**

**DATE** July 1, 2020

**Project No.** 153140602

**TO** Project File  
Golder Associates

**CC** Amanda Derhake, Jeff Ingram

**FROM** Annie Muehlfarth

**EMAIL** [AMuehlfarth@golder.com](mailto:AMuehlfarth@golder.com)

**DATA VALIDATION SUMMARY, SIOUX ENERGY CENTER – SCPA-VS – VERIFICATION SAMPLING -  
DATA PACKAGE 60340572, REV-1**

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).

## QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates Inc.  
 Project Name: Ameren - SEC - SCPA-VS  
 Reviewer: A. Muehlfarth

Project Manager: J. Ingram  
 Project Number: 153140602  
 Validation Date: 07/01/2020

Laboratory: Pace Analytical SDG #: 60340572 rev1  
 Analytical Method (type and no.): PA 200.7 (Total Metals); EPA 300.0 (Anions)  
 Matrix:  Air  Soil/Sed.  Water  Waste   
 Sample Names S-UMW-1D, S-SCPA-FB-1, S-SCPA-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>06/17/2020</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: The data packet was revised 07/01/2020 to correct a sample name.

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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>

## QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

<b>Blanks</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
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"/>	_____
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"/>	_____

<b>Laboratory Control Sample (LCS)</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
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"/>	_____

<b>Duplicates</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Were field duplicates collected (note original and duplicate sample names)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
				S-SCPA-DUP-1 @ S-VMW-1D
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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
d) Were lab dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____

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

<b>Matrix Spike/Matrix Spike Duplicate (MS/MSD)</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
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:**

\_\_\_\_\_

Sulfate diluted in some samples, no qualification necessary.

\_\_\_\_\_

S-SCPA-FB-1 @ S-UMW-1D

\_\_\_\_\_

DUP: S-SCPA-DUP-1: RPD exceeds limit (>20%) for Sulfate

\_\_\_\_\_

\_\_\_\_\_

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
S-UMW-1D	Sulfate	43.9	J	DUP RPD exceeds limit
S-SCPA-DUP-1	Sulfate	61.1	J	"
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				
<hr/>				

Signature: Ann M. [Signature]

Date: 07/01/2020



July 20, 2020

Jeffrey Ingram  
Golder Associates  
13515 Barrett Parkway Drive  
Suite 260  
Ballwin, MO 63021

RE: Project: AMEREN SIOUX ENERGY SCPA-CA  
Pace Project No.: 60340199

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory between June 17, 2020 and June 19, 2020. 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



## 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 SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

---

### **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 #: 9526

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 #: 200030

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

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

## SAMPLE SUMMARY

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60340199001	S-BMW-1S	Water	06/16/20 09:21	06/17/20 04:48
60340199002	S-BMW-3S	Water	06/16/20 10:10	06/17/20 04:48
60340199003	S-LMW-2S	Water	06/16/20 14:32	06/17/20 04:48
60340199004	S-LMW-4S	Water	06/16/20 14:45	06/17/20 04:48
60340199005	S-AM-1S	Water	06/16/20 09:25	06/17/20 04:48
60340199006	S-AM-1D	Water	06/16/20 16:15	06/17/20 04:48
60340199007	S-TP-4D	Water	06/16/20 10:35	06/17/20 04:48
60340199008	S-TP-5D	Water	06/16/20 12:31	06/17/20 04:48
60340199009	S-TP-6S	Water	06/16/20 11:00	06/17/20 04:48
60340199010	S-TP-6D	Water	06/16/20 12:00	06/17/20 04:48
60340199011	S-TP-8D	Water	06/16/20 13:45	06/17/20 04:48
60340199012	S-UG-3	Water	06/16/20 11:31	06/17/20 04:48
60340199013	S-CA-DUP-1	Water	06/16/20 08:00	06/17/20 04:48
60340199014	S-CA-DUP-2	Water	06/16/20 08:00	06/17/20 04:48
60340199015	S-CA-FB-1	Water	06/16/20 10:50	06/17/20 04:48
60340199016	S-CA-TP-6D-MS	Water	06/16/20 12:00	06/17/20 04:48
60340199017	S-CA-TP-6D-MSD	Water	06/16/20 12:00	06/17/20 04:48
60340199018	S-LMW-1S	Water	06/17/20 15:55	06/19/20 04:22
60340199019	S-LMW-5S	Water	06/17/20 09:45	06/19/20 04:22
60340199020	S-LMW-6S	Water	06/17/20 12:00	06/19/20 04:22
60340199021	S-PZ-1S	Water	06/18/20 10:30	06/19/20 04:22
60340199022	S-PZ-9D	Water	06/17/20 11:05	06/19/20 04:22
60340199023	S-TP-2D	Water	06/18/20 09:55	06/19/20 04:22
60340199024	S-TP-3D	Water	06/18/20 11:50	06/19/20 04:22
60340199025	S-CA-FB-2	Water	06/17/20 10:05	06/19/20 04:22

## REPORT OF LABORATORY ANALYSIS

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

### SAMPLE ANALYTE COUNT

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60340199001	S-BMW-1S	EPA 200.7	JDE	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
60340199002	S-BMW-3S	EPA 200.7	JDE	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
60340199003	S-LMW-2S	EPA 200.7	JDE	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
60340199004	S-LMW-4S	EPA 200.7	JDE	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
60340199005	S-AM-1S	EPA 200.7	JDE	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
60340199006	S-AM-1D	EPA 200.7	JDE	12	PASI-K
		EPA 200.8	JGP	3	PASI-K

### REPORT OF LABORATORY ANALYSIS

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

### SAMPLE ANALYTE COUNT

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60340199007	S-TP-4D	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
		EPA 200.7	JDE	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
60340199008	S-TP-5D	SM 2540C	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
		EPA 200.7	JDE	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
		EPA 200.7	JDE	12	PASI-K
60340199009	S-TP-6S	EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
		EPA 200.7	JDE	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60340199010	S-TP-6D	SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
		EPA 200.7	JDE	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
60340199011	S-TP-8D	EPA 200.7	JDE	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA

### REPORT OF LABORATORY ANALYSIS

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

### SAMPLE ANALYTE COUNT

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60340199012	S-UG-3	SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
		EPA 200.7	JDE	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
60340199013	S-CA-DUP-1	SM 2540C	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
		EPA 200.7	JDE	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
60340199014	S-CA-DUP-2	EPA 300.0	JWR	3	PASI-K
		EPA 200.7	JDE	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
60340199015	S-CA-FB-1	EPA 200.7	JDE	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
		EPA 200.7	JDE	12	PASI-K
60340199016	S-CA-TP-6D-MS	EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60340199017	S-CA-TP-6D-MSD	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60340199018	S-LMW-1S	EPA 200.7	JDE	12	PASI-K
		EPA 200.8	JGP	3	PASI-K

### REPORT OF LABORATORY ANALYSIS

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

### SAMPLE ANALYTE COUNT

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60340199019	S-LMW-5S	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
		EPA 200.7	JDE	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
60340199020	S-LMW-6S	SM 2540C	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
		EPA 200.7	JDE	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
		EPA 200.7	JDE	12	PASI-K
60340199021	S-PZ-1S	EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
		EPA 200.7	JDE	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60340199022	S-PZ-9D	SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
		EPA 200.7	JDE	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
60340199023	S-TP-2D	EPA 200.7	JDE	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA

### REPORT OF LABORATORY ANALYSIS

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

### SAMPLE ANALYTE COUNT

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60340199024	S-TP-3D	SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K
		EPA 200.7	JDE	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
60340199025	S-CA-FB-2	EPA 300.0	JWR	3	PASI-K
		EPA 200.7	JDE	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	MGS	1	PASI-K
		SM 2540C	CNB	1	PASI-K
		EPA 300.0	JWR	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City

PASI-PA = Pace Analytical Services - Greensburg

### REPORT OF LABORATORY ANALYSIS

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



## ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-BMW-1S**      **Lab ID: 60340199001**      Collected: 06/16/20 09:21      Received: 06/17/20 04:48      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>147</b>	ug/L	5.0	1.8	1	07/06/20 16:51	07/07/20 12:53	7440-39-3	
Boron	<b>66.1J</b>	ug/L	100	11.7	1	07/06/20 16:51	07/07/20 12:53	7440-42-8	
Calcium	<b>149000</b>	ug/L	200	32.4	1	07/06/20 16:51	07/07/20 12:53	7440-70-2	
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	07/06/20 16:51	07/07/20 12:53	7440-48-4	
Iron	<b>81.9</b>	ug/L	50.0	26.8	1	07/06/20 16:51	07/07/20 12:53	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 12:53	7439-92-1	
Lithium	<b>7.3J</b>	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 12:53	7439-93-2	
Magnesium	<b>29900</b>	ug/L	50.0	19.7	1	07/06/20 16:51	07/07/20 12:53	7439-95-4	
Manganese	<b>848</b>	ug/L	5.0	0.97	1	07/06/20 16:51	07/07/20 12:53	7439-96-5	
Molybdenum	<b>2.5J</b>	ug/L	20.0	1.7	1	07/06/20 16:51	07/07/20 12:53	7439-98-7	
Potassium	<b>389J</b>	ug/L	500	189	1	07/06/20 16:51	07/07/20 12:53	7440-09-7	
Sodium	<b>4990</b>	ug/L	500	107	1	07/06/20 16:51	07/07/20 12:53	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>1.1</b>	ug/L	1.0	0.086	1	06/30/20 09:07	07/01/20 12:29	7440-38-2	
Cadmium	<b>0.11J</b>	ug/L	0.50	0.056	1	06/30/20 09:07	07/01/20 12:29	7440-43-9	
Selenium	<b>0.37J</b>	ug/L	1.0	0.18	1	06/30/20 09:07	07/01/20 12:29	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>424</b>	mg/L	20.0	8.4	1		06/24/20 12:21		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>543</b>	mg/L	10.0	10.0	1		06/18/20 09:31		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>7.9</b>	mg/L	1.0	0.39	1		06/19/20 01:12	16887-00-6	
Fluoride	<b>0.33</b>	mg/L	0.20	0.075	1		06/19/20 01:12	16984-48-8	
Sulfate	<b>28.1</b>	mg/L	2.0	0.56	2		06/19/20 14:04	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-BMW-3S**      **Lab ID: 60340199002**      Collected: 06/16/20 10:10      Received: 06/17/20 04:48      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City									
Barium	<b>122</b>	ug/L	5.0	1.8	1	07/06/20 16:51	07/07/20 12:55	7440-39-3	
Boron	<b>71.9J</b>	ug/L	100	11.7	1	07/06/20 16:51	07/07/20 12:55	7440-42-8	
Calcium	<b>131000</b>	ug/L	200	32.4	1	07/06/20 16:51	07/07/20 12:55	7440-70-2	
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	07/06/20 16:51	07/07/20 12:55	7440-48-4	
Iron	<b>&lt;26.8</b>	ug/L	50.0	26.8	1	07/06/20 16:51	07/07/20 12:55	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 12:55	7439-92-1	
Lithium	<b>10.3</b>	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 12:55	7439-93-2	
Magnesium	<b>24900</b>	ug/L	50.0	19.7	1	07/06/20 16:51	07/07/20 12:55	7439-95-4	
Manganese	<b>336</b>	ug/L	5.0	0.97	1	07/06/20 16:51	07/07/20 12:55	7439-96-5	
Molybdenum	<b>2.1J</b>	ug/L	20.0	1.7	1	07/06/20 16:51	07/07/20 12:55	7439-98-7	
Potassium	<b>521</b>	ug/L	500	189	1	07/06/20 16:51	07/07/20 12:55	7440-09-7	
Sodium	<b>5620</b>	ug/L	500	107	1	07/06/20 16:51	07/07/20 12:55	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City									
Arsenic	<b>0.62J</b>	ug/L	1.0	0.086	1	06/30/20 09:07	07/01/20 12:31	7440-38-2	
Cadmium	<b>&lt;0.056</b>	ug/L	0.50	0.056	1	06/30/20 09:07	07/01/20 12:31	7440-43-9	
Selenium	<b>0.35J</b>	ug/L	1.0	0.18	1	06/30/20 09:07	07/01/20 12:31	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>389</b>	mg/L	20.0	8.4	1		06/24/20 12:26		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>458</b>	mg/L	10.0	10.0	1		06/18/20 09:31		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City									
Chloride	<b>12.3</b>	mg/L	1.0	0.39	1		06/19/20 01:56	16887-00-6	
Fluoride	<b>0.36</b>	mg/L	0.20	0.075	1		06/19/20 01:56	16984-48-8	
Sulfate	<b>31.1</b>	mg/L	2.0	0.56	2		06/19/20 14:19	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-LMW-2S**      **Lab ID: 60340199003**      Collected: 06/16/20 14:32      Received: 06/17/20 04:48      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>104</b>	ug/L	5.0	1.8	1	07/06/20 16:51	07/07/20 12:58	7440-39-3	
Boron	<b>11400</b>	ug/L	100	11.7	1	07/06/20 16:51	07/07/20 12:58	7440-42-8	
Calcium	<b>170000</b>	ug/L	200	32.4	1	07/06/20 16:51	07/07/20 12:58	7440-70-2	M1
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	07/06/20 16:51	07/07/20 12:58	7440-48-4	
Iron	<b>&lt;26.8</b>	ug/L	50.0	26.8	1	07/06/20 16:51	07/07/20 12:58	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 12:58	7439-92-1	
Lithium	<b>34.9</b>	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 12:58	7439-93-2	
Magnesium	<b>28200</b>	ug/L	50.0	19.7	1	07/06/20 16:51	07/07/20 12:58	7439-95-4	
Manganese	<b>87.1</b>	ug/L	5.0	0.97	1	07/06/20 16:51	07/07/20 12:58	7439-96-5	
Molybdenum	<b>1170</b>	ug/L	20.0	1.7	1	07/06/20 16:51	07/07/20 12:58	7439-98-7	
Potassium	<b>8570</b>	ug/L	500	189	1	07/06/20 16:51	07/07/20 12:58	7440-09-7	
Sodium	<b>65700</b>	ug/L	500	107	1	07/06/20 16:51	07/07/20 12:58	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>0.95J</b>	ug/L	1.0	0.086	1	06/30/20 09:07	07/01/20 12:33	7440-38-2	
Cadmium	<b>0.45J</b>	ug/L	0.50	0.056	1	06/30/20 09:07	07/01/20 12:33	7440-43-9	
Selenium	<b>&lt;0.18</b>	ug/L	1.0	0.18	1	06/30/20 09:07	07/01/20 12:33	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>240</b>	mg/L	20.0	8.4	1		06/24/20 12:32		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>871</b>	mg/L	10.0	10.0	1		06/18/20 09:31		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>62.6</b>	mg/L	10.0	3.9	10		06/19/20 15:07	16887-00-6	
Fluoride	<b>0.37</b>	mg/L	0.20	0.075	1		06/19/20 02:10	16984-48-8	
Sulfate	<b>304</b>	mg/L	50.0	13.9	50		06/19/20 15:23	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-LMW-4S**      **Lab ID: 60340199004**      Collected: 06/16/20 14:45      Received: 06/17/20 04:48      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>213</b>	ug/L	5.0	1.8	1	07/06/20 16:51	07/07/20 13:10	7440-39-3	
Boron	<b>3050</b>	ug/L	100	11.7	1	07/06/20 16:51	07/07/20 13:10	7440-42-8	
Calcium	<b>176000</b>	ug/L	200	32.4	1	07/06/20 16:51	07/07/20 13:10	7440-70-2	
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	07/06/20 16:51	07/07/20 13:10	7440-48-4	
Iron	<b>35.3J</b>	ug/L	50.0	26.8	1	07/06/20 16:51	07/07/20 13:10	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 13:10	7439-92-1	
Lithium	<b>32.7</b>	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 13:10	7439-93-2	
Magnesium	<b>38200</b>	ug/L	50.0	19.7	1	07/06/20 16:51	07/07/20 13:10	7439-95-4	
Manganese	<b>50.7</b>	ug/L	5.0	0.97	1	07/06/20 16:51	07/07/20 13:10	7439-96-5	
Molybdenum	<b>3.2J</b>	ug/L	20.0	1.7	1	07/06/20 16:51	07/07/20 13:10	7439-98-7	
Potassium	<b>4580</b>	ug/L	500	189	1	07/06/20 16:51	07/07/20 13:10	7440-09-7	
Sodium	<b>17900</b>	ug/L	500	107	1	07/06/20 16:51	07/07/20 13:10	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>0.71J</b>	ug/L	1.0	0.086	1	06/30/20 09:07	07/01/20 12:38	7440-38-2	
Cadmium	<b>0.10J</b>	ug/L	0.50	0.056	1	06/30/20 09:07	07/01/20 12:38	7440-43-9	
Selenium	<b>0.30J</b>	ug/L	1.0	0.18	1	06/30/20 09:07	07/01/20 12:38	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>486</b>	mg/L	20.0	8.4	1		06/24/20 12:56		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>730</b>	mg/L	10.0	10.0	1		06/18/20 09:31		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>19.9</b>	mg/L	2.0	0.78	2		06/19/20 15:39	16887-00-6	
Fluoride	<b>0.23</b>	mg/L	0.20	0.075	1		06/19/20 02:25	16984-48-8	
Sulfate	<b>145</b>	mg/L	20.0	5.6	20		06/19/20 15:55	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-AM-1S**      **Lab ID: 60340199005**      Collected: 06/16/20 09:25      Received: 06/17/20 04:48      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>133</b>	ug/L	5.0	1.8	1	07/06/20 16:51	07/07/20 13:13	7440-39-3	
Boron	<b>9620</b>	ug/L	100	11.7	1	07/06/20 16:51	07/07/20 13:13	7440-42-8	
Calcium	<b>80700</b>	ug/L	200	32.4	1	07/06/20 16:51	07/07/20 13:13	7440-70-2	
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	07/06/20 16:51	07/07/20 13:13	7440-48-4	
Iron	<b>2610</b>	ug/L	50.0	26.8	1	07/06/20 16:51	07/07/20 13:13	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 13:13	7439-92-1	
Lithium	<b>36.6</b>	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 13:13	7439-93-2	
Magnesium	<b>18200</b>	ug/L	50.0	19.7	1	07/06/20 16:51	07/07/20 13:13	7439-95-4	
Manganese	<b>535</b>	ug/L	5.0	0.97	1	07/06/20 16:51	07/07/20 13:13	7439-96-5	
Molybdenum	<b>308</b>	ug/L	20.0	1.7	1	07/06/20 16:51	07/07/20 13:13	7439-98-7	
Potassium	<b>7240</b>	ug/L	500	189	1	07/06/20 16:51	07/07/20 13:13	7440-09-7	
Sodium	<b>23700</b>	ug/L	500	107	1	07/06/20 16:51	07/07/20 13:13	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>1.3</b>	ug/L	1.0	0.086	1	06/30/20 09:07	07/01/20 12:40	7440-38-2	
Cadmium	<b>0.062J</b>	ug/L	0.50	0.056	1	06/30/20 09:07	07/01/20 12:40	7440-43-9	
Selenium	<b>&lt;0.18</b>	ug/L	1.0	0.18	1	06/30/20 09:07	07/01/20 12:40	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>238</b>	mg/L	20.0	8.4	1		06/24/20 13:00		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>411</b>	mg/L	5.0	5.0	1		06/18/20 09:31		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>26.1</b>	mg/L	2.0	0.78	2		06/19/20 16:10	16887-00-6	
Fluoride	<b>0.49</b>	mg/L	0.20	0.075	1		06/19/20 02:40	16984-48-8	
Sulfate	<b>62.3</b>	mg/L	10.0	2.8	10		06/19/20 16:42	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

Sample: S-AM-1D Lab ID: 60340199006 Collected: 06/16/20 16:15 Received: 06/17/20 04:48 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	231	ug/L	5.0	1.8	1	07/06/20 16:51	07/07/20 13:15	7440-39-3	
Boron	7210	ug/L	100	11.7	1	07/06/20 16:51	07/07/20 13:15	7440-42-8	
Calcium	76100	ug/L	200	32.4	1	07/06/20 16:51	07/07/20 13:15	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	07/06/20 16:51	07/07/20 13:15	7440-48-4	
Iron	3180	ug/L	50.0	26.8	1	07/06/20 16:51	07/07/20 13:15	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 13:15	7439-92-1	
Lithium	36.3	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 13:15	7439-93-2	
Magnesium	16800	ug/L	50.0	19.7	1	07/06/20 16:51	07/07/20 13:15	7439-95-4	
Manganese	366	ug/L	5.0	0.97	1	07/06/20 16:51	07/07/20 13:15	7439-96-5	
Molybdenum	588	ug/L	20.0	1.7	1	07/06/20 16:51	07/07/20 13:15	7439-98-7	
Potassium	7420	ug/L	500	189	1	07/06/20 16:51	07/07/20 13:15	7440-09-7	
Sodium	23000	ug/L	500	107	1	07/06/20 16:51	07/07/20 13:15	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	0.23J	ug/L	1.0	0.086	1	06/30/20 09:07	07/01/20 12:42	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	06/30/20 09:07	07/01/20 12:42	7440-43-9	
Selenium	<0.18	ug/L	1.0	0.18	1	06/30/20 09:07	07/01/20 12:42	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	208	mg/L	20.0	8.4	1		06/24/20 13:06		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	414	mg/L	5.0	5.0	1		06/18/20 09:31		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	25.8	mg/L	10.0	3.9	10		06/22/20 17:09	16887-00-6	B
Fluoride	0.62	mg/L	0.20	0.075	1		06/22/20 16:52	16984-48-8	
Sulfate	72.5	mg/L	10.0	2.8	10		06/22/20 17:09	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-TP-4D**      **Lab ID: 60340199007**      Collected: 06/16/20 10:35      Received: 06/17/20 04:48      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	520	ug/L	5.0	1.8	1	07/06/20 16:51	07/07/20 13:18	7440-39-3	
Boron	78.1J	ug/L	100	11.7	1	07/06/20 16:51	07/07/20 13:18	7440-42-8	
Calcium	109000	ug/L	200	32.4	1	07/06/20 16:51	07/07/20 13:18	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	07/06/20 16:51	07/07/20 13:18	7440-48-4	
Iron	6800	ug/L	50.0	26.8	1	07/06/20 16:51	07/07/20 13:18	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 13:18	7439-92-1	
Lithium	32.8	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 13:18	7439-93-2	
Magnesium	27100	ug/L	50.0	19.7	1	07/06/20 16:51	07/07/20 13:18	7439-95-4	
Manganese	489	ug/L	5.0	0.97	1	07/06/20 16:51	07/07/20 13:18	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	07/06/20 16:51	07/07/20 13:18	7439-98-7	
Potassium	3360	ug/L	500	189	1	07/06/20 16:51	07/07/20 13:18	7440-09-7	
Sodium	7410	ug/L	500	107	1	07/06/20 16:51	07/07/20 13:18	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	1.5	ug/L	1.0	0.086	1	06/30/20 09:07	07/01/20 12:47	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	06/30/20 09:07	07/01/20 12:47	7440-43-9	
Selenium	<0.18	ug/L	1.0	0.18	1	06/30/20 09:07	07/01/20 12:47	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	274	mg/L	20.0	8.4	1		06/24/20 13:10		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	488	mg/L	10.0	10.0	1		06/18/20 09:31		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	9.1	mg/L	1.0	0.39	1		06/22/20 17:25	16887-00-6	
Fluoride	0.30	mg/L	0.20	0.075	1		06/22/20 17:25	16984-48-8	
Sulfate	102	mg/L	10.0	2.8	10		06/22/20 18:15	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-TP-5D**      **Lab ID: 60340199008**      Collected: 06/16/20 12:31      Received: 06/17/20 04:48      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>138</b>	ug/L	5.0	1.8	1	07/06/20 16:51	07/07/20 13:20	7440-39-3	
Boron	<b>6980</b>	ug/L	100	11.7	1	07/06/20 16:51	07/07/20 13:20	7440-42-8	
Calcium	<b>113000</b>	ug/L	200	32.4	1	07/06/20 16:51	07/07/20 13:20	7440-70-2	
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	07/06/20 16:51	07/07/20 13:20	7440-48-4	
Iron	<b>8140</b>	ug/L	50.0	26.8	1	07/06/20 16:51	07/07/20 13:20	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 13:20	7439-92-1	
Lithium	<b>31.7</b>	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 13:20	7439-93-2	
Magnesium	<b>30100</b>	ug/L	50.0	19.7	1	07/06/20 16:51	07/07/20 13:20	7439-95-4	
Manganese	<b>908</b>	ug/L	5.0	0.97	1	07/06/20 16:51	07/07/20 13:20	7439-96-5	
Molybdenum	<b>171</b>	ug/L	20.0	1.7	1	07/06/20 16:51	07/07/20 13:20	7439-98-7	
Potassium	<b>4420</b>	ug/L	500	189	1	07/06/20 16:51	07/07/20 13:20	7440-09-7	
Sodium	<b>22400</b>	ug/L	500	107	1	07/06/20 16:51	07/07/20 13:20	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>0.24J</b>	ug/L	1.0	0.086	1	06/30/20 09:07	07/01/20 12:49	7440-38-2	
Cadmium	<b>&lt;0.056</b>	ug/L	0.50	0.056	1	06/30/20 09:07	07/01/20 12:49	7440-43-9	
Selenium	<b>&lt;0.18</b>	ug/L	1.0	0.18	1	06/30/20 09:07	07/01/20 12:49	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>176</b>	mg/L	20.0	8.4	1		06/24/20 13:15		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>612</b>	mg/L	10.0	10.0	1		06/18/20 09:31		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>26.2</b>	mg/L	2.0	0.78	2		06/22/20 18:48	16887-00-6	
Fluoride	<b>0.42</b>	mg/L	0.20	0.075	1		06/22/20 18:31	16984-48-8	
Sulfate	<b>227</b>	mg/L	20.0	5.6	20		06/22/20 19:05	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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



## ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-TP-6S**      **Lab ID: 60340199009**      Collected: 06/16/20 11:00      Received: 06/17/20 04:48      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>266</b>	ug/L	5.0	1.8	1	07/06/20 16:51	07/07/20 13:23	7440-39-3	
Boron	<b>118</b>	ug/L	100	11.7	1	07/06/20 16:51	07/07/20 13:23	7440-42-8	
Calcium	<b>132000</b>	ug/L	200	32.4	1	07/06/20 16:51	07/07/20 13:23	7440-70-2	
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	07/06/20 16:51	07/07/20 13:23	7440-48-4	
Iron	<b>&lt;26.8</b>	ug/L	50.0	26.8	1	07/06/20 16:51	07/07/20 13:23	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 13:23	7439-92-1	
Lithium	<b>38.1</b>	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 13:23	7439-93-2	
Magnesium	<b>29600</b>	ug/L	50.0	19.7	1	07/06/20 16:51	07/07/20 13:23	7439-95-4	
Manganese	<b>295</b>	ug/L	5.0	0.97	1	07/06/20 16:51	07/07/20 13:23	7439-96-5	
Molybdenum	<b>3.4J</b>	ug/L	20.0	1.7	1	07/06/20 16:51	07/07/20 13:23	7439-98-7	
Potassium	<b>2630</b>	ug/L	500	189	1	07/06/20 16:51	07/07/20 13:23	7440-09-7	
Sodium	<b>9540</b>	ug/L	500	107	1	07/06/20 16:51	07/07/20 13:23	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>0.49J</b>	ug/L	1.0	0.086	1	06/30/20 09:07	07/01/20 13:31	7440-38-2	
Cadmium	<b>0.058J</b>	ug/L	0.50	0.056	1	06/30/20 09:07	07/01/20 13:31	7440-43-9	
Selenium	<b>0.29J</b>	ug/L	1.0	0.18	1	06/30/20 09:07	07/01/20 13:31	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>389</b>	mg/L	20.0	8.4	1		06/24/20 13:22		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>504</b>	mg/L	10.0	10.0	1		06/18/20 09:31		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>9.5</b>	mg/L	1.0	0.39	1		06/22/20 19:21	16887-00-6	
Fluoride	<b>0.36</b>	mg/L	0.20	0.075	1		06/22/20 19:21	16984-48-8	
Sulfate	<b>41.5</b>	mg/L	5.0	1.4	5		06/22/20 19:38	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

Sample: S-TP-6D Lab ID: 60340199010 Collected: 06/16/20 12:00 Received: 06/17/20 04:48 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	400	ug/L	5.0	1.8	1	07/06/20 16:51	07/07/20 13:25	7440-39-3	
Boron	79.1J	ug/L	100	11.7	1	07/06/20 16:51	07/07/20 13:25	7440-42-8	
Calcium	112000	ug/L	200	32.4	1	07/06/20 16:51	07/07/20 13:25	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	07/06/20 16:51	07/07/20 13:25	7440-48-4	
Iron	7700	ug/L	50.0	26.8	1	07/06/20 16:51	07/07/20 13:25	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 13:25	7439-92-1	
Lithium	30.7	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 13:25	7439-93-2	
Magnesium	30200	ug/L	50.0	19.7	1	07/06/20 16:51	07/07/20 13:25	7439-95-4	
Manganese	486	ug/L	5.0	0.97	1	07/06/20 16:51	07/07/20 13:25	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	07/06/20 16:51	07/07/20 13:25	7439-98-7	
Potassium	3810	ug/L	500	189	1	07/06/20 16:51	07/07/20 13:25	7440-09-7	
Sodium	5890	ug/L	500	107	1	07/06/20 16:51	07/07/20 13:25	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	0.17J	ug/L	1.0	0.086	1	06/30/20 09:07	07/01/20 12:53	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	06/30/20 09:07	07/01/20 12:53	7440-43-9	
Selenium	<0.18	ug/L	1.0	0.18	1	06/30/20 09:07	07/01/20 12:53	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	339	mg/L	20.0	8.4	1		06/24/20 13:27		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	470	mg/L	10.0	10.0	1		06/18/20 09:31		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	12.8	mg/L	1.0	0.39	1		06/22/20 19:54	16887-00-6	
Fluoride	0.32	mg/L	0.20	0.075	1		06/22/20 19:54	16984-48-8	
Sulfate	66.0	mg/L	5.0	1.4	5		06/22/20 20:44	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-TP-8D**      **Lab ID: 60340199011**      Collected: 06/16/20 13:45      Received: 06/17/20 04:48      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	311	ug/L	5.0	1.8	1	07/06/20 16:51	07/07/20 13:35	7440-39-3	
Boron	76.9J	ug/L	100	11.7	1	07/06/20 16:51	07/07/20 13:35	7440-42-8	
Calcium	96600	ug/L	200	32.4	1	07/06/20 16:51	07/07/20 13:35	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	07/06/20 16:51	07/07/20 13:35	7440-48-4	
Iron	5370	ug/L	50.0	26.8	1	07/06/20 16:51	07/07/20 13:35	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 13:35	7439-92-1	
Lithium	32.5	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 13:35	7439-93-2	
Magnesium	22300	ug/L	50.0	19.7	1	07/06/20 16:51	07/07/20 13:35	7439-95-4	
Manganese	369	ug/L	5.0	0.97	1	07/06/20 16:51	07/07/20 13:35	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	07/06/20 16:51	07/07/20 13:35	7439-98-7	
Potassium	3670	ug/L	500	189	1	07/06/20 16:51	07/07/20 13:35	7440-09-7	
Sodium	4960	ug/L	500	107	1	07/06/20 16:51	07/07/20 13:35	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	1.6	ug/L	1.0	0.086	1	06/30/20 09:07	07/01/20 12:58	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	06/30/20 09:07	07/01/20 12:58	7440-43-9	
Selenium	<0.18	ug/L	1.0	0.18	1	06/30/20 09:07	07/01/20 12:58	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	293	mg/L	20.0	8.4	1		06/24/20 13:38		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	396	mg/L	5.0	5.0	1		06/18/20 09:32		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	9.7	mg/L	1.0	0.39	1		06/22/20 22:07	16887-00-6	
Fluoride	0.36	mg/L	0.20	0.075	1		06/22/20 22:07	16984-48-8	
Sulfate	36.9	mg/L	5.0	1.4	5		06/22/20 22:23	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-UG-3**      **Lab ID: 60340199012**      Collected: 06/16/20 11:31      Received: 06/17/20 04:48      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>243</b>	ug/L	5.0	1.8	1	07/06/20 16:51	07/07/20 13:37	7440-39-3	
Boron	<b>930</b>	ug/L	100	11.7	1	07/06/20 16:51	07/07/20 13:37	7440-42-8	
Calcium	<b>150000</b>	ug/L	200	32.4	1	07/06/20 16:51	07/07/20 13:37	7440-70-2	
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	07/06/20 16:51	07/07/20 13:37	7440-48-4	
Iron	<b>&lt;26.8</b>	ug/L	50.0	26.8	1	07/06/20 16:51	07/07/20 13:37	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 13:37	7439-92-1	
Lithium	<b>36.8</b>	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 13:37	7439-93-2	
Magnesium	<b>31600</b>	ug/L	50.0	19.7	1	07/06/20 16:51	07/07/20 13:37	7439-95-4	
Manganese	<b>644</b>	ug/L	5.0	0.97	1	07/06/20 16:51	07/07/20 13:37	7439-96-5	
Molybdenum	<b>2.3J</b>	ug/L	20.0	1.7	1	07/06/20 16:51	07/07/20 13:37	7439-98-7	
Potassium	<b>6140</b>	ug/L	500	189	1	07/06/20 16:51	07/07/20 13:37	7440-09-7	
Sodium	<b>26400</b>	ug/L	500	107	1	07/06/20 16:51	07/07/20 13:37	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>0.45J</b>	ug/L	1.0	0.086	1	06/30/20 09:07	07/01/20 13:33	7440-38-2	
Cadmium	<b>0.38J</b>	ug/L	0.50	0.056	1	06/30/20 09:07	07/01/20 13:33	7440-43-9	
Selenium	<b>0.57J</b>	ug/L	1.0	0.18	1	06/30/20 09:07	07/01/20 13:33	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>334</b>	mg/L	20.0	8.4	1		06/24/20 13:43		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>663</b>	mg/L	10.0	10.0	1		06/18/20 09:32		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>83.6</b>	mg/L	5.0	1.9	5		06/22/20 22:56	16887-00-6	
Fluoride	<b>0.38</b>	mg/L	0.20	0.075	1		06/22/20 22:40	16984-48-8	
Sulfate	<b>114</b>	mg/L	10.0	2.8	10		06/23/20 20:12	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-CA-DUP-1**      **Lab ID: 60340199013**      Collected: 06/16/20 08:00      Received: 06/17/20 04:48      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>269</b>	ug/L	5.0	1.8	1	07/06/20 16:51	07/07/20 13:40	7440-39-3	
Boron	<b>102</b>	ug/L	100	11.7	1	07/06/20 16:51	07/07/20 13:40	7440-42-8	
Calcium	<b>133000</b>	ug/L	200	32.4	1	07/06/20 16:51	07/07/20 13:40	7440-70-2	
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	07/06/20 16:51	07/07/20 13:40	7440-48-4	
Iron	<b>&lt;26.8</b>	ug/L	50.0	26.8	1	07/06/20 16:51	07/07/20 13:40	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 13:40	7439-92-1	
Lithium	<b>38.5</b>	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 13:40	7439-93-2	
Magnesium	<b>30200</b>	ug/L	50.0	19.7	1	07/06/20 16:51	07/07/20 13:40	7439-95-4	
Manganese	<b>301</b>	ug/L	5.0	0.97	1	07/06/20 16:51	07/07/20 13:40	7439-96-5	
Molybdenum	<b>3.2J</b>	ug/L	20.0	1.7	1	07/06/20 16:51	07/07/20 13:40	7439-98-7	
Potassium	<b>2620</b>	ug/L	500	189	1	07/06/20 16:51	07/07/20 13:40	7440-09-7	
Sodium	<b>9490</b>	ug/L	500	107	1	07/06/20 16:51	07/07/20 13:40	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>0.51J</b>	ug/L	1.0	0.086	1	06/30/20 09:07	07/01/20 13:02	7440-38-2	
Cadmium	<b>0.060J</b>	ug/L	0.50	0.056	1	06/30/20 09:07	07/01/20 13:02	7440-43-9	
Selenium	<b>0.36J</b>	ug/L	1.0	0.18	1	06/30/20 09:07	07/01/20 13:02	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>400</b>	mg/L	20.0	8.4	1		06/24/20 13:57		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>493</b>	mg/L	10.0	10.0	1		06/22/20 14:36		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>9.5</b>	mg/L	1.0	0.39	1		06/22/20 23:13	16887-00-6	
Fluoride	<b>0.35</b>	mg/L	0.20	0.075	1		06/22/20 23:13	16984-48-8	
Sulfate	<b>41.7</b>	mg/L	5.0	1.4	5		06/23/20 20:28	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-CA-DUP-2**      **Lab ID: 60340199014**      Collected: 06/16/20 08:00      Received: 06/17/20 04:48      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>248</b>	ug/L	5.0	1.8	1	07/06/20 16:51	07/07/20 13:43	7440-39-3	
Boron	<b>931</b>	ug/L	100	11.7	1	07/06/20 16:51	07/07/20 13:43	7440-42-8	
Calcium	<b>154000</b>	ug/L	200	32.4	1	07/06/20 16:51	07/07/20 13:43	7440-70-2	
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	07/06/20 16:51	07/07/20 13:43	7440-48-4	
Iron	<b>&lt;26.8</b>	ug/L	50.0	26.8	1	07/06/20 16:51	07/07/20 13:43	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 13:43	7439-92-1	
Lithium	<b>40.6</b>	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 13:43	7439-93-2	
Magnesium	<b>32500</b>	ug/L	50.0	19.7	1	07/06/20 16:51	07/07/20 13:43	7439-95-4	
Manganese	<b>636</b>	ug/L	5.0	0.97	1	07/06/20 16:51	07/07/20 13:43	7439-96-5	
Molybdenum	<b>2.1J</b>	ug/L	20.0	1.7	1	07/06/20 16:51	07/07/20 13:43	7439-98-7	
Potassium	<b>6340</b>	ug/L	500	189	1	07/06/20 16:51	07/07/20 13:43	7440-09-7	
Sodium	<b>28100</b>	ug/L	500	107	1	07/06/20 16:51	07/07/20 13:43	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>0.45J</b>	ug/L	1.0	0.086	1	06/30/20 09:07	07/01/20 13:35	7440-38-2	
Cadmium	<b>0.39J</b>	ug/L	0.50	0.056	1	06/30/20 09:07	07/01/20 13:35	7440-43-9	
Selenium	<b>0.54J</b>	ug/L	1.0	0.18	1	06/30/20 09:07	07/01/20 13:35	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO <sub>3</sub>	<b>335</b>	mg/L	20.0	8.4	1		06/24/20 14:04		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>664</b>	mg/L	10.0	10.0	1		06/22/20 14:37		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>85.4</b>	mg/L	5.0	1.9	5		06/23/20 00:52	16887-00-6	
Fluoride	<b>0.37</b>	mg/L	0.20	0.075	1		06/22/20 23:46	16984-48-8	
Sulfate	<b>110</b>	mg/L	20.0	5.6	20		06/23/20 20:44	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-CA-FB-1**      **Lab ID: 60340199015**      Collected: 06/16/20 10:50      Received: 06/17/20 04:48      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
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	07/06/20 16:51	07/07/20 13:45	7440-39-3	
Boron	<11.7	ug/L	100	11.7	1	07/06/20 16:51	07/07/20 13:45	7440-42-8	
Calcium	<32.4	ug/L	200	32.4	1	07/06/20 16:51	07/07/20 13:45	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	07/06/20 16:51	07/07/20 13:45	7440-48-4	
Iron	<26.8	ug/L	50.0	26.8	1	07/06/20 16:51	07/07/20 13:45	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 13:45	7439-92-1	
Lithium	<4.6	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 13:45	7439-93-2	
Magnesium	<19.7	ug/L	50.0	19.7	1	07/06/20 16:51	07/07/20 13:45	7439-95-4	
Manganese	<0.97	ug/L	5.0	0.97	1	07/06/20 16:51	07/07/20 13:45	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	07/06/20 16:51	07/07/20 13:45	7439-98-7	
Potassium	<189	ug/L	500	189	1	07/06/20 16:51	07/07/20 13:45	7440-09-7	
Sodium	<107	ug/L	500	107	1	07/06/20 16:51	07/07/20 13:45	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<0.086	ug/L	1.0	0.086	1	06/30/20 09:07	07/01/20 13:29	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	06/30/20 09:07	07/01/20 13:29	7440-43-9	
Selenium	<0.18	ug/L	1.0	0.18	1	06/30/20 09:07	07/01/20 13:29	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<8.4	mg/L	20.0	8.4	1		06/24/20 14:07		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	8.5	mg/L	5.0	5.0	1		06/22/20 14:37		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<0.39	mg/L	1.0	0.39	1		06/23/20 01:09	16887-00-6	
Fluoride	<0.075	mg/L	0.20	0.075	1		06/23/20 01:09	16984-48-8	
Sulfate	<0.28	mg/L	1.0	0.28	1		06/23/20 01:09	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-LMW-1S**      **Lab ID: 60340199018**      Collected: 06/17/20 15:55      Received: 06/19/20 04:22      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	150	ug/L	5.0	1.8	1	07/06/20 16:51	07/07/20 12:46	7440-39-3	
Boron	1160	ug/L	100	11.7	1	07/06/20 16:51	07/07/20 12:46	7440-42-8	
Calcium	83300	ug/L	200	32.4	1	07/06/20 16:51	07/07/20 12:46	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	07/06/20 16:51	07/07/20 12:46	7440-48-4	
Iron	<26.8	ug/L	50.0	26.8	1	07/06/20 16:51	07/07/20 12:46	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 12:46	7439-92-1	
Lithium	14.7	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 12:46	7439-93-2	
Magnesium	20000	ug/L	50.0	19.7	1	07/06/20 16:51	07/07/20 12:46	7439-95-4	
Manganese	69.2	ug/L	5.0	0.97	1	07/06/20 16:51	07/07/20 12:46	7439-96-5	
Molybdenum	105	ug/L	20.0	1.7	1	07/06/20 16:51	07/07/20 12:46	7439-98-7	
Potassium	6600	ug/L	500	189	1	07/06/20 16:51	07/07/20 12:46	7440-09-7	
Sodium	18300	ug/L	500	107	1	07/06/20 16:51	07/07/20 12:46	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	2.0	ug/L	1.0	0.086	1	07/07/20 15:17	07/08/20 12:21	7440-38-2	
Cadmium	0.063J	ug/L	0.50	0.056	1	07/07/20 15:17	07/08/20 12:21	7440-43-9	
Selenium	29.0	ug/L	1.0	0.18	1	07/07/20 15:17	07/08/20 12:21	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	217	mg/L	20.0	8.4	1		06/25/20 11:53		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	388	mg/L	5.0	5.0	1		06/23/20 08:34		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	18.7	mg/L	1.0	0.39	1		06/26/20 20:26	16887-00-6	
Fluoride	0.47	mg/L	0.20	0.075	1		06/26/20 20:26	16984-48-8	
Sulfate	84.1	mg/L	10.0	2.8	10		06/26/20 20:59	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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



### ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-LMW-5S**      **Lab ID: 60340199019**      Collected: 06/17/20 09:45      Received: 06/19/20 04:22      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	57.0	ug/L	5.0	1.8	1	07/06/20 16:51	07/07/20 12:48	7440-39-3	
Boron	17400	ug/L	100	11.7	1	07/06/20 16:51	07/07/20 12:48	7440-42-8	
Calcium	286000	ug/L	200	32.4	1	07/06/20 16:51	07/07/20 12:48	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	07/06/20 16:51	07/07/20 12:48	7440-48-4	
Iron	130	ug/L	50.0	26.8	1	07/06/20 16:51	07/07/20 12:48	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 12:48	7439-92-1	
Lithium	43.4	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 12:48	7439-93-2	
Magnesium	55100	ug/L	50.0	19.7	1	07/06/20 16:51	07/07/20 12:48	7439-95-4	
Manganese	1720	ug/L	5.0	0.97	1	07/06/20 16:51	07/07/20 12:48	7439-96-5	
Molybdenum	2740	ug/L	20.0	1.7	1	07/06/20 16:51	07/07/20 12:48	7439-98-7	
Potassium	5100	ug/L	500	189	1	07/06/20 16:51	07/07/20 12:48	7440-09-7	
Sodium	194000	ug/L	500	107	1	07/06/20 16:51	07/07/20 12:48	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	0.75J	ug/L	1.0	0.086	1	07/07/20 15:17	07/08/20 12:23	7440-38-2	
Cadmium	0.68	ug/L	0.50	0.056	1	07/07/20 15:17	07/08/20 12:23	7440-43-9	
Selenium	<0.18	ug/L	1.0	0.18	1	07/07/20 15:17	07/08/20 12:23	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	275	mg/L	20.0	8.4	1		06/25/20 11:57		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1900	mg/L	20.0	20.0	1		06/23/20 08:34		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	29.0	mg/L	2.0	0.78	2		06/26/20 21:32	16887-00-6	
Fluoride	0.46	mg/L	0.20	0.075	1		06/26/20 21:16	16984-48-8	
Sulfate	1050	mg/L	100	27.8	100		06/26/20 21:49	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-LMW-6S**      **Lab ID: 60340199020**      Collected: 06/17/20 12:00      Received: 06/19/20 04:22      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>53.5</b>	ug/L	5.0	1.8	1	07/06/20 16:51	07/07/20 12:50	7440-39-3	
Boron	<b>19600</b>	ug/L	100	11.7	1	07/06/20 16:51	07/07/20 12:50	7440-42-8	
Calcium	<b>329000</b>	ug/L	200	32.4	1	07/06/20 16:51	07/07/20 12:50	7440-70-2	
Cobalt	<b>10.4</b>	ug/L	5.0	1.5	1	07/06/20 16:51	07/07/20 12:50	7440-48-4	
Iron	<b>89.1</b>	ug/L	50.0	26.8	1	07/06/20 16:51	07/07/20 12:50	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 12:50	7439-92-1	
Lithium	<b>19.3</b>	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 12:50	7439-93-2	
Magnesium	<b>78800</b>	ug/L	50.0	19.7	1	07/06/20 16:51	07/07/20 12:50	7439-95-4	
Manganese	<b>681</b>	ug/L	5.0	0.97	1	07/06/20 16:51	07/07/20 12:50	7439-96-5	
Molybdenum	<b>&lt;1.7</b>	ug/L	20.0	1.7	1	07/06/20 16:51	07/07/20 12:50	7439-98-7	
Potassium	<b>5640</b>	ug/L	500	189	1	07/06/20 16:51	07/07/20 12:50	7440-09-7	
Sodium	<b>120000</b>	ug/L	500	107	1	07/06/20 16:51	07/07/20 12:50	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>0.68J</b>	ug/L	1.0	0.086	1	07/07/20 15:17	07/08/20 12:34	7440-38-2	
Cadmium	<b>1.3</b>	ug/L	0.50	0.056	1	07/07/20 15:17	07/08/20 12:34	7440-43-9	
Selenium	<b>&lt;0.18</b>	ug/L	1.0	0.18	1	07/07/20 15:17	07/08/20 12:34	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>381</b>	mg/L	20.0	8.4	1		06/25/20 12:04		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>1790</b>	mg/L	20.0	20.0	1		06/23/20 08:34		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>4.8</b>	mg/L	1.0	0.39	1		06/26/20 22:05	16887-00-6	
Fluoride	<b>0.21</b>	mg/L	0.20	0.075	1		06/26/20 22:05	16984-48-8	
Sulfate	<b>923</b>	mg/L	100	27.8	100		06/26/20 23:11	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-PZ-1S**      **Lab ID: 60340199021**      Collected: 06/18/20 10:30      Received: 06/19/20 04:22      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>190</b>	ug/L	5.0	1.8	1	07/06/20 16:51	07/07/20 12:53	7440-39-3	
Boron	<b>36700</b>	ug/L	100	11.7	1	07/06/20 16:51	07/07/20 12:53	7440-42-8	
Calcium	<b>219000</b>	ug/L	200	32.4	1	07/06/20 16:51	07/07/20 12:53	7440-70-2	
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	07/06/20 16:51	07/07/20 12:53	7440-48-4	
Iron	<b>8370</b>	ug/L	50.0	26.8	1	07/06/20 16:51	07/07/20 12:53	7439-89-6	
Lead	<b>7.5J</b>	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 12:53	7439-92-1	
Lithium	<b>15.5</b>	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 12:53	7439-93-2	
Magnesium	<b>25600</b>	ug/L	50.0	19.7	1	07/06/20 16:51	07/07/20 12:53	7439-95-4	
Manganese	<b>1190</b>	ug/L	5.0	0.97	1	07/06/20 16:51	07/07/20 12:53	7439-96-5	
Molybdenum	<b>8990</b>	ug/L	20.0	1.7	1	07/06/20 16:51	07/07/20 12:53	7439-98-7	
Potassium	<b>11200</b>	ug/L	500	189	1	07/06/20 16:51	07/07/20 12:53	7440-09-7	
Sodium	<b>65100</b>	ug/L	500	107	1	07/06/20 16:51	07/07/20 12:53	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>0.47J</b>	ug/L	1.0	0.086	1	07/07/20 15:17	07/08/20 12:36	7440-38-2	
Cadmium	<b>0.73</b>	ug/L	0.50	0.056	1	07/07/20 15:17	07/08/20 12:36	7440-43-9	
Selenium	<b>&lt;0.18</b>	ug/L	1.0	0.18	1	07/07/20 15:17	07/08/20 12:36	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>142</b>	mg/L	20.0	8.4	1		06/25/20 16:50		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>1210</b>	mg/L	13.3	13.3	1		06/23/20 08:35		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>19.0</b>	mg/L	1.0	0.39	1		06/26/20 23:28	16887-00-6	
Fluoride	<b>1.2</b>	mg/L	0.20	0.075	1		06/26/20 23:28	16984-48-8	
Sulfate	<b>676</b>	mg/L	50.0	13.9	50		06/27/20 00:01	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-PZ-9D**      **Lab ID: 60340199022**      Collected: 06/17/20 11:05      Received: 06/19/20 04:22      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>112</b>	ug/L	5.0	1.8	1	07/06/20 16:51	07/07/20 12:55	7440-39-3	
Boron	<b>3060</b>	ug/L	100	11.7	1	07/06/20 16:51	07/07/20 12:55	7440-42-8	
Calcium	<b>188000</b>	ug/L	200	32.4	1	07/06/20 16:51	07/07/20 12:55	7440-70-2	
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	07/06/20 16:51	07/07/20 12:55	7440-48-4	
Iron	<b>11300</b>	ug/L	50.0	26.8	1	07/06/20 16:51	07/07/20 12:55	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 12:55	7439-92-1	
Lithium	<b>28.4</b>	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 12:55	7439-93-2	
Magnesium	<b>45500</b>	ug/L	50.0	19.7	1	07/06/20 16:51	07/07/20 12:55	7439-95-4	
Manganese	<b>1220</b>	ug/L	5.0	0.97	1	07/06/20 16:51	07/07/20 12:55	7439-96-5	
Molybdenum	<b>7.6J</b>	ug/L	20.0	1.7	1	07/06/20 16:51	07/07/20 12:55	7439-98-7	
Potassium	<b>4790</b>	ug/L	500	189	1	07/06/20 16:51	07/07/20 12:55	7440-09-7	
Sodium	<b>17900</b>	ug/L	500	107	1	07/06/20 16:51	07/07/20 12:55	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>0.28J</b>	ug/L	1.0	0.086	1	07/07/20 15:17	07/08/20 12:39	7440-38-2	
Cadmium	<b>&lt;0.056</b>	ug/L	0.50	0.056	1	07/07/20 15:17	07/08/20 12:39	7440-43-9	
Selenium	<b>&lt;0.18</b>	ug/L	1.0	0.18	1	07/07/20 15:17	07/08/20 12:39	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>218</b>	mg/L	20.0	8.4	1		06/25/20 12:08		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>904</b>	mg/L	10.0	10.0	1		06/23/20 08:34		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>18.0</b>	mg/L	1.0	0.39	1		06/27/20 00:18	16887-00-6	
Fluoride	<b>0.35</b>	mg/L	0.20	0.075	1		06/27/20 00:18	16984-48-8	
Sulfate	<b>436</b>	mg/L	50.0	13.9	50		06/27/20 00:34	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-TP-2D**      **Lab ID: 60340199023**      Collected: 06/18/20 09:55      Received: 06/19/20 04:22      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	59.0	ug/L	5.0	1.8	1	07/06/20 16:51	07/07/20 12:57	7440-39-3	
Boron	120	ug/L	100	11.7	1	07/06/20 16:51	07/07/20 12:57	7440-42-8	
Calcium	276000	ug/L	200	32.4	1	07/06/20 16:51	07/07/20 12:57	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	07/06/20 16:51	07/07/20 12:57	7440-48-4	
Iron	16300	ug/L	50.0	26.8	1	07/06/20 16:51	07/07/20 12:57	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 12:57	7439-92-1	
Lithium	42.7	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 12:57	7439-93-2	
Magnesium	74600	ug/L	50.0	19.7	1	07/06/20 16:51	07/07/20 12:57	7439-95-4	
Manganese	1340	ug/L	5.0	0.97	1	07/06/20 16:51	07/07/20 12:57	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	07/06/20 16:51	07/07/20 12:57	7439-98-7	
Potassium	5740	ug/L	500	189	1	07/06/20 16:51	07/07/20 12:57	7440-09-7	
Sodium	23600	ug/L	500	107	1	07/06/20 16:51	07/07/20 12:57	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	0.11J	ug/L	1.0	0.086	1	07/07/20 15:17	07/08/20 12:41	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	07/07/20 15:17	07/08/20 12:41	7440-43-9	
Selenium	<0.18	ug/L	1.0	0.18	1	07/07/20 15:17	07/08/20 12:41	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	450	mg/L	20.0	8.4	1		06/25/20 16:57		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1340	mg/L	13.3	13.3	1		06/23/20 08:35		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	75.7	mg/L	10.0	3.9	10		06/27/20 01:07	16887-00-6	
Fluoride	0.21	mg/L	0.20	0.075	1		06/27/20 00:51	16984-48-8	
Sulfate	484	mg/L	50.0	13.9	50		06/27/20 01:24	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-TP-3D**      **Lab ID: 60340199024**      Collected: 06/18/20 11:50      Received: 06/19/20 04:22      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>586</b>	ug/L	5.0	1.8	1	07/06/20 16:51	07/07/20 13:00	7440-39-3	
Boron	<b>91.5J</b>	ug/L	100	11.7	1	07/06/20 16:51	07/07/20 13:00	7440-42-8	
Calcium	<b>120000</b>	ug/L	200	32.4	1	07/06/20 16:51	07/07/20 13:00	7440-70-2	
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	07/06/20 16:51	07/07/20 13:00	7440-48-4	
Iron	<b>7900</b>	ug/L	50.0	26.8	1	07/06/20 16:51	07/07/20 13:00	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 13:00	7439-92-1	
Lithium	<b>31.8</b>	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 13:00	7439-93-2	
Magnesium	<b>29500</b>	ug/L	50.0	19.7	1	07/06/20 16:51	07/07/20 13:00	7439-95-4	
Manganese	<b>666</b>	ug/L	5.0	0.97	1	07/06/20 16:51	07/07/20 13:00	7439-96-5	
Molybdenum	<b>&lt;1.7</b>	ug/L	20.0	1.7	1	07/06/20 16:51	07/07/20 13:00	7439-98-7	
Potassium	<b>4020</b>	ug/L	500	189	1	07/06/20 16:51	07/07/20 13:00	7440-09-7	
Sodium	<b>6880</b>	ug/L	500	107	1	07/06/20 16:51	07/07/20 13:00	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>0.12J</b>	ug/L	1.0	0.086	1	07/07/20 15:17	07/08/20 12:43	7440-38-2	
Cadmium	<b>&lt;0.056</b>	ug/L	0.50	0.056	1	07/07/20 15:17	07/08/20 12:43	7440-43-9	
Selenium	<b>&lt;0.18</b>	ug/L	1.0	0.18	1	07/07/20 15:17	07/08/20 12:43	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>322</b>	mg/L	20.0	8.4	1		06/25/20 17:02		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>504</b>	mg/L	10.0	10.0	1		06/23/20 08:35		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>7.9</b>	mg/L	1.0	0.39	1		06/27/20 02:14	16887-00-6	
Fluoride	<b>0.28</b>	mg/L	0.20	0.075	1		06/27/20 02:14	16984-48-8	
Sulfate	<b>87.1</b>	mg/L	10.0	2.8	10		06/27/20 02:30	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

Sample: S-CA-FB-2 Lab ID: 60340199025 Collected: 06/17/20 10:05 Received: 06/19/20 04:22 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
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	07/06/20 16:51	07/07/20 13:04	7440-39-3	
Boron	22.1J	ug/L	100	11.7	1	07/06/20 16:51	07/07/20 13:04	7440-42-8	
Calcium	36.1J	ug/L	200	32.4	1	07/06/20 16:51	07/07/20 13:04	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	07/06/20 16:51	07/07/20 13:04	7440-48-4	
Iron	<26.8	ug/L	50.0	26.8	1	07/06/20 16:51	07/07/20 13:04	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 13:04	7439-92-1	
Lithium	<4.6	ug/L	10.0	4.6	1	07/06/20 16:51	07/07/20 13:04	7439-93-2	
Magnesium	<19.7	ug/L	50.0	19.7	1	07/06/20 16:51	07/07/20 13:04	7439-95-4	
Manganese	1.7J	ug/L	5.0	0.97	1	07/06/20 16:51	07/07/20 13:04	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	07/06/20 16:51	07/07/20 13:04	7439-98-7	
Potassium	<189	ug/L	500	189	1	07/06/20 16:51	07/07/20 13:04	7440-09-7	
Sodium	119J	ug/L	500	107	1	07/06/20 16:51	07/07/20 13:04	7440-23-5	B
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<0.086	ug/L	1.0	0.086	1	07/07/20 15:17	07/08/20 12:32	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	07/07/20 15:17	07/08/20 12:32	7440-43-9	
Selenium	<0.18	ug/L	1.0	0.18	1	07/07/20 15:17	07/08/20 12:32	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<8.4	mg/L	20.0	8.4	1		06/25/20 12:22		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	7.0	mg/L	5.0	5.0	1		06/23/20 08:34		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<0.39	mg/L	1.0	0.39	1		06/27/20 02:47	16887-00-6	
Fluoride	<0.075	mg/L	0.20	0.075	1		06/27/20 02:47	16984-48-8	
Sulfate	<0.28	mg/L	1.0	0.28	1		06/27/20 02:47	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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

**QUALITY CONTROL DATA**

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

QC Batch: 663587 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: 60340199001, 60340199002, 60340199003, 60340199004, 60340199005, 60340199006, 60340199007, 60340199008, 60340199009, 60340199010, 60340199011, 60340199012, 60340199013, 60340199014, 60340199015

METHOD BLANK: 2689901 Matrix: Water  
 Associated Lab Samples: 60340199001, 60340199002, 60340199003, 60340199004, 60340199005, 60340199006, 60340199007, 60340199008, 60340199009, 60340199010, 60340199011, 60340199012, 60340199013, 60340199014, 60340199015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	07/07/20 12:50	
Boron	ug/L	<11.7	100	11.7	07/07/20 12:50	
Calcium	ug/L	<32.4	200	32.4	07/07/20 12:50	
Cobalt	ug/L	<1.5	5.0	1.5	07/07/20 12:50	
Iron	ug/L	<26.8	50.0	26.8	07/07/20 12:50	
Lead	ug/L	<4.6	10.0	4.6	07/07/20 12:50	
Lithium	ug/L	<4.6	10.0	4.6	07/07/20 12:50	
Magnesium	ug/L	<19.7	50.0	19.7	07/07/20 12:50	
Manganese	ug/L	<0.97	5.0	0.97	07/07/20 12:50	
Molybdenum	ug/L	<1.7	20.0	1.7	07/07/20 12:50	
Potassium	ug/L	<189	500	189	07/07/20 12:50	
Sodium	ug/L	<107	500	107	07/07/20 12:50	

LABORATORY CONTROL SAMPLE: 2689902

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	959	96	85-115	
Boron	ug/L	1000	1020	102	85-115	
Calcium	ug/L	10000	9840	98	85-115	
Cobalt	ug/L	1000	1030	103	85-115	
Iron	ug/L	10000	10100	101	85-115	
Lead	ug/L	1000	1080	108	85-115	
Lithium	ug/L	1000	1020	102	85-115	
Magnesium	ug/L	10000	10300	103	85-115	
Manganese	ug/L	1000	1000	100	85-115	
Molybdenum	ug/L	1000	1040	104	85-115	
Potassium	ug/L	10000	9870	99	85-115	
Sodium	ug/L	10000	10300	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2689903 2689904

Parameter	Units	60340199003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	104	2000	2000	1970	2000	93	95	70-130	2	20	

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**

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



**QUALITY CONTROL DATA**

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2689903												2689904	
Parameter	Units	60340199003		MS	MSD	MS	MSD	MS	MSD	% Rec	Max		
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Boron	ug/L	11400	2000	2000	12800	12900	70	76	70-130	1	20		
Calcium	ug/L	170000	20000	20000	179000	182000	45	59	70-130	2	20	M1	
Cobalt	ug/L	<1.5	2000	2000	1960	2000	98	100	70-130	2	20		
Iron	ug/L	<26.8	20000	20000	19300	19600	96	98	70-130	2	20		
Lead	ug/L	<4.6	2000	2000	2020	2070	101	103	70-130	2	20		
Lithium	ug/L	34.9	2000	2000	1960	2010	96	99	70-130	2	20		
Magnesium	ug/L	28200	20000	20000	45200	46300	85	90	70-130	2	20		
Manganese	ug/L	87.1	2000	2000	1990	2030	95	97	70-130	2	20		
Molybdenum	ug/L	1170	2000	2000	3100	3160	96	99	70-130	2	20		
Potassium	ug/L	8570	20000	20000	27300	27800	94	96	70-130	2	20		
Sodium	ug/L	65700	20000	20000	81300	82300	78	83	70-130	1	20		

MATRIX SPIKE SAMPLE: 2689905							
Parameter	Units	60340199010		MS	MS	% Rec	Qualifiers
		Result	Spike	Result	% Rec	Limits	
Barium	ug/L	400	1000	1360	96	70-130	
Boron	ug/L	79.1J	1000	1090	101	70-130	
Calcium	ug/L	112000	10000	120000	80	70-130	
Cobalt	ug/L	<1.5	1000	992	99	70-130	
Iron	ug/L	7700	10000	17400	96	70-130	
Lead	ug/L	<4.6	1000	1020	102	70-130	
Lithium	ug/L	30.7	1000	1030	100	70-130	
Magnesium	ug/L	30200	10000	39200	90	70-130	
Manganese	ug/L	486	1000	1450	96	70-130	
Molybdenum	ug/L	<1.7	1000	1020	102	70-130	
Potassium	ug/L	3810	10000	13600	98	70-130	
Sodium	ug/L	5890	10000	15900	100	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**

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY SCPA-CA  
Pace Project No.: 60340199

QC Batch: 663588 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: 60340199018, 60340199019, 60340199020, 60340199021, 60340199022, 60340199023, 60340199024, 60340199025

METHOD BLANK: 2689906 Matrix: Water  
Associated Lab Samples: 60340199018, 60340199019, 60340199020, 60340199021, 60340199022, 60340199023, 60340199024, 60340199025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	07/07/20 12:19	
Boron	ug/L	<11.7	100	11.7	07/07/20 12:19	
Calcium	ug/L	<32.4	200	32.4	07/07/20 12:19	
Cobalt	ug/L	<1.5	5.0	1.5	07/07/20 12:19	
Iron	ug/L	<26.8	50.0	26.8	07/07/20 12:19	
Lead	ug/L	<4.6	10.0	4.6	07/07/20 12:19	
Lithium	ug/L	<4.6	10.0	4.6	07/07/20 12:19	
Magnesium	ug/L	<19.7	50.0	19.7	07/07/20 12:19	
Manganese	ug/L	<0.97	5.0	0.97	07/07/20 12:19	
Molybdenum	ug/L	<1.7	20.0	1.7	07/07/20 12:19	
Potassium	ug/L	<189	500	189	07/07/20 12:19	
Sodium	ug/L	210J	500	107	07/07/20 12:19	

LABORATORY CONTROL SAMPLE: 2689907

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1010	101	85-115	
Boron	ug/L	1000	997	100	85-115	
Calcium	ug/L	10000	10200	102	85-115	
Cobalt	ug/L	1000	1030	103	85-115	
Iron	ug/L	10000	10100	101	85-115	
Lead	ug/L	1000	1040	104	85-115	
Lithium	ug/L	1000	1000	100	85-115	
Magnesium	ug/L	10000	10000	100	85-115	
Manganese	ug/L	1000	1010	101	85-115	
Molybdenum	ug/L	1000	1020	102	85-115	
Potassium	ug/L	10000	10000	100	85-115	
Sodium	ug/L	10000	10300	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2689908 2689909

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Spike Conc.	Spike Conc.	Result	Result								
Barium	ug/L	295	1000	1000	1290	1310	100	102	70-130	2	20		
Boron	ug/L	93.7J	1000	1000	1100	1130	101	103	70-130	2	20		
Calcium	ug/L	137000	10000	10000	148000	150000	112	127	70-130	1	20		

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

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2689908												2689909	
Parameter	Units	60340569001 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual		
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD			
Cobalt	ug/L	<1.5	1000	1000	980	1000	98	100	70-130	2	20		
Iron	ug/L	1300	10000	10000	11200	11400	99	101	70-130	2	20		
Lead	ug/L	<4.6	1000	1000	990	1020	99	101	70-130	2	20		
Lithium	ug/L	40.8	1000	1000	1050	1070	101	103	70-130	2	20		
Magnesium	ug/L	39100	10000	10000	49200	49800	100	107	70-130	1	20		
Manganese	ug/L	560	1000	1000	1550	1580	99	102	70-130	2	20		
Molybdenum	ug/L	<1.7	1000	1000	1000	1030	100	103	70-130	3	20		
Potassium	ug/L	7350	10000	10000	17500	17700	101	104	70-130	1	20		
Sodium	ug/L	12300	10000	10000	22400	22800	101	105	70-130	2	20		

MATRIX SPIKE SAMPLE: 2689910		60340199024		Spike	MS	MS	% Rec	Qualifiers
Parameter	Units	Result	Conc.	Conc.	Result	% Rec	Limits	
Barium	ug/L	586	1000	1000	1580	99	70-130	
Boron	ug/L	91.5J	1000	1000	1110	101	70-130	
Calcium	ug/L	120000	10000	10000	128000	81	70-130	
Cobalt	ug/L	<1.5	1000	1000	1000	100	70-130	
Iron	ug/L	7900	10000	10000	17800	99	70-130	
Lead	ug/L	<4.6	1000	1000	1010	101	70-130	
Lithium	ug/L	31.8	1000	1000	1040	101	70-130	
Magnesium	ug/L	29500	10000	10000	39200	97	70-130	
Manganese	ug/L	666	1000	1000	1670	101	70-130	
Molybdenum	ug/L	<1.7	1000	1000	1020	102	70-130	
Potassium	ug/L	4020	10000	10000	14100	101	70-130	
Sodium	ug/L	6880	10000	10000	16800	99	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

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY SCPA-CA  
Pace Project No.: 60340199

QC Batch:	662778	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: 60340199001, 60340199002, 60340199003, 60340199004, 60340199005, 60340199006, 60340199007, 60340199008, 60340199009, 60340199010, 60340199011, 60340199012, 60340199013, 60340199014, 60340199015

METHOD BLANK: 2686742 Matrix: Water  
Associated Lab Samples: 60340199001, 60340199002, 60340199003, 60340199004, 60340199005, 60340199006, 60340199007, 60340199008, 60340199009, 60340199010, 60340199011, 60340199012, 60340199013, 60340199014, 60340199015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	ug/L	<0.086	1.0	0.086	07/01/20 12:25	
Cadmium	ug/L	<0.056	0.50	0.056	07/01/20 12:25	
Selenium	ug/L	<0.18	1.0	0.18	07/01/20 12:25	

LABORATORY CONTROL SAMPLE: 2686743

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	40	41.4	104	85-115	
Cadmium	ug/L	40	39.3	98	85-115	
Selenium	ug/L	40	39.8	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2686744 2686745

Parameter	Units	60340199003 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result							
Arsenic	ug/L	0.95J	40	44.0	43.9	108	107	70-130	0	20		
Cadmium	ug/L	0.45J	40	37.8	37.7	93	93	70-130	0	20		
Selenium	ug/L	<0.18	40	38.7	38.7	96	96	70-130	0	20		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2686746 2686747

Parameter	Units	60340199010 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result							
Arsenic	ug/L	0.17J	40	42.1	42.3	105	105	70-130	1	20		
Cadmium	ug/L	<0.056	40	37.7	37.9	94	95	70-130	0	20		
Selenium	ug/L	<0.18	40	38.5	38.9	96	97	70-130	1	20		

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

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY SCPA-CA  
Pace Project No.: 60340199

QC Batch:	663801	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: 60340199018, 60340199019, 60340199020, 60340199021, 60340199022, 60340199023, 60340199024, 60340199025

METHOD BLANK: 2690401 Matrix: Water  
Associated Lab Samples: 60340199018, 60340199019, 60340199020, 60340199021, 60340199022, 60340199023, 60340199024, 60340199025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	ug/L	<0.086	1.0	0.086	07/08/20 12:04	
Cadmium	ug/L	<0.056	0.50	0.056	07/08/20 12:04	
Selenium	ug/L	<0.18	1.0	0.18	07/08/20 12:04	

LABORATORY CONTROL SAMPLE: 2690402

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	40	40.9	102	85-115	
Cadmium	ug/L	40	38.6	97	85-115	
Selenium	ug/L	40	39.8	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2690403 2690404

Parameter	Units	60340569001		2690404		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Arsenic	ug/L	2.4	80	80	79.1	82.7	96	100	70-130	4	20
Cadmium	ug/L	<0.056	80	80	72.6	74.3	91	93	70-130	2	20
Selenium	ug/L	0.26J	80	80	71.3	76.4	89	95	70-130	7	20

MATRIX SPIKE SAMPLE: 2690405

Parameter	Units	60340836001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	1.6	40	42.0	101	70-130	
Cadmium	ug/L	0.11J	40	36.7	91	70-130	
Selenium	ug/L	0.31J	40	36.9	92	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

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

**QUALITY CONTROL DATA**

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

QC Batch: 661861

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60340199001, 60340199002, 60340199003, 60340199004, 60340199005, 60340199006, 60340199007, 60340199008, 60340199009, 60340199010, 60340199011, 60340199012, 60340199013, 60340199014, 60340199015

METHOD BLANK: 2682908

Matrix: Water

Associated Lab Samples: 60340199001, 60340199002, 60340199003, 60340199004, 60340199005, 60340199006, 60340199007, 60340199008, 60340199009, 60340199010, 60340199011, 60340199012, 60340199013, 60340199014, 60340199015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<8.4	20.0	8.4	06/24/20 11:51	

LABORATORY CONTROL SAMPLE: 2682909

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	487	97	90-110	

SAMPLE DUPLICATE: 2682910

Parameter	Units	60340199003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	240	255	6	10	

SAMPLE DUPLICATE: 2682911

Parameter	Units	60340199010 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	339	347	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**

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

QC Batch: 662014

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60340199018, 60340199019, 60340199020, 60340199022, 60340199025

METHOD BLANK: 2683492

Matrix: Water

Associated Lab Samples: 60340199018, 60340199019, 60340199020, 60340199022, 60340199025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	<8.4	20.0	8.4	06/25/20 10:13	

LABORATORY CONTROL SAMPLE: 2683493

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	500	486	97	90-110	

SAMPLE DUPLICATE: 2683494

Parameter	Units	60340569001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	445	439	2	10	

SAMPLE DUPLICATE: 2683495

Parameter	Units	60340569004 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	403	404	0	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

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

QC Batch: 662236

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory:

Pace Analytical Services - Kansas City

Associated Lab Samples: 60340199021, 60340199023, 60340199024

METHOD BLANK: 2684471

Matrix: Water

Associated Lab Samples: 60340199021, 60340199023, 60340199024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<8.4	20.0	8.4	06/25/20 15:19	

LABORATORY CONTROL SAMPLE: 2684472

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	469	94	90-110	

SAMPLE DUPLICATE: 2684473

Parameter	Units	60340849004 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	604	625	3	10	

SAMPLE DUPLICATE: 2684474

Parameter	Units	60340860001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	59.7	57.2	4	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

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



**QUALITY CONTROL DATA**

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

QC Batch: 660874

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60340199001, 60340199002, 60340199003, 60340199004, 60340199005, 60340199006, 60340199007, 60340199008, 60340199009, 60340199010, 60340199011, 60340199012

METHOD BLANK: 2679058

Matrix: Water

Associated Lab Samples: 60340199001, 60340199002, 60340199003, 60340199004, 60340199005, 60340199006, 60340199007, 60340199008, 60340199009, 60340199010, 60340199011, 60340199012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	06/18/20 09:29	

LABORATORY CONTROL SAMPLE: 2679059

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1000	100	80-120	

SAMPLE DUPLICATE: 2679060

Parameter	Units	60339973004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	286	286	0	10	

SAMPLE DUPLICATE: 2679061

Parameter	Units	60340199010 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	470	467	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**

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

**QUALITY CONTROL DATA**

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

QC Batch: 661435

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60340199013, 60340199014, 60340199015

METHOD BLANK: 2681655

Matrix: Water

Associated Lab Samples: 60340199013, 60340199014, 60340199015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	06/22/20 14:36	

LABORATORY CONTROL SAMPLE: 2681656

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	998	100	80-120	

SAMPLE DUPLICATE: 2681657

Parameter	Units	60340199013 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	493	494	0	10	

SAMPLE DUPLICATE: 2681658

Parameter	Units	60340489002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	3300	3220	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**

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

### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

QC Batch: 661576

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60340199018, 60340199019, 60340199020, 60340199021, 60340199022, 60340199023, 60340199024, 60340199025

METHOD BLANK: 2681980

Matrix: Water

Associated Lab Samples: 60340199018, 60340199019, 60340199020, 60340199021, 60340199022, 60340199023, 60340199024, 60340199025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	06/23/20 08:32	

LABORATORY CONTROL SAMPLE: 2681981

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1000	100	80-120	

SAMPLE DUPLICATE: 2681982

Parameter	Units	60340569001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	568	572	1	10	

SAMPLE DUPLICATE: 2681983

Parameter	Units	60340573001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	420	424	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

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

**QUALITY CONTROL DATA**

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

QC Batch: 660972 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: 60340199001, 60340199002, 60340199003, 60340199004, 60340199005

METHOD BLANK: 2679501 Matrix: Water  
 Associated Lab Samples: 60340199001, 60340199002, 60340199003, 60340199004, 60340199005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	06/18/20 23:01	
Fluoride	mg/L	<0.075	0.20	0.075	06/18/20 23:01	
Sulfate	mg/L	<0.28	1.0	0.28	06/18/20 23:01	

METHOD BLANK: 2681640 Matrix: Water  
 Associated Lab Samples: 60340199001, 60340199002, 60340199003, 60340199004, 60340199005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	06/19/20 10:06	
Fluoride	mg/L	<0.075	0.20	0.075	06/19/20 10:06	
Sulfate	mg/L	<0.28	1.0	0.28	06/19/20 10:06	

LABORATORY CONTROL SAMPLE: 2679502

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	101	90-110	
Sulfate	mg/L	5	5.3	105	90-110	

LABORATORY CONTROL SAMPLE: 2681641

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	2.3	93	90-110	
Sulfate	mg/L	5	5.0	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2679503 2679504

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60340347001 Result	Spike Conc.	Spike Conc.	Result						
Chloride	mg/L	1.6	5	5	6.7	6.7	100	102	80-120	1	15
Fluoride	mg/L	0.098J	2.5	2.5	2.4	2.5	93	95	80-120	2	15
Sulfate	mg/L	2.2	5	5	8.2	8.6	120	128	80-120	4	15 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**

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

**QUALITY CONTROL DATA**

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

MATRIX SPIKE SAMPLE:		2679505					
Parameter	Units	60340199005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	26.1	10	37.8	117	80-120	
Fluoride	mg/L	0.49	2.5	3.1	105	80-120	
Sulfate	mg/L	62.3	50	112	99	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.

**REPORT OF LABORATORY ANALYSIS**

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

**QUALITY CONTROL DATA**

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

QC Batch:	661408	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:	60340199006, 60340199007, 60340199008, 60340199009, 60340199010, 60340199011, 60340199012, 60340199013, 60340199014, 60340199015		

METHOD BLANK:	2681574	Matrix:	Water
Associated Lab Samples:	60340199006, 60340199007, 60340199008, 60340199009, 60340199010, 60340199011, 60340199012, 60340199013, 60340199014, 60340199015		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	06/22/20 09:39	
Fluoride	mg/L	<0.075	0.20	0.075	06/22/20 09:39	
Sulfate	mg/L	<0.28	1.0	0.28	06/22/20 09:39	

METHOD BLANK:	2683038	Matrix:	Water
Associated Lab Samples:	60340199006, 60340199007, 60340199008, 60340199009, 60340199010, 60340199011, 60340199012, 60340199013, 60340199014, 60340199015		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.43J	1.0	0.39	06/23/20 17:02	
Fluoride	mg/L	<0.075	0.20	0.075	06/23/20 17:02	
Sulfate	mg/L	<0.28	1.0	0.28	06/23/20 17:02	

LABORATORY CONTROL SAMPLE:	2681575					
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	101	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

LABORATORY CONTROL SAMPLE:	2683039					
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	2.4	95	90-110	
Sulfate	mg/L	5	4.9	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:	2681576			2681577									
Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Spike Conc.	Result	Spike Conc.	Result								
Chloride	mg/L	59.1	25	25	85.4	85.2	105	105	80-120	0	15		
Fluoride	mg/L	ND	12.5	12.5	13.8	13.8	104	104	80-120	0	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**

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

**QUALITY CONTROL DATA**

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2681576												2681577	
Parameter	Units	60340564001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
			Spike Conc.	Spike Conc.									
Sulfate	mg/L	15.9	25	25	40.4	40.6	98	99	80-120	1	15		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2681578												2681579	
Parameter	Units	60340199010 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
			Spike Conc.	Spike Conc.									
Chloride	mg/L	12.8	5	5	18.2	18.2	108	109	80-120	0	15		
Fluoride	mg/L	0.32	2.5	2.5	2.8	2.8	100	100	80-120	1	15		
Sulfate	mg/L	66.0	25	25	92.3	91.5	105	102	80-120	1	15		

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

**REPORT OF LABORATORY ANALYSIS**

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

**QUALITY CONTROL DATA**

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

QC Batch: 662352

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: 60340199018, 60340199019, 60340199020, 60340199021, 60340199022, 60340199023, 60340199024, 60340199025

METHOD BLANK: 2685059

Matrix: Water

Associated Lab Samples: 60340199018, 60340199019, 60340199020, 60340199021, 60340199022, 60340199023, 60340199024, 60340199025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	06/26/20 09:29	
Fluoride	mg/L	<0.075	0.20	0.075	06/26/20 09:29	
Sulfate	mg/L	<0.28	1.0	0.28	06/26/20 09:29	

METHOD BLANK: 2687009

Matrix: Water

Associated Lab Samples: 60340199018, 60340199019, 60340199020, 60340199021, 60340199022, 60340199023, 60340199024, 60340199025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	06/29/20 09:31	
Fluoride	mg/L	<0.075	0.20	0.075	06/29/20 09:31	
Sulfate	mg/L	<0.28	1.0	0.28	06/29/20 09:31	

METHOD BLANK: 2687769

Matrix: Water

Associated Lab Samples: 60340199018, 60340199019, 60340199020, 60340199021, 60340199022, 60340199023, 60340199024, 60340199025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.40J	1.0	0.39	06/30/20 09:46	
Fluoride	mg/L	<0.075	0.20	0.075	06/30/20 09:46	
Sulfate	mg/L	<0.28	1.0	0.28	06/30/20 09:46	

LABORATORY CONTROL SAMPLE: 2685060

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	91	90-110	
Fluoride	mg/L	2.5	2.5	99	90-110	
Sulfate	mg/L	5	4.8	96	90-110	

LABORATORY CONTROL SAMPLE: 2687010

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

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**

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



### QUALITY CONTROL DATA

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

LABORATORY CONTROL SAMPLE: 2687010

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.4	95	90-110	
Sulfate	mg/L	5	4.8	96	90-110	

LABORATORY CONTROL SAMPLE: 2687770

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	2.4	94	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

MATRIX SPIKE SAMPLE: 2685063

Parameter	Units	60340912004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	25.1	50	70.0	90	80-120	
Fluoride	mg/L	ND	25	26.0	99	80-120	
Sulfate	mg/L	125	50	159	68	80-120 M1	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2685075 2685076

Parameter	Units	60340906001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	610	250	250	881	862	109	101	80-120	2	15	
Fluoride	mg/L	ND	125	125	124	126	95	97	80-120	1	15	
Sulfate	mg/L	639	250	250	900	881	104	97	80-120	2	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

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-BMW-1S**      **Lab ID: 60340199001**      Collected: 06/16/20 09:21      Received: 06/17/20 04:48      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	<b>0.178 ± 0.309 (0.552)</b> <b>C:NA T:87%</b>	pCi/L	07/07/20 12:46	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.339 ± 0.454 (0.970)</b> <b>C:62% T:81%</b>	pCi/L	07/08/20 12:10	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-BMW-3S**      **Lab ID: 60340199002**      Collected: 06/16/20 10:10      Received: 06/17/20 04:48      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	<b>0.168 ± 0.452 (0.840)</b> <b>C:NA T:91%</b>	pCi/L	07/07/20 12:46	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.569 ± 0.557 (1.15)</b> <b>C:56% T:86%</b>	pCi/L	07/08/20 12:11	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-LMW-2S**      **Lab ID: 60340199003**      Collected: 06/16/20 14:32      Received: 06/17/20 04:48      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	<b>0.311 ± 0.325 (0.458)</b> <b>C:NA T:84%</b>	pCi/L	07/07/20 13:16	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.556 ± 0.502 (1.02)</b> <b>C:67% T:72%</b>	pCi/L	07/08/20 12:12	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-LMW-4S**      **Lab ID: 60340199004**      Collected: 06/16/20 14:45      Received: 06/17/20 04:48      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	<b>0.347 ± 0.323 (0.426)</b> <b>C:NA T:88%</b>	pCi/L	07/07/20 13:16	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.483 ± 0.535 (1.12)</b> <b>C:65% T:62%</b>	pCi/L	07/08/20 12:12	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-AM-1S**      **Lab ID: 60340199005**      Collected: 06/16/20 09:25      Received: 06/17/20 04:48      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	<b>0.0580 ± 0.265 (0.427)</b> <b>C:NA T:91%</b>	pCi/L	07/07/20 12:46	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.382 ± 0.436 (0.914)</b> <b>C:57% T:85%</b>	pCi/L	07/08/20 12:11	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-AM-1D**      **Lab ID: 60340199006**      Collected: 06/16/20 16:15      Received: 06/17/20 04:48      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	<b>0.172 ± 0.338 (0.619)</b> <b>C:NA T:92%</b>	pCi/L	07/07/20 13:16	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>1.27 ± 0.558 (0.916)</b> <b>C:64% T:78%</b>	pCi/L	07/08/20 12:12	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-TP-4D**      **Lab ID: 60340199007**      Collected: 06/16/20 10:35      Received: 06/17/20 04:48      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	<b>-0.0555 ± 0.474 (0.966)</b> <b>C:NA T:86%</b>	pCi/L	07/07/20 12:46	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.885 ± 0.585 (1.12)</b> <b>C:54% T:80%</b>	pCi/L	07/08/20 12:11	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-TP-5D**      **Lab ID: 60340199008**      Collected: 06/16/20 12:31      Received: 06/17/20 04:48      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	<b>0.120 ± 0.333 (0.646)</b> <b>C:NA T:81%</b>	pCi/L	07/07/20 13:02	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.573 ± 0.453 (0.893)</b> <b>C:63% T:78%</b>	pCi/L	07/08/20 12:12	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-TP-6S**      **Lab ID: 60340199009**      Collected: 06/16/20 11:00      Received: 06/17/20 04:48      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	<b>0.000 ± 0.282 (0.633)</b> <b>C:NA T:87%</b>	pCi/L	07/07/20 13:02	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.478 ± 0.557 (1.18)</b> <b>C:54% T:82%</b>	pCi/L	07/08/20 12:11	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-TP-6D**      **Lab ID: 60340199010**      Collected: 06/16/20 12:00      Received: 06/17/20 04:48      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	<b>0.339 ± 0.287 (0.356)</b> <b>C:NA T:83%</b>	pCi/L	07/07/20 13:02	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>1.98 ± 0.766 (1.22)</b> <b>C:56% T:80%</b>	pCi/L	07/08/20 12:11	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-TP-8D**      **Lab ID: 60340199011**      Collected: 06/16/20 13:45      Received: 06/17/20 04:48      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	<b>0.602 ± 0.582 (0.912)</b> <b>C:NA T:91%</b>	pCi/L	07/07/20 13:02	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>1.06 ± 0.543 (0.962)</b> <b>C:60% T:84%</b>	pCi/L	07/08/20 12:12	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-UG-3**      **Lab ID: 60340199012**      Collected: 06/16/20 11:31      Received: 06/17/20 04:48      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	<b>0.286 ± 0.436 (0.751)</b> <b>C:NA T:95%</b>	pCi/L	07/07/20 13:02	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.362 ± 0.586 (1.27)</b> <b>C:56% T:82%</b>	pCi/L	07/08/20 12:11	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-CA-DUP-1**      **Lab ID: 60340199013**      Collected: 06/16/20 08:00      Received: 06/17/20 04:48      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	<b>0.340 ± 0.386 (0.609)</b> <b>C:NA T:90%</b>	pCi/L	07/07/20 12:46	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.722 ± 0.435 (0.811)</b> <b>C:68% T:88%</b>	pCi/L	07/08/20 12:10	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-CA-DUP-2**      **Lab ID: 60340199014**      Collected: 06/16/20 08:00      Received: 06/17/20 04:48      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	<b>0.349 ± 0.486 (0.821)</b> <b>C:NA T:83%</b>	pCi/L	07/07/20 12:46	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.438 ± 0.547 (1.16)</b> <b>C:62% T:73%</b>	pCi/L	07/08/20 12:10	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-CA-FB-1**      **Lab ID: 60340199015**      Collected: 06/16/20 10:50      Received: 06/17/20 04:48      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	<b>0.0566 ± 0.483 (0.942)</b> <b>C:NA T:87%</b>	pCi/L	07/07/20 12:46	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.700 ± 0.583 (1.19)</b> <b>C:59% T:86%</b>	pCi/L	07/08/20 12:11	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-CA-TP-6D-MS**      **Lab ID: 60340199016**      Collected: 06/16/20 12:00      Received: 06/17/20 04:48      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	<b>121.17 %REC ± NA (NA)</b> <b>C:NA T:NA</b>	pCi/L	07/07/20 13:02	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>91.48 %REC ± NA (NA)</b> <b>C:NA T:NA</b>	pCi/L	07/08/20 12:11	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-CA-TP-6D-MSD**      **Lab ID: 60340199017**      Collected: 06/16/20 12:00      Received: 06/17/20 04:48      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	<b>106.13 %REC 13.23 RPD ±</b> <b>NA (NA)</b> <b>C:NA T:NA</b>	pCi/L	07/07/20 13:02	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>87.43 %REC 4.53 RPD ±</b> <b>NA (NA)</b> <b>C:NA T:NA</b>	pCi/L	07/08/20 12:11	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-LMW-1S**      **Lab ID: 60340199018**      Collected: 06/17/20 15:55      Received: 06/19/20 04:22      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	<b>0.109 ± 0.370 (0.713)</b> <b>C:NA T:97%</b>	pCi/L	07/16/20 14:02	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.719 ± 0.462 (0.877)</b> <b>C:69% T:78%</b>	pCi/L	07/15/20 12:11	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-LMW-5S**      **Lab ID: 60340199019**      Collected: 06/17/20 09:45      Received: 06/19/20 04:22      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	<b>0.0554 ± 0.392 (0.781)</b> <b>C:NA T:92%</b>	pCi/L	07/16/20 14:02	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.386 ± 0.417 (0.875)</b> <b>C:69% T:88%</b>	pCi/L	07/15/20 12:11	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

---

**Sample: S-LMW-6S**      **Lab ID: 60340199020**      Collected: 06/17/20 12:00      Received: 06/19/20 04:22      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	<b>0.134 ± 0.372 (0.721)</b> <b>C:NA T:89%</b>	pCi/L	07/16/20 14:02	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.105 ± 0.436 (0.988)</b> <b>C:66% T:76%</b>	pCi/L	07/15/20 12:11	15262-20-1	

## REPORT OF LABORATORY ANALYSIS

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

**ANALYTICAL RESULTS - RADIOCHEMISTRY**

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-PZ-1S**      **Lab ID: 60340199021**      Collected: 06/18/20 10:30      Received: 06/19/20 04:22      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	<b>0.240 ± 0.441 (0.786)</b> <b>C:NA T:89%</b>	pCi/L	07/16/20 14:02	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>1.33 ± 0.549 (0.881)</b> <b>C:62% T:85%</b>	pCi/L	07/15/20 12:11	15262-20-1	

**REPORT OF LABORATORY ANALYSIS**

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-PZ-9D**      **Lab ID: 60340199022**      Collected: 06/17/20 11:05      Received: 06/19/20 04:22      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	<b>0.0586 ± 0.304 (0.631)</b> <b>C:NA T:94%</b>	pCi/L	07/16/20 14:02	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.911 ± 0.474 (0.830)</b> <b>C:63% T:81%</b>	pCi/L	07/15/20 12:11	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-TP-2D**      **Lab ID: 60340199023**      Collected: 06/18/20 09:55      Received: 06/19/20 04:22      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	<b>0.000 ± 0.278 (0.624)</b> <b>C:NA T:88%</b>	pCi/L	07/16/20 14:02	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>1.56 ± 0.574 (0.884)</b> <b>C:70% T:86%</b>	pCi/L	07/15/20 12:14	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-TP-3D**      **Lab ID: 60340199024**      Collected: 06/18/20 11:50      Received: 06/19/20 04:22      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	<b>0.378 ± 0.430 (0.678)</b> <b>C:NA T:85%</b>	pCi/L	07/16/20 14:20	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.908 ± 0.524 (0.963)</b> <b>C:63% T:82%</b>	pCi/L	07/15/20 15:38	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

**Sample: S-CA-FB-2**      **Lab ID: 60340199025**      Collected: 06/17/20 10:05      Received: 06/19/20 04:22      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	<b>0.000 ± 0.316 (0.642)</b> <b>C:NA T:85%</b>	pCi/L	07/16/20 14:20	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.378 ± 0.545 (1.17)</b> <b>C:62% T:71%</b>	pCi/L	07/15/20 15:38	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

QC Batch: 401931

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: 60340199001, 60340199002, 60340199003, 60340199004, 60340199005, 60340199006, 60340199007, 60340199008, 60340199009, 60340199010, 60340199011, 60340199012, 60340199013, 60340199014, 60340199015, 60340199016, 60340199017

METHOD BLANK: 1946000

Matrix: Water

Associated Lab Samples: 60340199001, 60340199002, 60340199003, 60340199004, 60340199005, 60340199006, 60340199007, 60340199008, 60340199009, 60340199010, 60340199011, 60340199012, 60340199013, 60340199014, 60340199015, 60340199016, 60340199017

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.174 ± 0.320 (0.726) C:NA T:86%	pCi/L	07/07/20 12:46	

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

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

### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

QC Batch: 401932

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: 60340199001, 60340199002, 60340199003, 60340199004, 60340199005, 60340199006, 60340199007, 60340199008, 60340199009, 60340199010, 60340199011, 60340199012, 60340199013, 60340199014, 60340199015, 60340199016, 60340199017

METHOD BLANK: 1946001

Matrix: Water

Associated Lab Samples: 60340199001, 60340199002, 60340199003, 60340199004, 60340199005, 60340199006, 60340199007, 60340199008, 60340199009, 60340199010, 60340199011, 60340199012, 60340199013, 60340199014, 60340199015, 60340199016, 60340199017

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.531 ± 0.408 (0.799) C:66% T:80%	pCi/L	07/08/20 12:07	

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

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

### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

QC Batch: 403553

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: 60340199018, 60340199019, 60340199020, 60340199021, 60340199022, 60340199023, 60340199024, 60340199025

METHOD BLANK: 1953145

Matrix: Water

Associated Lab Samples: 60340199018, 60340199019, 60340199020, 60340199021, 60340199022, 60340199023, 60340199024, 60340199025

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.856 ± 0.477 (0.878) C:72% T:81%	pCi/L	07/15/20 10:58	

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

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

### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

---

QC Batch:	403584	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: 60340199018, 60340199019, 60340199020, 60340199021, 60340199022, 60340199023, 60340199024, 60340199025

---

METHOD BLANK: 1953199 Matrix: Water

Associated Lab Samples: 60340199018, 60340199019, 60340199020, 60340199021, 60340199022, 60340199023, 60340199024, 60340199025

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0468 ± 0.356 (0.703) C:NA T:89%	pCi/L	07/16/20 14:02	

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

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

## QUALIFIERS

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

---

### 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.

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.

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

## REPORT OF LABORATORY ANALYSIS

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

### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60340199001	S-BMW-1S	EPA 200.7	663587	EPA 200.7	663738
60340199002	S-BMW-3S	EPA 200.7	663587	EPA 200.7	663738
60340199003	S-LMW-2S	EPA 200.7	663587	EPA 200.7	663738
60340199004	S-LMW-4S	EPA 200.7	663587	EPA 200.7	663738
60340199005	S-AM-1S	EPA 200.7	663587	EPA 200.7	663738
60340199006	S-AM-1D	EPA 200.7	663587	EPA 200.7	663738
60340199007	S-TP-4D	EPA 200.7	663587	EPA 200.7	663738
60340199008	S-TP-5D	EPA 200.7	663587	EPA 200.7	663738
60340199009	S-TP-6S	EPA 200.7	663587	EPA 200.7	663738
60340199010	S-TP-6D	EPA 200.7	663587	EPA 200.7	663738
60340199011	S-TP-8D	EPA 200.7	663587	EPA 200.7	663738
60340199012	S-UG-3	EPA 200.7	663587	EPA 200.7	663738
60340199013	S-CA-DUP-1	EPA 200.7	663587	EPA 200.7	663738
60340199014	S-CA-DUP-2	EPA 200.7	663587	EPA 200.7	663738
60340199015	S-CA-FB-1	EPA 200.7	663587	EPA 200.7	663738
60340199018	S-LMW-1S	EPA 200.7	663588	EPA 200.7	663739
60340199019	S-LMW-5S	EPA 200.7	663588	EPA 200.7	663739
60340199020	S-LMW-6S	EPA 200.7	663588	EPA 200.7	663739
60340199021	S-PZ-1S	EPA 200.7	663588	EPA 200.7	663739
60340199022	S-PZ-9D	EPA 200.7	663588	EPA 200.7	663739
60340199023	S-TP-2D	EPA 200.7	663588	EPA 200.7	663739
60340199024	S-TP-3D	EPA 200.7	663588	EPA 200.7	663739
60340199025	S-CA-FB-2	EPA 200.7	663588	EPA 200.7	663739
60340199001	S-BMW-1S	EPA 200.8	662778	EPA 200.8	662843
60340199002	S-BMW-3S	EPA 200.8	662778	EPA 200.8	662843
60340199003	S-LMW-2S	EPA 200.8	662778	EPA 200.8	662843
60340199004	S-LMW-4S	EPA 200.8	662778	EPA 200.8	662843
60340199005	S-AM-1S	EPA 200.8	662778	EPA 200.8	662843
60340199006	S-AM-1D	EPA 200.8	662778	EPA 200.8	662843
60340199007	S-TP-4D	EPA 200.8	662778	EPA 200.8	662843
60340199008	S-TP-5D	EPA 200.8	662778	EPA 200.8	662843
60340199009	S-TP-6S	EPA 200.8	662778	EPA 200.8	662843
60340199010	S-TP-6D	EPA 200.8	662778	EPA 200.8	662843
60340199011	S-TP-8D	EPA 200.8	662778	EPA 200.8	662843
60340199012	S-UG-3	EPA 200.8	662778	EPA 200.8	662843
60340199013	S-CA-DUP-1	EPA 200.8	662778	EPA 200.8	662843
60340199014	S-CA-DUP-2	EPA 200.8	662778	EPA 200.8	662843
60340199015	S-CA-FB-1	EPA 200.8	662778	EPA 200.8	662843
60340199018	S-LMW-1S	EPA 200.8	663801	EPA 200.8	663983
60340199019	S-LMW-5S	EPA 200.8	663801	EPA 200.8	663983
60340199020	S-LMW-6S	EPA 200.8	663801	EPA 200.8	663983
60340199021	S-PZ-1S	EPA 200.8	663801	EPA 200.8	663983
60340199022	S-PZ-9D	EPA 200.8	663801	EPA 200.8	663983
60340199023	S-TP-2D	EPA 200.8	663801	EPA 200.8	663983
60340199024	S-TP-3D	EPA 200.8	663801	EPA 200.8	663983
60340199025	S-CA-FB-2	EPA 200.8	663801	EPA 200.8	663983
60340199001	S-BMW-1S	EPA 903.1	401931		

### REPORT OF LABORATORY ANALYSIS

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



## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60340199002	S-BMW-3S	EPA 903.1	401931		
60340199003	S-LMW-2S	EPA 903.1	401931		
60340199004	S-LMW-4S	EPA 903.1	401931		
60340199005	S-AM-1S	EPA 903.1	401931		
60340199006	S-AM-1D	EPA 903.1	401931		
60340199007	S-TP-4D	EPA 903.1	401931		
60340199008	S-TP-5D	EPA 903.1	401931		
60340199009	S-TP-6S	EPA 903.1	401931		
60340199010	S-TP-6D	EPA 903.1	401931		
60340199011	S-TP-8D	EPA 903.1	401931		
60340199012	S-UG-3	EPA 903.1	401931		
60340199013	S-CA-DUP-1	EPA 903.1	401931		
60340199014	S-CA-DUP-2	EPA 903.1	401931		
60340199015	S-CA-FB-1	EPA 903.1	401931		
60340199016	S-CA-TP-6D-MS	EPA 903.1	401931		
60340199017	S-CA-TP-6D-MSD	EPA 903.1	401931		
60340199018	S-LMW-1S	EPA 903.1	403584		
60340199019	S-LMW-5S	EPA 903.1	403584		
60340199020	S-LMW-6S	EPA 903.1	403584		
60340199021	S-PZ-1S	EPA 903.1	403584		
60340199022	S-PZ-9D	EPA 903.1	403584		
60340199023	S-TP-2D	EPA 903.1	403584		
60340199024	S-TP-3D	EPA 903.1	403584		
60340199025	S-CA-FB-2	EPA 903.1	403584		
60340199001	S-BMW-1S	EPA 904.0	401932		
60340199002	S-BMW-3S	EPA 904.0	401932		
60340199003	S-LMW-2S	EPA 904.0	401932		
60340199004	S-LMW-4S	EPA 904.0	401932		
60340199005	S-AM-1S	EPA 904.0	401932		
60340199006	S-AM-1D	EPA 904.0	401932		
60340199007	S-TP-4D	EPA 904.0	401932		
60340199008	S-TP-5D	EPA 904.0	401932		
60340199009	S-TP-6S	EPA 904.0	401932		
60340199010	S-TP-6D	EPA 904.0	401932		
60340199011	S-TP-8D	EPA 904.0	401932		
60340199012	S-UG-3	EPA 904.0	401932		
60340199013	S-CA-DUP-1	EPA 904.0	401932		
60340199014	S-CA-DUP-2	EPA 904.0	401932		
60340199015	S-CA-FB-1	EPA 904.0	401932		
60340199016	S-CA-TP-6D-MS	EPA 904.0	401932		
60340199017	S-CA-TP-6D-MSD	EPA 904.0	401932		
60340199018	S-LMW-1S	EPA 904.0	403553		
60340199019	S-LMW-5S	EPA 904.0	403553		
60340199020	S-LMW-6S	EPA 904.0	403553		
60340199021	S-PZ-1S	EPA 904.0	403553		
60340199022	S-PZ-9D	EPA 904.0	403553		
60340199023	S-TP-2D	EPA 904.0	403553		

## REPORT OF LABORATORY ANALYSIS

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

### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60340199024	S-TP-3D	EPA 904.0	403553		
60340199025	S-CA-FB-2	EPA 904.0	403553		
60340199001	S-BMW-1S	SM 2320B	661861		
60340199002	S-BMW-3S	SM 2320B	661861		
60340199003	S-LMW-2S	SM 2320B	661861		
60340199004	S-LMW-4S	SM 2320B	661861		
60340199005	S-AM-1S	SM 2320B	661861		
60340199006	S-AM-1D	SM 2320B	661861		
60340199007	S-TP-4D	SM 2320B	661861		
60340199008	S-TP-5D	SM 2320B	661861		
60340199009	S-TP-6S	SM 2320B	661861		
60340199010	S-TP-6D	SM 2320B	661861		
60340199011	S-TP-8D	SM 2320B	661861		
60340199012	S-UG-3	SM 2320B	661861		
60340199013	S-CA-DUP-1	SM 2320B	661861		
60340199014	S-CA-DUP-2	SM 2320B	661861		
60340199015	S-CA-FB-1	SM 2320B	661861		
60340199018	S-LMW-1S	SM 2320B	662014		
60340199019	S-LMW-5S	SM 2320B	662014		
60340199020	S-LMW-6S	SM 2320B	662014		
60340199021	S-PZ-1S	SM 2320B	662236		
60340199022	S-PZ-9D	SM 2320B	662014		
60340199023	S-TP-2D	SM 2320B	662236		
60340199024	S-TP-3D	SM 2320B	662236		
60340199025	S-CA-FB-2	SM 2320B	662014		
60340199001	S-BMW-1S	SM 2540C	660874		
60340199002	S-BMW-3S	SM 2540C	660874		
60340199003	S-LMW-2S	SM 2540C	660874		
60340199004	S-LMW-4S	SM 2540C	660874		
60340199005	S-AM-1S	SM 2540C	660874		
60340199006	S-AM-1D	SM 2540C	660874		
60340199007	S-TP-4D	SM 2540C	660874		
60340199008	S-TP-5D	SM 2540C	660874		
60340199009	S-TP-6S	SM 2540C	660874		
60340199010	S-TP-6D	SM 2540C	660874		
60340199011	S-TP-8D	SM 2540C	660874		
60340199012	S-UG-3	SM 2540C	660874		
60340199013	S-CA-DUP-1	SM 2540C	661435		
60340199014	S-CA-DUP-2	SM 2540C	661435		
60340199015	S-CA-FB-1	SM 2540C	661435		
60340199018	S-LMW-1S	SM 2540C	661576		
60340199019	S-LMW-5S	SM 2540C	661576		
60340199020	S-LMW-6S	SM 2540C	661576		
60340199021	S-PZ-1S	SM 2540C	661576		

### REPORT OF LABORATORY ANALYSIS

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

### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SIOUX ENERGY SCPA-CA

Pace Project No.: 60340199

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60340199022	S-PZ-9D	SM 2540C	661576		
60340199023	S-TP-2D	SM 2540C	661576		
60340199024	S-TP-3D	SM 2540C	661576		
60340199025	S-CA-FB-2	SM 2540C	661576		
60340199001	S-BMW-1S	EPA 300.0	660972		
60340199002	S-BMW-3S	EPA 300.0	660972		
60340199003	S-LMW-2S	EPA 300.0	660972		
60340199004	S-LMW-4S	EPA 300.0	660972		
60340199005	S-AM-1S	EPA 300.0	660972		
60340199006	S-AM-1D	EPA 300.0	661408		
60340199007	S-TP-4D	EPA 300.0	661408		
60340199008	S-TP-5D	EPA 300.0	661408		
60340199009	S-TP-6S	EPA 300.0	661408		
60340199010	S-TP-6D	EPA 300.0	661408		
60340199011	S-TP-8D	EPA 300.0	661408		
60340199012	S-UG-3	EPA 300.0	661408		
60340199013	S-CA-DUP-1	EPA 300.0	661408		
60340199014	S-CA-DUP-2	EPA 300.0	661408		
60340199015	S-CA-FB-1	EPA 300.0	661408		
60340199018	S-LMW-1S	EPA 300.0	662352		
60340199019	S-LMW-5S	EPA 300.0	662352		
60340199020	S-LMW-6S	EPA 300.0	662352		
60340199021	S-PZ-1S	EPA 300.0	662352		
60340199022	S-PZ-9D	EPA 300.0	662352		
60340199023	S-TP-2D	EPA 300.0	662352		
60340199024	S-TP-3D	EPA 300.0	662352		
60340199025	S-CA-FB-2	EPA 300.0	662352		

### REPORT OF LABORATORY ANALYSIS

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



Sample Condition Upon Receipt

WO#: 60340199



Client Name: Golder Assoc.

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  X2PIC

Thermometer Used: T295 Type of Ice: We Blue  None

Cooler Temperature (°C): As-read 0.8 Corr. Factor 40.4 Corrected 1.2

Date and initials of person examining contents: 6-17-2020 <sup>KAC</sup>

Temperature should be above freezing to 6°C 21.9, 3.8, 22.3 22.3, 4.2, 22.7

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	<u>coolers out of temp had only</u>
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<u>radium samples</u>
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 <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT# <u>603296</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: Jamie Church Date: 6/17/20

# 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

<b>Section A</b> Required Client Information:		<b>Section B</b> Required Project Information:		<b>Section C</b> Invoice Information:	
Company: <b>Golder Associates</b>	Report To: <b>Jeffrey Ingram</b>	Attention:	Company Name: <b>Golder Associates Inc</b>	<b>REGULATORY AGENCY</b>	
Address: <b>13515 Barrett Parkway Dr., Ste 260</b>	Copy To: <b>Eric Schmieder, Ryan Feldman</b>	Address:	Address:	<input type="checkbox"/> NPDES	<input checked="" type="checkbox"/> GROUND WATER
Email To: <b>jeffrey_ingram@golder.com</b>	Purchase Order No.: <b>COC #8</b>	Pace Quote Reference:	Pace Project Reference:	<input type="checkbox"/> UST	<input type="checkbox"/> RCRA
Phone: <b>636-724-9191</b>	Project Name: <b>Ameren Sioux Energy Center SCPA-CA</b>	Pace Project Manager:	Pace Project Manager:	<input type="checkbox"/> DRINKING WATER	<input type="checkbox"/> OTHER
Requested Due Date/TAT: <b>Standard</b>	Project Number: <b>153140602.0003A</b>	Site Location:	MO:		

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WATER WW WASTE WATER WP PRODUCT P SOIL/SOLID SL OIL OL 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 <sub>2</sub> SO <sub>4</sub> HNO <sub>3</sub> HCl NaOH Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Methanol Other	Analysis Test ↑ Chloride/Fluoride/Sulfate App III and Cat/An Metals Alkalinity TDS Appendix IV Metals *	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
				COMPOSITE START	COMPOSITE END/GRAB										
1	S-BMW-1S	WT G	G	6/16/20	0921		4								
2	S-BMW-3S	WT G	G	↓	1610		↓								
3	S-LMW-1S	WT G	G				4								
4	S-LMW-2S	WT G	G	6/16/20	1432		↓								
5	S-LMW-4S	WT G	G	↓	1445		↓								
6	S-LMW-5S	WT G	G												
7	S-LMW-6S	WT G	G												
8	S-AM-1S	WT G	G	6/16/20	0925		4								
9	S-AM-1D	WT G	G	6/15/20	1615		↓								
10	S-PZ-1S	WT G	G												
11	S-PZ-9D	WT G	G												
12	S-TP-2D	WT G	G												

<b>Section D</b> Required Client Information		<b>Section E</b> Requested Analysis Filtered (Y/N)		<b>Section F</b> Residual Chlorine (Y/N)	
Pace Project Reference: <b>63101509</b>		Radium 226		Radium 226	
Requested Due Date/TAT: <b>Standard</b>		Appendix IV Metals *		Temp in °C	
Project Name: <b>Ameren Sioux Energy Center SCPA-CA</b>		Alkalinity		Received on	
Project Number: <b>153140602.0003A</b>		TDS		Cooler (Y/N)	
Site Location: <b>Jamie Church</b>		Chloride/Fluoride/Sulfate		Custody Sealed	
MO: <b>MO</b>		App III and Cat/An Metals		Samples Intact	

**SAMPLER NAME AND SIGNATURE**  
 PRINT Name of SAMPLER: **Brendan Talbert**  
 SIGNATURE of SAMPLER: *Brendan Talbert*  
 DATE Signed (MM/DD/YYYY): **04/14/20**



# CHAIN-OF-CUSTODY / Analytical Request Document

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

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

<b>Section A</b> Required Client Information:		<b>Section B</b> Required Project Information:		<b>Section C</b> Invoice Information:	
Company: Golder Associates	Report To: Jeffrey Ingram	Company Name: Golder Associates Inc	Address:	REGULATORY AGENCY	
Address: 13515 Barrett Parkway Dr., Ste 260	Copy To: Eric Schmieder, Ryan Feldman	Address:	NPDES <input checked="" type="checkbox"/> GROUND WATER	<input type="checkbox"/> DRINKING WATER	<input type="checkbox"/> OTHER
Email To: jeffrey_ingram@golder.com	Purchase Order No.: COC #8	Pace Quote Reference:	UST <input type="checkbox"/> RCRA <input type="checkbox"/>		
Phone: 636-724-9191	Project Name: Ameren Sioux Energy Center SCPA-CA	Pace Project Manager:	Site Location MO		
Requested Due Date/TAT: Standard	Project Number: 153140602.0003A	Pace Profile #:	STATE: MO		

ITEM #	Valid Matrix Codes MATRIX CODE	Requested Client Information	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		PRESERVATIVES	Analysis Test ↑	Y/N	Requested Analysis Filtered (Y/N)												Pace Project No./ Lab I.D.																	
				COMPOSITE START	COMPOSITE END/GRAB				DATE	TIME	UNPRESERVED	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Methanol	Other	Chloride/Fluoride/Sulfate	N		App III and Cat/An Metals	Alkalinity	TDS	Appendix IV Metals *	Radium 226	Radium 226	Residual Chlorine (Y/N)										
																													# OF CONTAINERS	SAMPLE TEMP AT COLLECTION								
1	S-TP-3D		G																																			
2	S-TP-4D		G			6/16/20	1035	4	1	3																												
3	S-TP-5D		G				1231	1																														
4	S-TP-6S		G			6/16/20	1100	4																														
5	S-TP-6D		G				1200	2																														
6	S-TP-8D		G			6/16/20	1345	4	1	3																												
7	S-UG-3		G			6/16/20	1131	4	1	3																												
8	S-CA-DUP-1		G			6/16/20	1131	4	1	3																												
9	S-CA-DUP-2		G				—	2																														
10	S-CA-FB-1		G			6/16/20	1050	4																														
11	S-CA-FB-2 S-CA-MSD-1		G			6/16/20	1200	4																														
12	S-CA-MS-1		G				1200	2																														

<b>ADDITIONAL COMMENTS</b> App III and Cat/An Metals* - EPA 200.7; Fe, Mg, Mn, K, Na, Ca, B App IV Metals - EPA 200.7 - Ba, Co, Pb, Li, Mo 200.8 Metals - As, Cd, Se	<b>RELINQUISHED BY / AFFILIATION</b> Brendon Talbert/Golder Angela Mena	<b>DATE</b> 6/16/20 6/16	<b>TIME</b> 1600 16:20	<b>ACCEPTED BY / AFFILIATION</b> Angela Mena Brendon Talbert/PSI	<b>DATE</b> 6/16 6/17/2004	<b>TIME</b> 16:30 4:48	<b>SAMPLE CONDITIONS</b> Received on Ice (Y/N) Custody Sealed (Y/N) Samples Intact (Y/N)
<b>SAMPLER NAME AND SIGNATURE</b> PRINT Name of SAMPLER: Brendon Talbert SIGNATURE of SAMPLER: <i>Brendon Talbert</i> DATE Signed (MM/DD/YYYY): 6/16/20							



# 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 Schnieder, Ryan Feldman  
 Purchase Order No.: COC #12  
 Project Name: Ameren Sioux Energy Center SCPD  
 Project Number: 153140602.0003E

**Section C**  
 Invoice Information:  
 Attention:  
 Company Name: Golder Associates Inc  
 Address:  
 Face Quote Reference:  
 Face Project Manager: Jamie Church  
 Face 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 DRINKING WATER DW WATER WT WASTE WATER WW PRODUCT P SOIL/SOLID SL OIL OL WP AR OT TS	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives Unpreserved H <sub>2</sub> SO <sub>4</sub> HNO <sub>3</sub> HCl NaOH Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Methanol Other	Requested Analysis Filtered (Y/N)	Face Project No./ Lab I.D.
			COMPOSITE START	COMPOSITE END/GRAB					
1									
2	S-DG-5	WT G							
3	S-DG-6	WT G							
4	S-DG-7	WT G							
5	S-SCPD-DUP-1	WT G							
6	S-SCPD-FB-1	WT G							
7	S-SCPD-MS-1	WT G							
8	S-SCPD-MSD-1	WT G							
9	S-BMW-1S	WT G				4			
10	S-BMW-3S	WT G				1			
11		WT G							
12		WT G							

**RELEASING BY / AFFILIATION**  
 BREYDEN TALBERT / GOLDER  
 ANGIE MINARD

**ACCEPTED BY / AFFILIATION**  
 ANGIE MINARD  
 A-ZIP TRES

**DATE**  
 6/16/20  
 6/16

**TIME**  
 1000  
 1120

**DATE**  
 6/16/20  
 6/17/20

**TIME**  
 1010  
 0448

**Temp in °C**  
 1.2  
 4.2  
 22.5  
 22.7

**Received on**  
 Y  
 Y

**Custody Sealed**  
 Y  
 Y

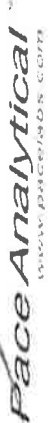
**Samples Intact**  
 Y  
 Y

**DATE SIGNED (MM/DD/YYYY)**  
 6/16/2020

**SAMPLER NAME AND SIGNATURE**  
 PRINT Name of SAMPLER: Brenden Talbert  
 SIGNATURE of SAMPLER: [Signature]

**ADDITIONAL COMMENTS**  
 BMW-1S / 3S Need only be analyzed for Constituents listed on COL #8 SCFA-CM.

**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:	Company Name:	REGULATORY AGENCY	
Address: 13515 Barrett Parkway Drive, Ste 260 Ballwin, MO 63021	Copy To: Ryan Feldmann/Eric Schneider	Company Address:	Address:	NPDES <u>GROUND WATER</u>	DRINKING WATER
Email To: jeffrey_ingram@golder.com	Purchase Order No.:	Pace Quote Reference:	Project Name: Ameren SCL4A - VS	UST	OTHER
Phone: 636-724-9191 Fax: 636-724-9323	Project Number: 153140602	Pace Project Manager:	Jamie Church	Site Location	
Requested Due Date/TAT: Standard		Pace Profile #:	9285	STATE: MO	

Page: / of /

ITEM #	Valid Matrix Codes	Section D Required Client Information	SAMPLE ID (A-Z, 0-9 /, -)	Sample IDs MUST BE UNIQUE	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Requested Analysis Filtered (Y/N)	Temp In °C	Received on Ice (Y/N)	Custody Sealed (Y/N)	Samples Intact (Y/N)
					DATE	TIME								
1	MATRIX DRINKING WATER DW WASTE WATER WW PRODUCT P SOILSOLID S OIL O	MATRIX CODE DW WW P S O	S-06-3		DATE: 6/16/12 TIME: 1331	COMPOSITE START	COMPOSITE FINISH	1	Unpreserved H2SO4 HNO3 HCl NaOH Na2S2O3 Methanol Other	Y	60.7	Y	Y	Y
2									Analysis Test ↑					
3									200.7 Calcium					
4									Fluoride					
5									Sulfate					
6									TDS					
7														
8														
9														
10														
11														
12														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Brendan Talbert	6/16/12	1600	Augie Mc	6/16	1620	
	Augie Mc	6/16	1605	Wesley Vas	6/17	0448	Y Y Y
SAMPLER NAME AND SIGNATURE: PRINT Name of SAMPLER: <u>Brendan Talbert</u> DATE Signed (MM/DD/YYYY): <u>06/16/12</u> SIGNATURE of SAMPLER: <i>[Signature]</i>							





Sample Condition Upon Receipt

WO#: 60340199



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 200C

Thermometer Used: 1299 Type of Ice: Wet Blue  None

Cooler Temperature (°C): As-read 22.8, 24.1, 2.9, 2.2, 0.1 Corr. Factor +0.1 Corrected 22.9, 24.2, 1.0, 2.3, 0.7

Date and initials of person examining contents: 06/22/2014

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>U</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , 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: Jamie Chubb Date: 6/22/20

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

<b>Section A</b> Required Client Information:		<b>Section B</b> Required Project Information:		<b>Section C</b> Invoice Information:	
Company:	Goldier Associates	Report To:	Jeffrey Ingram	Attention:	
Address:	13515 Barrett Parkway Dr., Ste 260 Ballwin, MO 63021	Copy To:	Eric Schnieder, Ryan Feldman	Company Name:	Goldier Associates Inc
Email To:	jeffrey_ingram@golder.com	Purchase Order No.:	COC #8	Address:	
Phone:	636-724-9191 Fax: 636-724-9323	Project Name:	Ameren Sioux Energy Center SCPA-CA	Face Quote Reference:	
Requested Due Date/TAT:	Standard	Project Number:	153140602.0003A	Face Project Manager:	Jamie Church
				Face Profile #:	9285, line 1

**REGULATORY AGENCY**

NPDES  GROUND WATER  DRINKING WATER  
 UST  RCRA  OTHER

Site Location: MO

STATE: MO

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WATER WT WASTE WATER WW PRODUCT P SOILSOLID SL OIL OL WP AR OT TS	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives Unpreserved H <sub>2</sub> SO <sub>4</sub> HNO <sub>3</sub> HCl NaOH Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Methanol Other	Requested Analysis Filtered (Y/N)	Pace Project No./ Lab I.D.
		COMPOSITE START	COMPOSITE END/GRAB					
1	S-TP-3D	WT	G	6/18/20 1150	41		N	Radium 226
2	S-TP-4D	WT	G				N	Radium 226
3	S-TP-5D	WT	G				N	Radium 226
4	S-TP-6S	WT	G				N	Radium 226
5	S-TP-6D	WT	G				N	Radium 226
6	S-TP-8D	WT	G				N	Radium 226
7	S-UG-3	WT	G				N	Radium 226
8	S-CA-DUP-1	WT	G				N	Radium 226
9	S-CA-DUP-2	WT	G				N	Radium 226
10	S-CA-FB-1	WT	G				N	Radium 226
11	S-CA-FB-2	WT	G				N	Radium 226
12	S-CA-MS-1	WT	G				N	Radium 226

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
	Angie Memmons	6/18/20	1320	Angie Memmons	6/18	1325						
	Angie Memmons	6/18/20	1325	MEYER/ROCE	6/18/20	0400						

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Eric Schnieder

SIGNATURE of SAMPLER: *[Signature]*

DATE Signed (MM/DD/YYYY): 06/18/20



**GOLDER**

**MEMORANDUM**

**DATE** July 23, 2020

**Project No.** 153140602

**TO** Project File  
Golder Associates

**CC** Amanda Derhake, Jeff Ingram

**FROM** Annie Muehlfarth

**EMAIL** [AMuehlfarth@golder.com](mailto:AMuehlfarth@golder.com)

**DATA VALIDATION SUMMARY, SIOUX ENERGY CENTER – SCPA-CA – VERIFICATION SAMPLING - DATA PACKAGE 60340199**

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 duplicate criterion was not met, the associated sample result was qualified as an estimate (J).
- When matrix spike/matrix spike duplicate (MS/MSD) criterion was not met, the associated sample result was qualified as an estimate (J).
- 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 Associates Inc.  
 Project Name: Ameren - SEC - SCPA-CA  
 Reviewer: A. Muehlfarth

Project Manager: J. Ingram  
 Project Number: 153140602  
 Validation Date: 07/22/2020

Laboratory: Pace Analytical Services, LLC

SDG #: 60340199

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 S-BMW-1S, S-BMW-3S, S-LMW-2S, S-LMW-4S, S-AM-1S, S-AM-1D, S-TP-4D, S-TP-5D, S-TP-6S, S-TP-6D, S-TP-8D, S-UG-3, S-CA-DUP-1, S-CA-DUP-2, S-CA-FB-1, S-CA-TP-6D-MS, S-CA-TP-6D-MSD, S-LMW-1S, S-LMW-5S, S-LMW-6S, S-PZ-1S, S-PZ-9D, S-TP-2D, S-TP-3D, S-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>06/16 - 06/18/2020</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>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 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

<b>Blanks</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
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"/>	

<b>Laboratory Control Sample (LCS)</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
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"/>	

<b>Duplicates</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Were field duplicates collected (note original and duplicate sample names)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	S-CA-DUP-1 @ S-TP-6S
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	S-CA-DUP-2 @ S-UG-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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

<b>Blind Standards</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
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"/>	

<b>Matrix Spike/Matrix Spike Duplicate (MS/MSD)</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
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:**

COC: Coolers out of temp had only radium, no qualification

Dilutions: Chloride and Sulfate diluted in multiple samples, no qualification necessary.

MB: 2689906: Sodium (210J), associated with samples -99018 through -99025

2683038: Chloride (0.43J), associated with samples -99006 through -99015, detections in sample > reporting limit or non-detect, no qualification necessary

2687769: Chloride (0.40J), associated with samples -99018 through -99025, detections in sample > reporting limit or non-detect, no qualification necessary







July 28, 2020

Jeffrey Ingram  
Golder Associates  
13515 Barrett Parkway Drive  
Suite 260  
Ballwin, MO 63021

RE: Project: AMEREN - SIOUX ENERGY CENTER  
Pace Project No.: 60343327

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory on July 22, 2020. 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



## 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 - SIOUX ENERGY CENTER

Pace Project No.: 60343327

---

### **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 #: 200030

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

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

## SAMPLE SUMMARY

Project: AMEREN - SIOUX ENERGY CENTER

Pace Project No.: 60343327

---

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60343327001	S-PZ-1S	Water	07/21/20 16:27	07/22/20 11:10
60343327002	S-PZ-9D	Water	07/21/20 16:10	07/22/20 11:10
60343327003	S-CA-FB-1	Water	07/21/20 16:15	07/22/20 11:10
60343327004	S-CA-DUP-1	Water	07/21/20 08:00	07/22/20 11:10

## REPORT OF LABORATORY ANALYSIS

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

### SAMPLE ANALYTE COUNT

Project: AMEREN - SIOUX ENERGY CENTER

Pace Project No.: 60343327

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60343327001	S-PZ-1S	EPA 200.7	JDE	1	PASI-K
60343327002	S-PZ-9D	EPA 200.7	JDE	1	PASI-K
60343327003	S-CA-FB-1	EPA 200.7	JDE	1	PASI-K
60343327004	S-CA-DUP-1	EPA 200.7	JDE	1	PASI-K

PASI-K = Pace Analytical Services - Kansas City

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN - SIOUX ENERGY CENTER

Pace Project No.: 60343327

---

**Sample: S-PZ-1S**      **Lab ID: 60343327001**    Collected: 07/21/20 16:27    Received: 07/22/20 11:10    Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Molybdenum	<b>9290</b>	ug/L	20.0	1.7	1	07/23/20 09:58	07/27/20 17:27	7439-98-7	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN - SIOUX ENERGY CENTER

Pace Project No.: 60343327

---

**Sample: S-PZ-9D**      **Lab ID: 60343327002**    Collected: 07/21/20 16:10    Received: 07/22/20 11:10    Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City									
Molybdenum	<b>10.2J</b>	ug/L	20.0	1.7	1	07/23/20 09:58	07/27/20 17:34	7439-98-7	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN - SIOUX ENERGY CENTER

Pace Project No.: 60343327

---

**Sample: S-CA-FB-1**      **Lab ID: 60343327003**      Collected: 07/21/20 16:15      Received: 07/22/20 11:10      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City									
Molybdenum	<b>2.4J</b>	ug/L	20.0	1.7	1	07/23/20 09:58	07/27/20 17:36	7439-98-7	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN - SIOUX ENERGY CENTER

Pace Project No.: 60343327

---

**Sample: S-CA-DUP-1**      **Lab ID: 60343327004**      Collected: 07/21/20 08:00      Received: 07/22/20 11:10      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City									
Molybdenum	<b>6.2J</b>	ug/L	20.0	1.7	1	07/23/20 09:58	07/27/20 17:44	7439-98-7	

### REPORT OF LABORATORY ANALYSIS

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



### QUALITY CONTROL DATA

Project: AMEREN - SIOUX ENERGY CENTER

Pace Project No.: 60343327

QC Batch: 667104	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: 60343327001, 60343327002, 60343327003, 60343327004

METHOD BLANK: 2701658 Matrix: Water  
Associated Lab Samples: 60343327001, 60343327002, 60343327003, 60343327004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Molybdenum	ug/L	<1.7	20.0	1.7	07/27/20 17:22	

LABORATORY CONTROL SAMPLE: 2701659

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Molybdenum	ug/L	1000	1040	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2701660 2701661

Parameter	Units	2701660		2701661		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60343327001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Molybdenum	ug/L	9290	1000	1000	10200	10200	90	86	70-130	0	20

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

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

## QUALIFIERS

Project: AMEREN - SIOUX ENERGY CENTER

Pace Project No.: 60343327

---

### 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.

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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

### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN - SIOUX ENERGY CENTER

Pace Project No.: 60343327

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60343327001	S-PZ-1S	EPA 200.7	667104	EPA 200.7	667162
60343327002	S-PZ-9D	EPA 200.7	667104	EPA 200.7	667162
60343327003	S-CA-FB-1	EPA 200.7	667104	EPA 200.7	667162
60343327004	S-CA-DUP-1	EPA 200.7	667104	EPA 200.7	667162

### REPORT OF LABORATORY ANALYSIS

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



Sample Condition Upon Receipt

WO#: 60343327



60343327

Client Name: GOLDER 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 2 PL C

Thermometer Used: T298 Type of Ice: Wet Blue  None

Cooler Temperature (°C): As-read 0.0 Corr. Factor -0.5 Corrected 0.1

Date and initials of person examining contents: 07/22/20 JJC

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>LA</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) <u>Lot #003173</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: Jamie Chung Date: 7/22/20



# CHAIN-OF-CUSTODY / Analytical Request Document

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

<b>Section A</b> Required Client Information:	<b>Section B</b> Required Project Information:	<b>Section C</b> 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	Company Name: Golder Associates Inc
Email To: jeffrey_ingram@golder.com	Purchase Order No.:	Address:
Phone: 636-724-9191 Fax: 636-724-9323	Project Name: Ameren - Sioux Energy Center	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
Requested Due Date/TAT: Standard	Project Number: 153140602 - 0003	Site Location: MO STATE:
		Pace Quote Reference: Pace Project Manager: Jamie Church Pace Profile #: 9285, line 3

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW WATER 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)	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives Unpreserved H <sub>2</sub> SO <sub>4</sub> HNO <sub>3</sub> HCl NaOH Na <sub>2</sub> O <sub>2</sub> Methanol Other	Requested Analysis Filtered (Y/N)	Requested Analysis Filtered (Y/N)	Temp in °C	Received on Ice (Y/N)	Custody Sealed (Y/N)	Samples Intact (Y/N)				
			COMPOSITE START	COMPOSITE END/GRAB												DATE	TIME	DATE	TIME
1	S - PZ - 15				G	WT	7/21/10	1627											
2	S - PZ - 9D				G	WT	7/21/10	1610											
3	S - CA - FB - 1				G	WT	7/21/10	1615											
4	S - CA - MS - 1				G	WT													
5	S - CA - MSD - 1				G	WT													
6	S - CA - Dup - 1				G	WT													
7					G	WT													
8					G	WT													
9					G	WT													
10					G	WT													
11					G	WT													
12					G	WT													
ADDITIONAL COMMENTS												RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS	
Eric Schnieder												Eric Schnieder/Pace	7/21/10	1615	Eric Schnieder/Pace	7/21/10	1615	Y	Y
Signature of Sampler: Eric Schnieder												Signature of Sampler: Eric Schnieder	DATE Signed (MM/DD/YYYY): 07/21/10						

\*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** July 29, 2020**Project No.** 153140602**TO** Project File  
Golder Associates**CC** Amanda Derhake, Jeff Ingram**FROM** Annie Muehlfarth**EMAIL** [AMuehlfarth@golder.com](mailto:AMuehlfarth@golder.com)**DATA VALIDATION SUMMARY, SIOUX ENERGY CENTER – SCPA-CA – CORRECTIVE ACTION  
SAMPLING - DATA PACKAGE 60343327**

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 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 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 Associates Inc.  
 Project Name: Ameren - SEC - SCPA-CA  
 Reviewer: A. Muehlfarth

Project Manager: J. Ingram  
 Project Number: 153140602  
 Validation Date: 07/29/2020

Laboratory: Pace Analytical

SDG #: 60343327

Analytical Method (type and no.): EPA 200.7 (Total Metals)

Matrix:  Air  Soil/Sed.  Water  Waste

Sample Names S-PZ-1S, S-PZ-9D, S-CA-FB-1, S-CA-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>07/21/2020</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:

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

<b>Blanks</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
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"/>	S-CA-FB-1 @ S-PZ-9D
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"/>	

<b>Laboratory Control Sample (LCS)</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
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"/>	

<b>Duplicates</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Were field duplicates collected (note original and duplicate sample names)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	S-CA-DUP-1 @ S-PZ-9D
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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
d) Were lab dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

<b>Blind Standards</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
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"/>	

<b>Matrix Spike/Matrix Spike Duplicate (MS/MSD)</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
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:**

FB: S-CA-FB-1: Molybdenum (2.4 J)

DUP: S-CA-DUP-1: Molybdenum RPD (48%) exceeded limit (>20%)





October 06, 2020

Jeffrey Ingram  
Golder Associates  
13515 Barrett Parkway Drive  
Suite 260  
Ballwin, MO 63021

RE: Project: AMEREN - SIOUX  
Pace Project No.: 60349877

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory on September 30, 2020. 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



## 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 - SIOUX

Pace Project No.: 60349877

---

### **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 #: 200030

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

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

## SAMPLE SUMMARY

Project: AMEREN - SIOUX

Pace Project No.: 60349877

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60349877001	S-TP-3D	Water	09/29/20 09:25	09/30/20 05:02
60349877002	S-PZ-1S	Water	09/29/20 14:28	09/30/20 05:02
60349877003	S-PZ-9D	Water	09/29/20 12:48	09/30/20 05:02
60349877004	S-TP-4D	Water	09/29/20 10:10	09/30/20 05:02
60349877005	S-TP-5D	Water	09/29/20 10:50	09/30/20 05:02
60349877006	S-DUP-1	Water	09/29/20 08:00	09/30/20 05:02
60349877007	S-FB-1	Water	09/29/20 11:00	09/30/20 05:02
60349877008	S-TP-6S	Water	09/29/20 15:25	09/30/20 05:02
60349877009	S-TP-6D	Water	09/29/20 15:20	09/30/20 05:02
60349877010	S-TP-8D	Water	09/29/20 14:40	09/30/20 05:02
60349877011	S-TP-2D	Water	09/29/20 09:38	09/30/20 05:02

## REPORT OF LABORATORY ANALYSIS

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

### SAMPLE ANALYTE COUNT

Project: AMEREN - SIOUX

Pace Project No.: 60349877

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60349877001	S-TP-3D	EPA 200.7	JLH	1	PASI-K
60349877002	S-PZ-1S	EPA 200.7	JLH	1	PASI-K
60349877003	S-PZ-9D	EPA 200.7	JLH	1	PASI-K
60349877004	S-TP-4D	EPA 200.7	JLH	1	PASI-K
60349877005	S-TP-5D	EPA 200.7	JLH	1	PASI-K
60349877006	S-DUP-1	EPA 200.7	JLH	1	PASI-K
60349877007	S-FB-1	EPA 200.7	JLH	1	PASI-K
60349877008	S-TP-6S	EPA 200.7	JLH	1	PASI-K
60349877009	S-TP-6D	EPA 200.7	JLH	1	PASI-K
60349877010	S-TP-8D	EPA 200.7	JLH	1	PASI-K
60349877011	S-TP-2D	EPA 200.7	JLH	1	PASI-K

PASI-K = Pace Analytical Services - Kansas City

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN - SIOUX

Pace Project No.: 60349877

---

**Sample: S-TP-3D**      **Lab ID: 60349877001**      Collected: 09/29/20 09:25      Received: 09/30/20 05:02      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Molybdenum	<1.7	ug/L	20.0	1.7	1	10/05/20 13:30	10/06/20 12:10	7439-98-7	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN - SIOUX

Pace Project No.: 60349877

---

**Sample: S-PZ-1S**      **Lab ID: 60349877002**    Collected: 09/29/20 14:28    Received: 09/30/20 05:02    Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>	Analytical Method: EPA 200.7    Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Molybdenum	<b>2980</b>	ug/L	20.0	1.7	1	10/05/20 13:30	10/06/20 12:18	7439-98-7	

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN - SIOUX

Pace Project No.: 60349877

---

**Sample: S-PZ-9D**      **Lab ID: 60349877003**      Collected: 09/29/20 12:48      Received: 09/30/20 05:02      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Molybdenum	<b>4.5J</b>	ug/L	20.0	1.7	1	10/05/20 13:30	10/06/20 12:20	7439-98-7	

## REPORT OF LABORATORY ANALYSIS

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



### ANALYTICAL RESULTS

Project: AMEREN - SIOUX

Pace Project No.: 60349877

---

**Sample: S-TP-4D**      **Lab ID: 60349877004**      Collected: 09/29/20 10:10      Received: 09/30/20 05:02      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City									
Molybdenum	<1.7	ug/L	20.0	1.7	1	10/05/20 13:30	10/06/20 12:23	7439-98-7	

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN - SIOUX

Pace Project No.: 60349877

---

**Sample: S-TP-5D**      **Lab ID: 60349877005**      Collected: 09/29/20 10:50      Received: 09/30/20 05:02      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Molybdenum	<b>208</b>	ug/L	20.0	1.7	1	10/05/20 13:30	10/06/20 12:25	7439-98-7	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN - SIOUX

Pace Project No.: 60349877

---

**Sample: S-DUP-1**      **Lab ID: 60349877006**      Collected: 09/29/20 08:00      Received: 09/30/20 05:02      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Molybdenum	<1.7	ug/L	20.0	1.7	1	10/05/20 13:30	10/06/20 12:28	7439-98-7	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN - SIOUX

Pace Project No.: 60349877

---

**Sample: S-FB-1**      **Lab ID: 60349877007**    Collected: 09/29/20 11:00    Received: 09/30/20 05:02    Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City									
Molybdenum	<1.7	ug/L	20.0	1.7	1	10/05/20 13:30	10/06/20 12:35	7439-98-7	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN - SIOUX

Pace Project No.: 60349877

---

**Sample: S-TP-6S**      **Lab ID: 60349877008**      Collected: 09/29/20 15:25      Received: 09/30/20 05:02      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Molybdenum	<b>2.5J</b>	ug/L	20.0	1.7	1	10/05/20 13:30	10/06/20 12:38	7439-98-7	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN - SIOUX

Pace Project No.: 60349877

---

**Sample: S-TP-6D**      **Lab ID: 60349877009**    Collected: 09/29/20 15:20    Received: 09/30/20 05:02    Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City									
Molybdenum	<1.7	ug/L	20.0	1.7	1	10/05/20 13:30	10/06/20 12:40	7439-98-7	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN - SIOUX

Pace Project No.: 60349877

---

**Sample: S-TP-8D**      **Lab ID: 60349877010**      Collected: 09/29/20 14:40      Received: 09/30/20 05:02      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City									
Molybdenum	<1.7	ug/L	20.0	1.7	1	10/05/20 13:30	10/06/20 12:43	7439-98-7	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN - SIOUX

Pace Project No.: 60349877

**Sample: S-TP-2D**      **Lab ID: 60349877011**      Collected: 09/29/20 09:38      Received: 09/30/20 05:02      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City									
Molybdenum	<1.7	ug/L	20.0	1.7	1	10/05/20 13:30	10/06/20 12:47	7439-98-7	

### REPORT OF LABORATORY ANALYSIS

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



### QUALITY CONTROL DATA

Project: AMEREN - SIOUX

Pace Project No.: 60349877

QC Batch:	680765	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: 60349877001, 60349877002, 60349877003, 60349877004, 60349877005, 60349877006, 60349877007, 60349877008, 60349877009, 60349877010, 60349877011

METHOD BLANK: 2752213 Matrix: Water

Associated Lab Samples: 60349877001, 60349877002, 60349877003, 60349877004, 60349877005, 60349877006, 60349877007, 60349877008, 60349877009, 60349877010, 60349877011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Molybdenum	ug/L	<1.7	20.0	1.7	10/06/20 12:06	

LABORATORY CONTROL SAMPLE: 2752214

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Molybdenum	ug/L	1000	929	93	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2752215 2752216

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60349877001 Result	Spike Conc.	Spike Conc.	Result						
Molybdenum	ug/L	<1.7	1000	1000	942	922	94	92	70-130	2	20

MATRIX SPIKE SAMPLE: 2752217

Parameter	Units	60349877010 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Molybdenum	ug/L	<1.7	1000	899	90	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

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

## QUALIFIERS

Project: AMEREN - SIOUX

Pace Project No.: 60349877

---

### 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.

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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

**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: AMEREN - SIOUX

Pace Project No.: 60349877

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60349877001	S-TP-3D	EPA 200.7	680765	EPA 200.7	680859
60349877002	S-PZ-1S	EPA 200.7	680765	EPA 200.7	680859
60349877003	S-PZ-9D	EPA 200.7	680765	EPA 200.7	680859
60349877004	S-TP-4D	EPA 200.7	680765	EPA 200.7	680859
60349877005	S-TP-5D	EPA 200.7	680765	EPA 200.7	680859
60349877006	S-DUP-1	EPA 200.7	680765	EPA 200.7	680859
60349877007	S-FB-1	EPA 200.7	680765	EPA 200.7	680859
60349877008	S-TP-6S	EPA 200.7	680765	EPA 200.7	680859
60349877009	S-TP-6D	EPA 200.7	680765	EPA 200.7	680859
60349877010	S-TP-8D	EPA 200.7	680765	EPA 200.7	680859
60349877011	S-TP-2D	EPA 200.7	680765	EPA 200.7	680859

**REPORT OF LABORATORY ANALYSIS**

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



Sample Condition Upon Receipt

WO#: 60349877



Client Name: Goinder

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: T294 Type of Ice: Wet Blue  None

Cooler Temperature (°C): As-read 0.5 Corr. Factor - 0.4 Corrected 0.1

Date and initials of person examining contents: 9/30/20 HP

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 checked="" 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: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT# <u>603173</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 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

<b>Section A</b> Required Client Information:		<b>Section B</b> Required Project Information:		<b>Section C</b> Invoice Information:	
Company: <b>Golder Associates</b>	Report To: <b>Jeffrey Ingram</b>	Report To: <b>Jeffrey Ingram</b>	Attention:	Company Name:	
Address: <b>13515 Barrett Parkway Drive, Ste 260 Ballwin, MO 63021</b>	Copy To: <b>Ryan Feldmann/Eric Schneider</b>	Address:		Address:	
Email To: <b>jeffrey_ingram@golder.com</b>	Purchase Order No.:	Page Quote Reference:		Page Project Manager:	
Phone: <b>636-724-9191</b>	Project Name: <b>Ameren - Sioux</b>	Page Project Manager:		Page Profile #:	
Requested Due Date/TAT: <b>Standard</b>	Project Number: <b>153140602.0003A</b>	Site Location:		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	ACCEPTED BY / AFFILIATION	DATE	TIME	DATE	TIME	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														
1		DRINKING WATER WATER WASTE WATER PRODUCT SOIL/SOLID OIL	WT G	G	DATE	TIME	DATE	TIME												
2			WT G	G	9/29/10	0925		1												
3			WT G	G		0175														
4			WT G	G		0425														
5			WT G	G		1428														
6			WT G	G		1010														
7			WT G	G		1050														
8			WT G	G		1100														
9			WT G	G		1525														
10			WT G	G		1520														
11			WT G	G		1440														
12			WT G	G																

Additional Comments: **Handwritten notes and signatures**

Relinquished by: **Handwritten signature** / Affiliation: **Handwritten** / Date: **9/29/10** / Time: **1610**

Accepted by: **Handwritten signature** / Affiliation: **Handwritten** / Date: **9/30/10** / Time: **0502**

Residual Chlorine (Y/N): **Handwritten**

200.7 Molybdenum: **Handwritten**

200.8 Arsenic: **Handwritten**

Project No./ Lab I.D.: **10349877**

MS/MSD Taken: **TP-3D**

NPDES: **GROUND WATER**

RCRA: **DRINKING WATER**

UST: **OTHER**

Other: **OTHER**

Site Location: **MO**

State: **MO**

Reference: **Jamie Church**

Project Manager: **9285**

Profile #:

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: **Eric Schneider**

SIGNATURE of SAMPLER: **Handwritten signature**

DATE Signed (MM/DD/YY): **09/29/10**



# 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 - Sixty - 0003A  
 Project Number: 153140602.0003A

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

Page: 2 of 2

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW PRODUCT P SOLID OIL	Matrix Code (see valid codes to left)	COLLECTED		SAMPLE TYPE (G=FRAB C=COMP)	# OF CONTAINERS	Preservatives Unpreserved H <sub>2</sub> SO <sub>4</sub> HNO <sub>3</sub> HCl NaOH Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Methanol Other	Requested Analysis Filtered (Y/N)	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS	
			COMPOSITE START	COMPOSITE END/GRAB											
1		WT G	DATE	TIME	G	1	↑ Analysis Test								
		WT G	9/29/20	0938											
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													
ADDITIONAL COMMENTS 5-TP-2D 9/29/20 1610 Family Transfer Passi 9/29/20 0502 0.1 Residual Chlorine (Y/N) 60349877 Pace Project No. / Lab I.D.															

**Section D**  
 Required Client Information:  
 SAMPLE ID (A-Z, 0-9 / .)  
 Sample IDs MUST BE UNIQUE

Temp in °C

Received on

Custody

Sealed Cooler

Samples Inlet

SAMPLER NAME AND SIGNATURE  
 PRINT Name of SAMPLER: Eric Schneider  
 SIGNATURE of SAMPLER: [Signature]  
 DATE SIGNED (MM/DD/YYYY): 09/29/20



## MEMORANDUM

**DATE** November 24, 2020

**Project No.** 153140602

**TO** Project File  
Golder Associates

**CC** Amanda Derhake, Jeff Ingram

**FROM** Annie Muehlfarth

**EMAIL** [AMuehlfarth@golder.com](mailto:AMuehlfarth@golder.com)

### **DATA VALIDATION SUMMARY, SIOUX ENERGY CENTER – SCPA-CA – ADDITIONAL SAMPLING - DATA PACKAGE 60349877**

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).

## QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates  
 Project Name: Ameren- Sioux - SCPA-CA  
 Reviewer: A. Muehlfarth

Project Manager: J. Ingram  
 Project Number: 153140602  
 Validation Date: 11/24/2020

Laboratory: Pace Analytical - KS

SDG #: 60349877

Analytical Method (type and no.): EPA 200.7 (Total Metals)

Matrix:  Air  Soil/Sed.  Water  Waste

Sample Names S-TP-3D, S-PZ-1S, S-PZ-9D, S-TP-4D, S-TP-5D, S-DUP-1, S-FB-1, S-TP-6S, S-TP-6D, S-TP-8D, S-TP-2D

**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>9/29/2020</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>BTT, EMS</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, S.Cond., Turb, Temp, DO, ORP</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

<b>Blanks</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
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"/>	S-FB-1 @ S-TP-5D
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"/>	

<b>Laboratory Control Sample (LCS)</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
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"/>	

<b>Duplicates</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Were field duplicates collected (note original and duplicate sample names)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	S-DUP-1 @ S-TP-4D
b) Were field dup. precision criteria met (note RPD)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	RPD: 0% (<20%)
c) Were lab duplicates analyzed (note original and duplicate samples)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
d) Were lab dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

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

<b>Matrix Spike/Matrix Spike Duplicate (MS/MSD)</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
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:**

None.



December 17, 2020

Jeffrey Ingram  
Golder Associates  
13515 Barrett Parkway Drive  
Suite 260  
Ballwin, MO 63021

RE: Project: AMEREN SCPA  
Pace Project No.: 60354368

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory between November 13, 2020 and November 18, 2020. 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



## 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 SCPA

Pace Project No.: 60354368

---

### **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 #: 9526

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 #: 200030

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

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

## SAMPLE SUMMARY

Project: AMEREN SCPA

Pace Project No.: 60354368

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60354368001	S-UMW-1D	Water	11/11/20 09:30	11/13/20 03:54
60354368002	S-UMW-6D	Water	11/12/20 15:15	11/13/20 03:54
60354368003	S-UMW-FB-1	Water	11/11/20 09:50	11/13/20 03:54
60354368004	S-UMW-2D	Water	11/13/20 10:00	11/14/20 04:00
60354368005	S-UMW-3D	Water	11/13/20 14:05	11/14/20 04:00
60354368006	S-UMW-4D	Water	11/13/20 12:55	11/14/20 04:00
60354368007	S-UMW-5D	Water	11/13/20 08:45	11/14/20 04:00
60354368008	S-UMW-DUP-1	Water	11/13/20 08:00	11/14/20 04:00
60354368009	S-UMW-MS-1 (S-UMW-2D)	Water	11/13/20 10:00	11/14/20 04:00
60354368010	S-UMW-MSD-1 (S-UMW-2D)	Water	11/13/20 10:00	11/14/20 04:00
60354368011	S-BMW-1D	Water	11/16/20 14:05	11/18/20 04:15
60354368012	S-BMW-3D	Water	11/16/20 13:10	11/18/20 04:15

## REPORT OF LABORATORY ANALYSIS

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

### SAMPLE ANALYTE COUNT

Project: AMEREN SCPA

Pace Project No.: 60354368

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60354368001	S-UMW-1D	EPA 200.7	HKC	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	LDB	3	PASI-K
60354368002	S-UMW-6D	EPA 200.7	HKC	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	LDB	3	PASI-K
60354368003	S-UMW-FB-1	EPA 200.7	HKC	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	LDB	3	PASI-K
60354368004	S-UMW-2D	EPA 200.7	HKC	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	LDB	3	PASI-K
60354368005	S-UMW-3D	EPA 200.7	HKC	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	LDB	3	PASI-K
60354368006	S-UMW-4D	EPA 200.7	HKC	12	PASI-K
		EPA 200.8	JGP	3	PASI-K

### REPORT OF LABORATORY ANALYSIS

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

### SAMPLE ANALYTE COUNT

Project: AMEREN SCPA

Pace Project No.: 60354368

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60354368007	S-UMW-5D	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	LDB	3	PASI-K
		EPA 200.7	HKC	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
60354368008	S-UMW-DUP-1	SM 2540C	MAP	1	PASI-K
		EPA 300.0	LDB	3	PASI-K
		EPA 200.7	HKC	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	LDB	3	PASI-K
		EPA 200.7	HKC	12	PASI-K
60354368009	S-UMW-MS-1 (S-UMW-2D)	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60354368010	S-UMW-MSD-1 (S-UMW-2D)	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60354368011	S-BMW-1D	EPA 200.7	HKC	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	HKC	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
60354368012	S-BMW-3D	EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	HKC	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA

### REPORT OF LABORATORY ANALYSIS

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

### SAMPLE ANALYTE COUNT

Project: AMEREN SCPA

Pace Project No.: 60354368

---

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
--------	-----------	--------	----------	-------------------	------------

---

PASI-K = Pace Analytical Services - Kansas City

PASI-PA = Pace Analytical Services - Greensburg

### REPORT OF LABORATORY ANALYSIS

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



## ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60354368

**Sample: S-UMW-1D**      **Lab ID: 60354368001**      Collected: 11/11/20 09:30      Received: 11/13/20 03:54      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>233</b>	ug/L	5.0	1.8	1	12/06/20 12:00	12/08/20 20:01	7440-39-3	
Boron	<b>266</b>	ug/L	100	11.7	1	12/06/20 12:00	12/08/20 20:01	7440-42-8	B
Calcium	<b>64300</b>	ug/L	200	32.4	1	12/06/20 12:00	12/08/20 20:01	7440-70-2	
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	12/06/20 12:00	12/08/20 20:01	7440-48-4	
Iron	<b>12000</b>	ug/L	50.0	26.8	1	12/06/20 12:00	12/08/20 20:01	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 20:01	7439-92-1	
Lithium	<b>12.7</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 20:01	7439-93-2	
Magnesium	<b>16800</b>	ug/L	50.0	19.7	1	12/06/20 12:00	12/08/20 20:01	7439-95-4	
Manganese	<b>328</b>	ug/L	5.0	0.97	1	12/06/20 12:00	12/08/20 20:01	7439-96-5	
Molybdenum	<b>50.3</b>	ug/L	20.0	1.7	1	12/06/20 12:00	12/08/20 20:01	7439-98-7	
Potassium	<b>4700</b>	ug/L	500	189	1	12/06/20 12:00	12/08/20 20:01	7440-09-7	
Sodium	<b>15600</b>	ug/L	500	107	1	12/06/20 12:00	12/08/20 20:01	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>7.4</b>	ug/L	1.0	0.086	1	12/06/20 10:34	12/09/20 14:33	7440-38-2	
Cadmium	<b>&lt;0.056</b>	ug/L	0.50	0.056	1	12/06/20 10:34	12/09/20 14:33	7440-43-9	
Selenium	<b>0.19J</b>	ug/L	1.0	0.18	1	12/06/20 10:34	12/09/20 14:33	7782-49-2	B
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>188</b>	mg/L	20.0	8.4	1		11/18/20 11:22		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>304</b>	mg/L	5.0	5.0	1		11/17/20 10:13		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>17.1</b>	mg/L	1.0	0.36	1		12/05/20 23:18	16887-00-6	
Fluoride	<b>0.25</b>	mg/L	0.20	0.085	1		12/05/20 23:18	16984-48-8	
Sulfate	<b>50.4</b>	mg/L	10.0	4.2	10		12/05/20 23:49	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60354368

**Sample: S-UMW-6D**      **Lab ID: 60354368002**      Collected: 11/12/20 15:15      Received: 11/13/20 03:54      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	125	ug/L	5.0	1.8	1	12/06/20 12:00	12/08/20 20:04	7440-39-3	
Boron	829	ug/L	100	11.7	1	12/06/20 12:00	12/08/20 20:04	7440-42-8	
Calcium	85500	ug/L	200	32.4	1	12/06/20 12:00	12/08/20 20:04	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	12/06/20 12:00	12/08/20 20:04	7440-48-4	
Iron	5150	ug/L	50.0	26.8	1	12/06/20 12:00	12/08/20 20:04	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 20:04	7439-92-1	
Lithium	5.2J	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 20:04	7439-93-2	
Magnesium	20100	ug/L	50.0	19.7	1	12/06/20 12:00	12/08/20 20:04	7439-95-4	
Manganese	604	ug/L	5.0	0.97	1	12/06/20 12:00	12/08/20 20:04	7439-96-5	
Molybdenum	63.0	ug/L	20.0	1.7	1	12/06/20 12:00	12/08/20 20:04	7439-98-7	
Potassium	4820	ug/L	500	189	1	12/06/20 12:00	12/08/20 20:04	7440-09-7	
Sodium	10800	ug/L	500	107	1	12/06/20 12:00	12/08/20 20:04	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	0.45J	ug/L	1.0	0.086	1	12/06/20 10:34	12/09/20 14:35	7440-38-2	B
Cadmium	<0.056	ug/L	0.50	0.056	1	12/06/20 10:34	12/09/20 14:35	7440-43-9	
Selenium	<0.18	ug/L	1.0	0.18	1	12/06/20 10:34	12/09/20 14:35	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	224	mg/L	20.0	8.4	1		11/18/20 13:14		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	391	mg/L	10.0	10.0	1		11/17/20 16:29		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	14.1	mg/L	1.0	0.36	1		12/06/20 00:05	16887-00-6	
Fluoride	0.40	mg/L	0.20	0.085	1		12/06/20 00:05	16984-48-8	
Sulfate	75.5	mg/L	10.0	4.2	10		12/06/20 00:21	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60354368

Sample: S-UMW-FB-1 Lab ID: 60354368003 Collected: 11/11/20 09:50 Received: 11/13/20 03:54 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
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	12/06/20 12:00	12/08/20 20:06	7440-39-3	
Boron	23.5J	ug/L	100	11.7	1	12/06/20 12:00	12/08/20 20:06	7440-42-8	B
Calcium	<32.4	ug/L	200	32.4	1	12/06/20 12:00	12/08/20 20:06	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	12/06/20 12:00	12/08/20 20:06	7440-48-4	
Iron	<26.8	ug/L	50.0	26.8	1	12/06/20 12:00	12/08/20 20:06	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 20:06	7439-92-1	
Lithium	<4.6	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 20:06	7439-93-2	
Magnesium	<19.7	ug/L	50.0	19.7	1	12/06/20 12:00	12/08/20 20:06	7439-95-4	
Manganese	<0.97	ug/L	5.0	0.97	1	12/06/20 12:00	12/08/20 20:06	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	12/06/20 12:00	12/08/20 20:06	7439-98-7	
Potassium	199J	ug/L	500	189	1	12/06/20 12:00	12/08/20 20:06	7440-09-7	B
Sodium	183J	ug/L	500	107	1	12/06/20 12:00	12/10/20 12:31	7440-23-5	B
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<0.086	ug/L	1.0	0.086	1	12/06/20 10:34	12/09/20 14:37	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	12/06/20 10:34	12/09/20 14:37	7440-43-9	
Selenium	<0.18	ug/L	1.0	0.18	1	12/06/20 10:34	12/09/20 14:37	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<8.4	mg/L	20.0	8.4	1		11/18/20 11:26		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<5.0	mg/L	5.0	5.0	1		11/17/20 10:13		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<0.36	mg/L	1.0	0.36	1		12/06/20 00:36	16887-00-6	
Fluoride	<0.085	mg/L	0.20	0.085	1		12/06/20 00:36	16984-48-8	
Sulfate	<0.42	mg/L	1.0	0.42	1		12/06/20 00:36	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60354368

**Sample: S-UMW-2D**      **Lab ID: 60354368004**      Collected: 11/13/20 10:00      Received: 11/14/20 04:00      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>89.3</b>	ug/L	5.0	1.8	1	12/06/20 12:00	12/08/20 20:39	7440-39-3	
Boron	<b>18300</b>	ug/L	100	11.7	1	12/06/20 12:00	12/08/20 20:39	7440-42-8	M1
Calcium	<b>250000</b>	ug/L	200	32.4	1	12/06/20 12:00	12/08/20 20:39	7440-70-2	M1
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	12/06/20 12:00	12/08/20 20:39	7440-48-4	
Iron	<b>363</b>	ug/L	50.0	26.8	1	12/06/20 12:00	12/08/20 20:39	7439-89-6	
Lead	<b>4.9J</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 20:39	7439-92-1	
Lithium	<b>30.2</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 20:39	7439-93-2	
Magnesium	<b>6220</b>	ug/L	50.0	19.7	1	12/06/20 12:00	12/08/20 20:39	7439-95-4	
Manganese	<b>227</b>	ug/L	5.0	0.97	1	12/06/20 12:00	12/08/20 20:39	7439-96-5	
Molybdenum	<b>1060</b>	ug/L	20.0	1.7	1	12/06/20 12:00	12/08/20 20:39	7439-98-7	
Potassium	<b>27900</b>	ug/L	500	189	1	12/06/20 12:00	12/08/20 20:39	7440-09-7	
Sodium	<b>55700</b>	ug/L	500	107	1	12/06/20 12:00	12/08/20 20:39	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>3.2</b>	ug/L	1.0	0.086	1	12/06/20 10:34	12/09/20 14:58	7440-38-2	B
Cadmium	<b>0.074J</b>	ug/L	0.50	0.056	1	12/06/20 10:34	12/09/20 14:58	7440-43-9	B
Selenium	<b>&lt;0.18</b>	ug/L	1.0	0.18	1	12/06/20 10:34	12/09/20 14:58	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>160</b>	mg/L	20.0	8.4	1		11/19/20 10:35		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>1090</b>	mg/L	13.3	13.3	1		11/17/20 16:30		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>19.8</b>	mg/L	2.0	0.71	2		12/05/20 15:44	16887-00-6	M1
Fluoride	<b>0.22</b>	mg/L	0.20	0.085	1		12/05/20 14:57	16984-48-8	
Sulfate	<b>599</b>	mg/L	50.0	21.0	50		12/05/20 17:02	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60354368

**Sample: S-UMW-3D**      **Lab ID: 60354368005**      Collected: 11/13/20 14:05      Received: 11/14/20 04:00      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>77.8</b>	ug/L	5.0	1.8	1	12/06/20 12:00	12/08/20 20:53	7440-39-3	
Boron	<b>30600</b>	ug/L	100	11.7	1	12/06/20 12:00	12/08/20 20:53	7440-42-8	
Calcium	<b>270000</b>	ug/L	200	32.4	1	12/06/20 12:00	12/08/20 20:53	7440-70-2	
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	12/06/20 12:00	12/08/20 20:53	7440-48-4	
Iron	<b>1000</b>	ug/L	50.0	26.8	1	12/06/20 12:00	12/08/20 20:53	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 20:53	7439-92-1	
Lithium	<b>18.1</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 20:53	7439-93-2	
Magnesium	<b>9740</b>	ug/L	50.0	19.7	1	12/06/20 12:00	12/08/20 20:53	7439-95-4	
Manganese	<b>567</b>	ug/L	5.0	0.97	1	12/06/20 12:00	12/08/20 20:53	7439-96-5	
Molybdenum	<b>3400</b>	ug/L	20.0	1.7	1	12/06/20 12:00	12/08/20 20:53	7439-98-7	
Potassium	<b>20000</b>	ug/L	500	189	1	12/06/20 12:00	12/08/20 20:53	7440-09-7	
Sodium	<b>92400</b>	ug/L	500	107	1	12/06/20 12:00	12/08/20 20:53	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>0.76J</b>	ug/L	1.0	0.086	1	12/06/20 10:34	12/09/20 15:03	7440-38-2	B
Cadmium	<b>0.28J</b>	ug/L	0.50	0.056	1	12/06/20 10:34	12/09/20 15:03	7440-43-9	B
Selenium	<b>0.19J</b>	ug/L	1.0	0.18	1	12/06/20 10:34	12/09/20 15:03	7782-49-2	B
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>131</b>	mg/L	20.0	8.4	1		11/19/20 10:45		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>1370</b>	mg/L	13.3	13.3	1		11/17/20 16:30		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>14.3</b>	mg/L	1.0	0.36	1		12/05/20 17:49	16887-00-6	
Fluoride	<b>0.53</b>	mg/L	0.20	0.085	1		12/05/20 17:49	16984-48-8	
Sulfate	<b>711</b>	mg/L	100	42.0	100		12/05/20 18:05	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60354368

**Sample: S-UMW-4D**      **Lab ID: 60354368006**      Collected: 11/13/20 12:55      Received: 11/14/20 04:00      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>74.9</b>	ug/L	5.0	1.8	1	12/06/20 12:00	12/08/20 20:56	7440-39-3	
Boron	<b>30100</b>	ug/L	100	11.7	1	12/06/20 12:00	12/08/20 20:56	7440-42-8	
Calcium	<b>226000</b>	ug/L	200	32.4	1	12/06/20 12:00	12/08/20 20:56	7440-70-2	
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	12/06/20 12:00	12/08/20 20:56	7440-48-4	
Iron	<b>8060</b>	ug/L	50.0	26.8	1	12/06/20 12:00	12/08/20 20:56	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 20:56	7439-92-1	
Lithium	<b>31.5</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 20:56	7439-93-2	
Magnesium	<b>28400</b>	ug/L	50.0	19.7	1	12/06/20 12:00	12/08/20 20:56	7439-95-4	
Manganese	<b>1590</b>	ug/L	5.0	0.97	1	12/06/20 12:00	12/08/20 20:56	7439-96-5	
Molybdenum	<b>9040</b>	ug/L	20.0	1.7	1	12/06/20 12:00	12/08/20 20:56	7439-98-7	
Potassium	<b>17000</b>	ug/L	500	189	1	12/06/20 12:00	12/08/20 20:56	7440-09-7	
Sodium	<b>75400</b>	ug/L	500	107	1	12/06/20 12:00	12/08/20 20:56	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>0.32J</b>	ug/L	1.0	0.086	1	12/06/20 10:34	12/09/20 15:05	7440-38-2	B
Cadmium	<b>0.59</b>	ug/L	0.50	0.056	1	12/06/20 10:34	12/09/20 15:05	7440-43-9	B
Selenium	<b>&lt;0.18</b>	ug/L	1.0	0.18	1	12/06/20 10:34	12/09/20 15:05	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>157</b>	mg/L	20.0	8.4	1		11/19/20 10:58		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>1290</b>	mg/L	13.3	13.3	1		11/17/20 16:30		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>15.2</b>	mg/L	1.0	0.36	1		12/05/20 18:21	16887-00-6	
Fluoride	<b>0.42</b>	mg/L	0.20	0.085	1		12/05/20 18:21	16984-48-8	
Sulfate	<b>681</b>	mg/L	50.0	21.0	50		12/05/20 18:52	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60354368

**Sample: S-UMW-5D**      **Lab ID: 60354368007**      Collected: 11/13/20 08:45      Received: 11/14/20 04:00      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>346</b>	ug/L	5.0	1.8	1	12/06/20 12:00	12/08/20 20:58	7440-39-3	
Boron	<b>20200</b>	ug/L	100	11.7	1	12/06/20 12:00	12/08/20 20:58	7440-42-8	
Calcium	<b>110000</b>	ug/L	200	32.4	1	12/06/20 12:00	12/08/20 20:58	7440-70-2	
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	12/06/20 12:00	12/08/20 20:58	7440-48-4	
Iron	<b>4040</b>	ug/L	50.0	26.8	1	12/06/20 12:00	12/08/20 20:58	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 20:58	7439-92-1	
Lithium	<b>31.3</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 20:58	7439-93-2	
Magnesium	<b>22500</b>	ug/L	50.0	19.7	1	12/06/20 12:00	12/08/20 20:58	7439-95-4	
Manganese	<b>424</b>	ug/L	5.0	0.97	1	12/06/20 12:00	12/08/20 20:58	7439-96-5	
Molybdenum	<b>2400</b>	ug/L	20.0	1.7	1	12/06/20 12:00	12/08/20 20:58	7439-98-7	
Potassium	<b>11600</b>	ug/L	500	189	1	12/06/20 12:00	12/08/20 20:58	7440-09-7	
Sodium	<b>38600</b>	ug/L	500	107	1	12/06/20 12:00	12/08/20 20:58	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>0.50J</b>	ug/L	1.0	0.086	1	12/06/20 10:34	12/09/20 15:07	7440-38-2	B
Cadmium	<b>0.18J</b>	ug/L	0.50	0.056	1	12/06/20 10:34	12/09/20 15:07	7440-43-9	B
Selenium	<b>&lt;0.18</b>	ug/L	1.0	0.18	1	12/06/20 10:34	12/09/20 15:07	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>253</b>	mg/L	20.0	8.4	1		11/19/20 11:04		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>625</b>	mg/L	10.0	10.0	1		11/17/20 16:30		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>27.1</b>	mg/L	5.0	1.8	5		12/05/20 19:55	16887-00-6	
Fluoride	<b>0.58</b>	mg/L	0.20	0.085	1		12/05/20 19:08	16984-48-8	
Sulfate	<b>181</b>	mg/L	20.0	5.6	20		12/06/20 13:14	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60354368

**Sample: S-UMW-DUP-1**      **Lab ID: 60354368008**      Collected: 11/13/20 08:00      Received: 11/14/20 04:00      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>348</b>	ug/L	5.0	1.8	1	12/06/20 12:00	12/08/20 21:01	7440-39-3	
Boron	<b>20400</b>	ug/L	100	11.7	1	12/06/20 12:00	12/08/20 21:01	7440-42-8	
Calcium	<b>110000</b>	ug/L	200	32.4	1	12/06/20 12:00	12/08/20 21:01	7440-70-2	
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	12/06/20 12:00	12/08/20 21:01	7440-48-4	
Iron	<b>4040</b>	ug/L	50.0	26.8	1	12/06/20 12:00	12/08/20 21:01	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 21:01	7439-92-1	
Lithium	<b>27.6</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 21:01	7439-93-2	
Magnesium	<b>22700</b>	ug/L	50.0	19.7	1	12/06/20 12:00	12/08/20 21:01	7439-95-4	
Manganese	<b>426</b>	ug/L	5.0	0.97	1	12/06/20 12:00	12/08/20 21:01	7439-96-5	
Molybdenum	<b>2430</b>	ug/L	20.0	1.7	1	12/06/20 12:00	12/08/20 21:01	7439-98-7	
Potassium	<b>11600</b>	ug/L	500	189	1	12/06/20 12:00	12/08/20 21:01	7440-09-7	
Sodium	<b>38500</b>	ug/L	500	107	1	12/06/20 12:00	12/08/20 21:01	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>0.49J</b>	ug/L	1.0	0.086	1	12/06/20 10:34	12/09/20 15:09	7440-38-2	B
Cadmium	<b>0.17J</b>	ug/L	0.50	0.056	1	12/06/20 10:34	12/09/20 15:09	7440-43-9	B
Selenium	<b>0.19J</b>	ug/L	1.0	0.18	1	12/06/20 10:34	12/09/20 15:09	7782-49-2	B
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>244</b>	mg/L	20.0	8.4	1		11/19/20 11:09		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>625</b>	mg/L	10.0	10.0	1		11/17/20 16:30		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>26.3</b>	mg/L	5.0	1.9	5		12/06/20 13:29	16887-00-6	
Fluoride	<b>0.64</b>	mg/L	0.20	0.085	1		12/05/20 20:10	16984-48-8	
Sulfate	<b>180</b>	mg/L	50.0	21.0	50		12/05/20 20:26	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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



### ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60354368

**Sample: S-BMW-1D**      **Lab ID: 60354368011**      Collected: 11/16/20 14:05      Received: 11/18/20 04:15      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City									
Barium	312	ug/L	5.0	1.8	1	12/06/20 12:00	12/08/20 19:58	7440-39-3	
Boron	199	ug/L	100	11.7	1	12/06/20 12:00	12/08/20 19:58	7440-42-8	
Calcium	130000	ug/L	200	32.4	1	12/06/20 12:00	12/08/20 19:58	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	12/06/20 12:00	12/08/20 19:58	7440-48-4	
Iron	9010	ug/L	50.0	26.8	1	12/06/20 12:00	12/08/20 19:58	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 19:58	7439-92-1	
Lithium	20.6	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 19:58	7439-93-2	
Magnesium	29000	ug/L	50.0	19.7	1	12/06/20 12:00	12/08/20 19:58	7439-95-4	
Manganese	882	ug/L	5.0	0.97	1	12/06/20 12:00	12/08/20 19:58	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	12/06/20 12:00	12/08/20 19:58	7439-98-7	
Potassium	2720	ug/L	500	189	1	12/06/20 12:00	12/08/20 19:58	7440-09-7	
Sodium	6810	ug/L	500	107	1	12/06/20 12:00	12/08/20 19:58	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City									
Arsenic	0.23J	ug/L	1.0	0.086	1	12/06/20 10:34	12/09/20 15:24	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	12/06/20 10:34	12/09/20 15:24	7440-43-9	
Selenium	<0.18	ug/L	1.0	0.18	1	12/06/20 10:34	12/09/20 15:24	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	397	mg/L	20.0	8.4	1		11/19/20 16:47		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C Pace Analytical Services - Kansas City									
Total Dissolved Solids	498	mg/L	10.0	10.0	1		11/19/20 15:06		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City									
Chloride	7.1	mg/L	1.0	0.39	1		12/08/20 02:31	16887-00-6	
Fluoride	0.30	mg/L	0.20	0.075	1		12/08/20 02:31	16984-48-8	
Sulfate	58.0	mg/L	5.0	1.4	5		12/08/20 02:45	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SCPA

Pace Project No.: 60354368

**Sample: S-BMW-3D**      **Lab ID: 60354368012**      Collected: 11/16/20 13:10      Received: 11/18/20 04:15      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>658</b>	ug/L	5.0	1.8	1	12/06/20 12:00	12/08/20 20:01	7440-39-3	
Boron	<b>59.1J</b>	ug/L	100	11.7	1	12/06/20 12:00	12/08/20 20:01	7440-42-8	
Calcium	<b>103000</b>	ug/L	200	32.4	1	12/06/20 12:00	12/08/20 20:01	7440-70-2	
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	12/06/20 12:00	12/08/20 20:01	7440-48-4	
Iron	<b>7040</b>	ug/L	50.0	26.8	1	12/06/20 12:00	12/08/20 20:01	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 20:01	7439-92-1	
Lithium	<b>24.5</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 20:01	7439-93-2	
Magnesium	<b>25000</b>	ug/L	50.0	19.7	1	12/06/20 12:00	12/08/20 20:01	7439-95-4	
Manganese	<b>524</b>	ug/L	5.0	0.97	1	12/06/20 12:00	12/08/20 20:01	7439-96-5	
Molybdenum	<b>&lt;1.7</b>	ug/L	20.0	1.7	1	12/06/20 12:00	12/08/20 20:01	7439-98-7	
Potassium	<b>3490</b>	ug/L	500	189	1	12/06/20 12:00	12/08/20 20:01	7440-09-7	
Sodium	<b>5580</b>	ug/L	500	107	1	12/06/20 12:00	12/08/20 20:01	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>0.097J</b>	ug/L	1.0	0.086	1	12/06/20 10:34	12/09/20 15:26	7440-38-2	
Cadmium	<b>&lt;0.056</b>	ug/L	0.50	0.056	1	12/06/20 10:34	12/09/20 15:26	7440-43-9	
Selenium	<b>&lt;0.18</b>	ug/L	1.0	0.18	1	12/06/20 10:34	12/09/20 15:26	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>356</b>	mg/L	20.0	8.4	1		11/19/20 16:52		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>395</b>	mg/L	10.0	10.0	1		11/19/20 15:06		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>8.1</b>	mg/L	1.0	0.39	1		12/08/20 03:00	16887-00-6	
Fluoride	<b>0.30</b>	mg/L	0.20	0.075	1		12/08/20 03:00	16984-48-8	
Sulfate	<b>25.2</b>	mg/L	5.0	1.4	5		12/08/20 03:14	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60354368

QC Batch:	693105	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: 60354368001, 60354368002, 60354368003, 60354368004, 60354368005, 60354368006, 60354368007, 60354368008

METHOD BLANK:	2799487	Matrix:	Water
---------------	---------	---------	-------

Associated Lab Samples: 60354368001, 60354368002, 60354368003, 60354368004, 60354368005, 60354368006, 60354368007, 60354368008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	12/08/20 19:57	
Boron	ug/L	28.9J	100	11.7	12/08/20 19:57	
Calcium	ug/L	<32.4	200	32.4	12/08/20 19:57	
Cobalt	ug/L	<1.5	5.0	1.5	12/08/20 19:57	
Iron	ug/L	<26.8	50.0	26.8	12/08/20 19:57	
Lead	ug/L	<4.6	10.0	4.6	12/08/20 19:57	
Lithium	ug/L	<4.6	10.0	4.6	12/08/20 19:57	
Magnesium	ug/L	<19.7	50.0	19.7	12/08/20 19:57	
Manganese	ug/L	<0.97	5.0	0.97	12/08/20 19:57	
Molybdenum	ug/L	<1.7	20.0	1.7	12/08/20 19:57	
Potassium	ug/L	325J	500	189	12/08/20 19:57	
Sodium	ug/L	399J	500	107	12/10/20 12:28	

LABORATORY CONTROL SAMPLE: 2799488

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1020	102	85-115	
Boron	ug/L	1000	998	100	85-115	
Calcium	ug/L	10000	10200	102	85-115	
Cobalt	ug/L	1000	1040	104	85-115	
Iron	ug/L	10000	10300	103	85-115	
Lead	ug/L	1000	1040	104	85-115	
Lithium	ug/L	1000	1060	106	85-115	
Magnesium	ug/L	10000	10200	102	85-115	
Manganese	ug/L	1000	1010	101	85-115	
Molybdenum	ug/L	1000	996	100	85-115	
Potassium	ug/L	10000	10500	105	85-115	
Sodium	ug/L	10000	11300	113	85-115	

MATRIX SPIKE SAMPLE: 2799489

Parameter	Units	60354369004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	54.5	1000	1060	100	70-130	
Boron	ug/L	14500	1000	16000	145	70-130	M1
Calcium	ug/L	248000	10000	264000	159	70-130	M1
Cobalt	ug/L	<1.5	1000	1010	101	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

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

### QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60354368

MATRIX SPIKE SAMPLE:		2799489					
Parameter	Units	60354369004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Iron	ug/L	260	10000	10300	101	70-130	
Lead	ug/L	<4.6	1000	998	100	70-130	
Lithium	ug/L	45.2	1000	1040	99	70-130	
Magnesium	ug/L	47400	10000	58500	111	70-130	
Manganese	ug/L	1430	1000	2460	103	70-130	
Molybdenum	ug/L	2550	1000	3650	110	70-130	
Potassium	ug/L	5520	10000	15800	102	70-130	
Sodium	ug/L	176000	10000	189000	133	70-130	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		2799490			2799491							
Parameter	Units	60354368004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	89.3	1000	1000	1070	1050	98	96	70-130	2	20	
Boron	ug/L	18300	1000	1000	19000	18800	61	48	70-130	1	20	M1
Calcium	ug/L	250000	10000	10000	252000	250000	25	-3	70-130	1	20	M1
Cobalt	ug/L	<1.5	1000	1000	984	968	98	97	70-130	2	20	
Iron	ug/L	363	10000	10000	10200	10000	99	97	70-130	2	20	
Lead	ug/L	4.9J	1000	1000	972	957	97	95	70-130	2	20	
Lithium	ug/L	30.2	1000	1000	1010	993	98	96	70-130	2	20	
Magnesium	ug/L	6220	10000	10000	15400	15200	92	90	70-130	2	20	
Manganese	ug/L	227	1000	1000	1180	1160	96	94	70-130	2	20	
Molybdenum	ug/L	1060	1000	1000	2010	1990	96	94	70-130	1	20	
Potassium	ug/L	27900	10000	10000	36800	36400	89	85	70-130	1	20	
Sodium	ug/L	55700	10000	10000	63600	62700	79	70	70-130	1	20	

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

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

### QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60354368

QC Batch:	693106	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: 60354368011, 60354368012

METHOD BLANK: 2799492 Matrix: Water

Associated Lab Samples: 60354368011, 60354368012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	12/08/20 18:54	
Boron	ug/L	<11.7	100	11.7	12/08/20 18:54	
Calcium	ug/L	47.9J	200	32.4	12/08/20 18:54	
Cobalt	ug/L	<1.5	5.0	1.5	12/08/20 18:54	
Iron	ug/L	<26.8	50.0	26.8	12/08/20 18:54	
Lead	ug/L	<4.6	10.0	4.6	12/08/20 18:54	
Lithium	ug/L	<4.6	10.0	4.6	12/08/20 18:54	
Magnesium	ug/L	<19.7	50.0	19.7	12/08/20 18:54	
Manganese	ug/L	<0.97	5.0	0.97	12/08/20 18:54	
Molybdenum	ug/L	13.8J	20.0	1.7	12/08/20 18:54	
Potassium	ug/L	224J	500	189	12/08/20 18:54	
Sodium	ug/L	378J	500	107	12/08/20 18:54	

LABORATORY CONTROL SAMPLE: 2799493

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1010	101	85-115	
Boron	ug/L	1000	967	97	85-115	
Calcium	ug/L	10000	10100	101	85-115	
Cobalt	ug/L	1000	1040	104	85-115	
Iron	ug/L	10000	10000	100	85-115	
Lead	ug/L	1000	1050	105	85-115	
Lithium	ug/L	1000	1040	104	85-115	
Magnesium	ug/L	10000	10100	101	85-115	
Manganese	ug/L	1000	1010	101	85-115	
Molybdenum	ug/L	1000	1010	101	85-115	
Potassium	ug/L	10000	10400	104	85-115	
Sodium	ug/L	10000	10400	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2799494 2799495

Parameter	Units	60354702003		2799495		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Barium	ug/L	331	1000	1310	1330	97	100	70-130	2	20	
Boron	ug/L	86.3J	1000	1050	1070	96	98	70-130	2	20	
Calcium	ug/L	147000	10000	151000	155000	39	77	70-130	2	20 M1	
Cobalt	ug/L	3.3J	1000	994	997	99	99	70-130	0	20	

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

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

**QUALITY CONTROL DATA**

Project: AMEREN SCPA

Pace Project No.: 60354368

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2799494												2799495	
Parameter	Units	60354702003 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual		
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD			
Iron	ug/L	<26.8	10000	10000	9650	9840	96	98	70-130	2	20		
Lead	ug/L	<4.6	1000	1000	995	994	99	99	70-130	0	20		
Lithium	ug/L	44.8	1000	1000	1060	1080	102	103	70-130	1	20		
Magnesium	ug/L	36300	10000	10000	44400	45000	81	87	70-130	1	20		
Manganese	ug/L	804	1000	1000	1750	1760	94	96	70-130	1	20		
Molybdenum	ug/L	6.9J	1000	1000	996	1000	99	99	70-130	0	20		
Potassium	ug/L	8290	10000	10000	17900	18300	96	100	70-130	2	20		
Sodium	ug/L	28900	10000	10000	37600	38400	87	95	70-130	2	20		

MATRIX SPIKE SAMPLE: 2799496									
Parameter	Units	60354369012 Result	Spike	MS	MS	% Rec	Qualifiers		
			Conc.	Result	% Rec	Limits			
Barium	ug/L		332	1000	1320	99	70-130		
Boron	ug/L		66.8J	1000	1020	96	70-130		
Calcium	ug/L		98100	10000	108000	102	70-130		
Cobalt	ug/L		<1.5	1000	989	99	70-130		
Iron	ug/L		5380	10000	14900	95	70-130		
Lead	ug/L		<4.6	1000	997	100	70-130		
Lithium	ug/L		31.0	1000	1050	102	70-130		
Magnesium	ug/L		22100	10000	32000	100	70-130		
Manganese	ug/L		382	1000	1370	99	70-130		
Molybdenum	ug/L		<1.7	1000	984	98	70-130		
Potassium	ug/L		3660	10000	13700	100	70-130		
Sodium	ug/L		5190	10000	15100	99	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**

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

**QUALITY CONTROL DATA**

Project: AMEREN SCPA

Pace Project No.: 60354368

QC Batch:	693110	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:	60354368001, 60354368002, 60354368003, 60354368004, 60354368005, 60354368006, 60354368007, 60354368008		

METHOD BLANK:	2799510	Matrix:	Water
Associated Lab Samples:	60354368001, 60354368002, 60354368003, 60354368004, 60354368005, 60354368006, 60354368007, 60354368008		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	ug/L	0.48J	1.0	0.086	12/09/20 14:30	
Cadmium	ug/L	0.35J	0.50	0.056	12/09/20 14:30	
Selenium	ug/L	0.43J	1.0	0.18	12/09/20 14:30	

LABORATORY CONTROL SAMPLE: 2799511						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	40	37.3	93	85-115	
Cadmium	ug/L	40	36.0	90	85-115	
Selenium	ug/L	40	36.9	92	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2799512												2799513	
Parameter	Units	60354368004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Arsenic	ug/L	3.2	40	40	40.9	41.5	94	96	70-130	1	20		
Cadmium	ug/L	0.074J	40	40	34.0	34.7	85	86	70-130	2	20		
Selenium	ug/L	<0.18	40	40	35.1	35.2	88	88	70-130	0	20		

MATRIX SPIKE SAMPLE: 2799514											
Parameter	Units	60354702002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers				
Arsenic	ug/L	0.58J	40	37.2	92	70-130					
Cadmium	ug/L	0.071J	40	34.7	87	70-130					
Selenium	ug/L	4.4	40	38.7	86	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**

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

**QUALITY CONTROL DATA**

Project: AMEREN SCPA

Pace Project No.: 60354368

QC Batch: 693111

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: 60354368011, 60354368012

METHOD BLANK: 2799515

Matrix: Water

Associated Lab Samples: 60354368011, 60354368012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	ug/L	<0.086	1.0	0.086	12/09/20 15:35	
Cadmium	ug/L	<0.056	0.50	0.056	12/09/20 15:35	
Selenium	ug/L	<0.18	1.0	0.18	12/09/20 15:35	

LABORATORY CONTROL SAMPLE: 2799516

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	40	37.1	93	85-115	
Cadmium	ug/L	40	36.0	90	85-115	
Selenium	ug/L	40	36.6	91	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2799517 2799518

Parameter	Units	60354702003		MS		MSD		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result						
Arsenic	ug/L	0.74J	40	40	37.2	36.2	91	89	70-130	3	20		
Cadmium	ug/L	0.11J	40	40	34.3	33.5	86	83	70-130	3	20		
Selenium	ug/L	6.9	40	40	40.8	40.0	85	83	70-130	2	20		

MATRIX SPIKE SAMPLE: 2799519

Parameter	Units	60354369012 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	1.3	40	37.5	90	70-130	
Cadmium	ug/L	<0.056	40	34.7	87	70-130	
Selenium	ug/L	<0.18	40	34.9	87	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**

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



### QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60354368

QC Batch: 689882

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory:

Pace Analytical Services - Kansas City

Associated Lab Samples: 60354368001, 60354368002, 60354368003

METHOD BLANK: 2787067

Matrix: Water

Associated Lab Samples: 60354368001, 60354368002, 60354368003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<8.4	20.0	8.4	11/18/20 11:01	

LABORATORY CONTROL SAMPLE: 2787068

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	493	99	90-110	

SAMPLE DUPLICATE: 2787069

Parameter	Units	60354383003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	376	375	0	10	

SAMPLE DUPLICATE: 2787070

Parameter	Units	60354416002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	95.0	96.1	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

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

### QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60354368

QC Batch: 690119

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60354368004, 60354368005, 60354368006, 60354368007, 60354368008

METHOD BLANK: 2788016

Matrix: Water

Associated Lab Samples: 60354368004, 60354368005, 60354368006, 60354368007, 60354368008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<8.4	20.0	8.4	11/19/20 08:56	

LABORATORY CONTROL SAMPLE: 2788017

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	497	99	90-110	

SAMPLE DUPLICATE: 2788018

Parameter	Units	60354502001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	258	259	0	10	

SAMPLE DUPLICATE: 2788019

Parameter	Units	60354368004 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	160	161	0	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

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

**QUALITY CONTROL DATA**

Project: AMEREN SCPA

Pace Project No.: 60354368

QC Batch: 690355

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60354368011, 60354368012

METHOD BLANK: 2788858

Matrix: Water

Associated Lab Samples: 60354368011, 60354368012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<8.4	20.0	8.4	11/19/20 14:53	

LABORATORY CONTROL SAMPLE: 2788859

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	488	98	90-110	

SAMPLE DUPLICATE: 2788860

Parameter	Units	60354702003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	460	461	0	10	

SAMPLE DUPLICATE: 2788861

Parameter	Units	60354369012 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	310	309	0	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**

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

### QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60354368

QC Batch: 689837

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60354368001, 60354368003

METHOD BLANK: 2786727

Matrix: Water

Associated Lab Samples: 60354368001, 60354368003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/17/20 10:12	

LABORATORY CONTROL SAMPLE: 2786728

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1000	100	80-120	

SAMPLE DUPLICATE: 2786729

Parameter	Units	60354177003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	5860	5550	5	10	

SAMPLE DUPLICATE: 2786730

Parameter	Units	60354371002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1100	1110	0	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

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

### QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60354368

QC Batch: 689985

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60354368002, 60354368004, 60354368005, 60354368006, 60354368007, 60354368008

METHOD BLANK: 2787540

Matrix: Water

Associated Lab Samples: 60354368002, 60354368004, 60354368005, 60354368006, 60354368007, 60354368008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/17/20 16:29	

LABORATORY CONTROL SAMPLE: 2787541

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

SAMPLE DUPLICATE: 2787542

Parameter	Units	60354371001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	625	626	0	10	

SAMPLE DUPLICATE: 2787543

Parameter	Units	60354368004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1090	1150	6	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

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

**QUALITY CONTROL DATA**

Project: AMEREN SCPA

Pace Project No.: 60354368

QC Batch: 690481

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60354368011, 60354368012

METHOD BLANK: 2789436

Matrix: Water

Associated Lab Samples: 60354368011, 60354368012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/19/20 15:03	

LABORATORY CONTROL SAMPLE: 2789437

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1000	100	80-120	

SAMPLE DUPLICATE: 2789438

Parameter	Units	60354702003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	628	606	4	10	

SAMPLE DUPLICATE: 2789439

Parameter	Units	60354369012 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	396	412	4	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**

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

### QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60354368

QC Batch:	693080	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: 60354368001, 60354368002, 60354368003, 60354368004, 60354368005, 60354368006, 60354368007, 60354368008

METHOD BLANK: 2799169 Matrix: Water  
Associated Lab Samples: 60354368001, 60354368002, 60354368003, 60354368004, 60354368005, 60354368006, 60354368007, 60354368008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.36	1.0	0.36	12/05/20 13:40	
Fluoride	mg/L	<0.085	0.20	0.085	12/05/20 13:40	
Sulfate	mg/L	<0.42	1.0	0.42	12/05/20 13:40	

METHOD BLANK: 2800119 Matrix: Water  
Associated Lab Samples: 60354368001, 60354368002, 60354368003, 60354368004, 60354368005, 60354368006, 60354368007, 60354368008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.36	1.0	0.36	12/06/20 08:51	
Fluoride	mg/L	<0.085	0.20	0.085	12/06/20 08:51	
Sulfate	mg/L	<0.42	1.0	0.42	12/06/20 08:51	

LABORATORY CONTROL SAMPLE: 2799170

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	2.4	96	90-110	
Sulfate	mg/L	5	4.6	93	90-110	

LABORATORY CONTROL SAMPLE: 2800120

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	2.5	99	90-110	
Sulfate	mg/L	5	5.0	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2799171 2799172

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60354368004 Result	Spike Conc.	Spike Conc.	Result						
Chloride	mg/L	19.8	10	10	33.1	29.9	133	101	80-120	10	15 M1
Fluoride	mg/L	0.22	2.5	2.5	2.5	2.5	91	91	80-120	0	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

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

### QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60354368

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2799171												2799172	
Parameter	Units	60354368004 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Sulfate	mg/L	599	250	250	844	829	98	92	80-120	2	15		

MATRIX SPIKE SAMPLE: 2799173		60355272002	Spike	MS	MS	% Rec	Qualifiers
Parameter	Units	Result	Conc.	Result	% Rec	Limits	
Chloride	mg/L	34200	25000	59000	99	80-120	
Fluoride	mg/L	ND	12500	12500	100	80-120	
Sulfate	mg/L	ND	25000	28500	100	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.

### REPORT OF LABORATORY ANALYSIS

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



**QUALITY CONTROL DATA**

Project: AMEREN SCPA

Pace Project No.: 60354368

QC Batch: 693100

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: 60354368011, 60354368012

METHOD BLANK: 2799457

Matrix: Water

Associated Lab Samples: 60354368011, 60354368012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	12/07/20 08:24	
Fluoride	mg/L	<0.075	0.20	0.075	12/07/20 08:24	
Sulfate	mg/L	<0.28	1.0	0.28	12/07/20 08:24	

METHOD BLANK: 2802268

Matrix: Water

Associated Lab Samples: 60354368011, 60354368012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	12/08/20 08:14	
Fluoride	mg/L	<0.075	0.20	0.075	12/08/20 08:14	
Sulfate	mg/L	<0.28	1.0	0.28	12/08/20 08:14	

LABORATORY CONTROL SAMPLE: 2799458

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	99	90-110	
Fluoride	mg/L	2.5	2.5	101	90-110	
Sulfate	mg/L	5	4.7	95	90-110	

LABORATORY CONTROL SAMPLE: 2802269

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	2.6	102	90-110	
Sulfate	mg/L	5	5.1	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2799459

2799460

Parameter	Units	60354369012		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	Result	MSD Result	% Rec	% Rec					
Chloride	mg/L	13.4	5	5	17.6	17.9	84	91	80-120	2	15		
Fluoride	mg/L	0.34	2.5	2.5	2.3	2.5	79	86	80-120	7	15		
Sulfate	mg/L	38.1	10	10	50.9	54.3	128	162	80-120	7	15 E		

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**

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

### QUALITY CONTROL DATA

Project: AMEREN SCPA

Pace Project No.: 60354368

MATRIX SPIKE SAMPLE:		2799461					
Parameter	Units	60354369019 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	76.7	50	125	96	80-120	
Fluoride	mg/L	0.16J	2.5	2.4	90	80-120	
Sulfate	mg/L	462	250	705	97	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.

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60354368

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: S-UMW-1D</b> <b>Lab ID: 60354368001</b> Collected: 11/11/20 09:30      Received: 11/13/20 03:54      Matrix: Water PWS:      Site ID:      Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	<b>0.787 ± 0.641 (0.873)</b> <b>C:NA T:84%</b>	pCi/L	12/11/20 13:11	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>1.43 ± 0.752 (1.39)</b> <b>C:65% T:79%</b>	pCi/L	12/10/20 15:27	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60354368

**Sample: S-UMW-6D**      **Lab ID: 60354368002**      Collected: 11/12/20 15:15      Received: 11/13/20 03:54      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	<b>0.149 ± 0.356 (0.201)</b> <b>C:NA T:94%</b>	pCi/L	12/11/20 13:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>-0.0863 ± 0.562 (1.30)</b> <b>C:68% T:80%</b>	pCi/L	12/10/20 15:27	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60354368

**Sample: S-UMW-FB-1**      **Lab ID: 60354368003**      Collected: 11/11/20 09:50      Received: 11/13/20 03:54      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	<b>0.222 ± 0.506 (0.896)</b> <b>C:NA T:94%</b>	pCi/L	12/11/20 13:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>-0.131 ± 0.468 (1.10)</b> <b>C:65% T:92%</b>	pCi/L	12/10/20 15:27	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60354368

**Sample: S-UMW-2D**      **Lab ID: 60354368004**      Collected: 11/13/20 10:00      Received: 11/14/20 04:00      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	<b>0.178 ± 0.347 (0.605)</b> <b>C:NA T:96%</b>	pCi/L	12/11/20 13:40	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>-0.0977 ± 0.602 (1.43)</b> <b>C:67% T:77%</b>	pCi/L	12/10/20 18:13	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60354368

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: S-UMW-3D</b> <b>Lab ID: 60354368005</b> Collected: 11/13/20 14:05      Received: 11/14/20 04:00      Matrix: Water PWS:      Site ID:      Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.372 ± 0.494 (0.794)</b> <b>C:NA T:94%</b>	pCi/L	12/11/20 13:40	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.771 ± 0.434 (0.785)</b> <b>C:69% T:90%</b>	pCi/L	12/10/20 15:13	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60354368

**Sample: S-UMW-4D**      **Lab ID: 60354368006**      Collected: 11/13/20 12:55      Received: 11/14/20 04:00      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	<b>-0.289 ± 0.431 (1.02)</b> <b>C:NA T:85%</b>	pCi/L	12/11/20 13:40	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.767 ± 0.409 (0.713)</b> <b>C:67% T:88%</b>	pCi/L	12/10/20 15:13	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60354368

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: S-UMW-5D</b> <b>Lab ID: 60354368007</b> Collected: 11/13/20 08:45      Received: 11/14/20 04:00      Matrix: Water PWS:      Site ID:      Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.154 ± 0.490 (0.902)</b> <b>C:NA T:88%</b>	pCi/L	12/11/20 13:40	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.765 ± 0.738 (1.53)</b> <b>C:67% T:81%</b>	pCi/L	12/10/20 18:12	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60354368

**Sample: S-UMW-DUP-1**      **Lab ID: 60354368008**      Collected: 11/13/20 08:00      Received: 11/14/20 04:00      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	<b>0.461 ± 0.481 (0.719)</b> <b>C:NA T:95%</b>	pCi/L	12/11/20 13:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.767 ± 0.654 (1.34)</b> <b>C:69% T:85%</b>	pCi/L	12/10/20 15:27	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60354368

**Sample: S-UMW-MS-1 (S-UMW-2D)**    **Lab ID: 60354368009**    Collected: 11/13/20 10:00    Received: 11/14/20 04:00    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	<b>96.31 %REC ± NA (NA)</b> <b>C:NA T:NA</b>	pCi/L	12/11/20 13:40	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>69.73 %REC ± NA (NA)</b> <b>C:NA T:NA</b>	pCi/L	12/10/20 18:13	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

**ANALYTICAL RESULTS - RADIOCHEMISTRY**

Project: AMEREN SCPA

Pace Project No.: 60354368

**Sample: S-UMW-MSD-1 (S-UMW-2D)**    **Lab ID: 60354368010**    Collected: 11/13/20 10:00    Received: 11/14/20 04:00    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	<b>74.69 %REC 25.29 RPD ±</b> <b>NA (NA)</b> <b>C:NA T:NA</b>	pCi/L	12/11/20 13:40	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>94.06 %REC 29.70 RPD ±</b> <b>NA (NA )</b> <b>C:NA T:NA</b>	pCi/L	12/10/20 18:13	15262-20-1	

**REPORT OF LABORATORY ANALYSIS**

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60354368

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: S-BMW-1D</b> <b>Lab ID: 60354368011</b> Collected: 11/16/20 14:05      Received: 11/18/20 04:15      Matrix: Water PWS:      Site ID:      Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.142 ± 0.557 (1.07)</b> <b>C:NA T:86%</b>	pCi/L	12/15/20 15:46	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.111 ± 0.359 (0.809)</b> <b>C:67% T:86%</b>	pCi/L	12/15/20 12:04	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60354368

**Sample: S-BMW-3D**      **Lab ID: 60354368012**      Collected: 11/16/20 13:10      Received: 11/18/20 04:15      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	<b>0.124 ± 0.420 (0.810)</b> <b>C:NA T:93%</b>	pCi/L	12/15/20 16:04	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.930 ± 0.445 (0.759)</b> <b>C:67% T:86%</b>	pCi/L	12/15/20 12:04	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60354368

QC Batch: 424223

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: 60354368001, 60354368002, 60354368003, 60354368004, 60354368005, 60354368006, 60354368007, 60354368008, 60354368009, 60354368010

METHOD BLANK: 2050472

Matrix: Water

Associated Lab Samples: 60354368001, 60354368002, 60354368003, 60354368004, 60354368005, 60354368006, 60354368007, 60354368008, 60354368009, 60354368010

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0110 ± 0.353 (0.708) C:NA T:93%	pCi/L	12/11/20 12:56	

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

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

### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60354368

QC Batch: 425303

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: 60354368011, 60354368012

METHOD BLANK: 2055267

Matrix: Water

Associated Lab Samples: 60354368011, 60354368012

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.263 ± 0.437 (0.951) C:68% T:74%	pCi/L	12/15/20 12:33	

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

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



### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60354368

---

QC Batch:	424224	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: 60354368001, 60354368002, 60354368003, 60354368004, 60354368005, 60354368006, 60354368007, 60354368008, 60354368009, 60354368010

---

METHOD BLANK:	2050474	Matrix:	Water
---------------	---------	---------	-------

Associated Lab Samples: 60354368001, 60354368002, 60354368003, 60354368004, 60354368005, 60354368006, 60354368007, 60354368008, 60354368009, 60354368010

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.656 ± 0.434 (0.817) C:70% T:75%	pCi/L	12/10/20 15:19	

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

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

### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA

Pace Project No.: 60354368

QC Batch: 425302

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: 60354368011, 60354368012

METHOD BLANK: 2055264

Matrix: Water

Associated Lab Samples: 60354368011, 60354368012

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.000 ± 0.363 (0.786) C:NA T:81%	pCi/L	12/15/20 15:28	

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

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

## QUALIFIERS

Project: AMEREN SCPA

Pace Project No.: 60354368

---

### 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.

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.

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

## REPORT OF LABORATORY ANALYSIS

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

### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA

Pace Project No.: 60354368

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60354368001	S-UMW-1D	EPA 200.7	693105	EPA 200.7	693136
60354368002	S-UMW-6D	EPA 200.7	693105	EPA 200.7	693136
60354368003	S-UMW-FB-1	EPA 200.7	693105	EPA 200.7	693136
60354368004	S-UMW-2D	EPA 200.7	693105	EPA 200.7	693136
60354368005	S-UMW-3D	EPA 200.7	693105	EPA 200.7	693136
60354368006	S-UMW-4D	EPA 200.7	693105	EPA 200.7	693136
60354368007	S-UMW-5D	EPA 200.7	693105	EPA 200.7	693136
60354368008	S-UMW-DUP-1	EPA 200.7	693105	EPA 200.7	693136
60354368011	S-BMW-1D	EPA 200.7	693106	EPA 200.7	693137
60354368012	S-BMW-3D	EPA 200.7	693106	EPA 200.7	693137
60354368001	S-UMW-1D	EPA 200.8	693110	EPA 200.8	693134
60354368002	S-UMW-6D	EPA 200.8	693110	EPA 200.8	693134
60354368003	S-UMW-FB-1	EPA 200.8	693110	EPA 200.8	693134
60354368004	S-UMW-2D	EPA 200.8	693110	EPA 200.8	693134
60354368005	S-UMW-3D	EPA 200.8	693110	EPA 200.8	693134
60354368006	S-UMW-4D	EPA 200.8	693110	EPA 200.8	693134
60354368007	S-UMW-5D	EPA 200.8	693110	EPA 200.8	693134
60354368008	S-UMW-DUP-1	EPA 200.8	693110	EPA 200.8	693134
60354368011	S-BMW-1D	EPA 200.8	693111	EPA 200.8	693135
60354368012	S-BMW-3D	EPA 200.8	693111	EPA 200.8	693135
60354368001	S-UMW-1D	EPA 903.1	424223		
60354368002	S-UMW-6D	EPA 903.1	424223		
60354368003	S-UMW-FB-1	EPA 903.1	424223		
60354368004	S-UMW-2D	EPA 903.1	424223		
60354368005	S-UMW-3D	EPA 903.1	424223		
60354368006	S-UMW-4D	EPA 903.1	424223		
60354368007	S-UMW-5D	EPA 903.1	424223		
60354368008	S-UMW-DUP-1	EPA 903.1	424223		
60354368009	S-UMW-MS-1 (S-UMW-2D)	EPA 903.1	424223		
60354368010	S-UMW-MSD-1 (S-UMW-2D)	EPA 903.1	424223		
60354368011	S-BMW-1D	EPA 903.1	425302		
60354368012	S-BMW-3D	EPA 903.1	425302		
60354368001	S-UMW-1D	EPA 904.0	424224		
60354368002	S-UMW-6D	EPA 904.0	424224		
60354368003	S-UMW-FB-1	EPA 904.0	424224		
60354368004	S-UMW-2D	EPA 904.0	424224		
60354368005	S-UMW-3D	EPA 904.0	424224		
60354368006	S-UMW-4D	EPA 904.0	424224		
60354368007	S-UMW-5D	EPA 904.0	424224		
60354368008	S-UMW-DUP-1	EPA 904.0	424224		
60354368009	S-UMW-MS-1 (S-UMW-2D)	EPA 904.0	424224		
60354368010	S-UMW-MSD-1 (S-UMW-2D)	EPA 904.0	424224		
60354368011	S-BMW-1D	EPA 904.0	425303		
60354368012	S-BMW-3D	EPA 904.0	425303		
60354368001	S-UMW-1D	SM 2320B	689882		

### REPORT OF LABORATORY ANALYSIS

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

### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA

Pace Project No.: 60354368

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60354368002	S-UMW-6D	SM 2320B	689882		
60354368003	S-UMW-FB-1	SM 2320B	689882		
60354368004	S-UMW-2D	SM 2320B	690119		
60354368005	S-UMW-3D	SM 2320B	690119		
60354368006	S-UMW-4D	SM 2320B	690119		
60354368007	S-UMW-5D	SM 2320B	690119		
60354368008	S-UMW-DUP-1	SM 2320B	690119		
60354368011	S-BMW-1D	SM 2320B	690355		
60354368012	S-BMW-3D	SM 2320B	690355		
60354368001	S-UMW-1D	SM 2540C	689837		
60354368002	S-UMW-6D	SM 2540C	689985		
60354368003	S-UMW-FB-1	SM 2540C	689837		
60354368004	S-UMW-2D	SM 2540C	689985		
60354368005	S-UMW-3D	SM 2540C	689985		
60354368006	S-UMW-4D	SM 2540C	689985		
60354368007	S-UMW-5D	SM 2540C	689985		
60354368008	S-UMW-DUP-1	SM 2540C	689985		
60354368011	S-BMW-1D	SM 2540C	690481		
60354368012	S-BMW-3D	SM 2540C	690481		
60354368001	S-UMW-1D	EPA 300.0	693080		
60354368002	S-UMW-6D	EPA 300.0	693080		
60354368003	S-UMW-FB-1	EPA 300.0	693080		
60354368004	S-UMW-2D	EPA 300.0	693080		
60354368005	S-UMW-3D	EPA 300.0	693080		
60354368006	S-UMW-4D	EPA 300.0	693080		
60354368007	S-UMW-5D	EPA 300.0	693080		
60354368008	S-UMW-DUP-1	EPA 300.0	693080		
60354368011	S-BMW-1D	EPA 300.0	693100		
60354368012	S-BMW-3D	EPA 300.0	693100		

### REPORT OF LABORATORY ANALYSIS

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



Sample Condition Upon Receipt

WO#: 60354368



60354368

Client Name: Golder Assoc.

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  X2pc

Thermometer Used: T299 Type of Ice: Wet  Blue  None

Cooler Temperature (°C): As-read 15.1 Corr. Factor 10.2 Corrected 15.3

Date and initials of person examining contents: 11-13-2020

Temperature should be above freezing to 6°C 15.7, 0.9, 0.3, 0.8 15.9, 1.1, 0.5, 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 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	<u>all coolers out of temp had only Radium samples</u>
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 <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT# <u>603173</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: Jamie Chub Date: 11/14/20





Sample Condition Upon Receipt

WO#: 60354368



60354368

Client Name: Golder Assoc

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  EPIC

Thermometer Used: T299 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 12.7 Corr. Factor +0.2 Corrected 12.9  
Temperature should be above freezing to 6°C 2.2 2.4

Date and initials of person examining contents: 11-14-2020

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	<u>cooler out of temp had only Radon samples</u>
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 <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT# <u>003173</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 10:49 am, 11/16/20

Project Manager Review: \_\_\_\_\_

Date: \_\_\_\_\_







Sample Condition Upon Receipt

WO#: 60354368



60354368

Client Name: Goldy

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  Zylo

Thermometer Used: T099 Type of Ice: Wet  Blue  None

Cooler Temperature (°C): As-read 14.8 Corr. Factor 10.2 Corrected 15.0

Date and initials of person examining contents: 4.18.2020

Temperature should be above freezing to 6°C 13.5, 14.0, 0.6, 0.4, 2.2, 0.6, 13.7, 14.2, 0.8, 0.3, 2.4, 0.8

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	<u>all coolers out of temp</u>
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<u>had only Redium</u>
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input 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 <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT# <u>603173</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 8:37 am, 11/19/20

Project Manager Review Date: \_\_\_\_\_





**GOLDER**

**MEMORANDUM**

**DATE** December 17, 2020

**Project No.** 153140602

**TO** Project File  
Golder Associates

**CC** Amanda Derhake, Jeff Ingram

**FROM** Annie Muehlfarth

**EMAIL** [AMuehlfarth@golder.com](mailto:AMuehlfarth@golder.com)

**DATA VALIDATION SUMMARY, SIOUX ENERGY CENTER – SCPA – DETECTION MONITORING AND ASSESSMENT MONITORING - DATA PACKAGE 60354368**

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).
- When matrix spike/matrix spike duplicate (MS/MSD) criterion was not met, the associated sample result was qualified as an estimate (J).

## QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates  
 Project Name: Ameren- SEC - SCPA  
 Reviewer: A. Muehlfarth

Project Manager: J. Ingram  
 Project Number: 153140602  
 Validation Date: 12/17/2020

Laboratory: Pace Analytical - KS

SDG #: 60354368

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 S-UMW-1D, S-UMW-6D, S-UMW-FB-1, S-UMW-2D, S-UMW-3D, S-UMW-4D, S-UMW-5D, S-UMW-DUP-1, S-UMW-MS-1 (S-UMW-2D), S-UMW-MSD-1 (S-UMW-2D), S-BMW-1D, S-BMW-3D

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

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>11/11/2020 - 11/16/2020</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>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, S.Cond., Turb, Temp, DO, ORP</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 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

<b>Blanks</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
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"/>	

<b>Laboratory Control Sample (LCS)</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
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"/>	

<b>Duplicates</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Were field duplicates collected (note original and duplicate sample names)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	S-UMW-DUP-1 @ S-UMW-5D
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: 6% (<10%)

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

<b>Matrix Spike/Matrix Spike Duplicate (MS/MSD)</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
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:**

All coolers out of temp contained only radium.

Sulfate and Chloride were diluted in several samples, no qualification necessary.

**Method Blanks:**

2799487: Boron (28.9J), Potassium (325J), Sodium (399J), associated with samples -001 through -008. Sample results less than the reporting limit were qualified.

## QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

### Comments/Notes:

2799492: Calcium (47.9J), Molybdenum (13.8J), Potassium (224J), Sodium (378J), associated with samples -011 and -012. Sample results >10x the blank results or non-detect, no qualification necessary.

2799510: Arsenic (0.48J), Cadmium (0.35J), Selenium (0.43J), associated with samples -001 through -008. Sample results less than the reporting limit were qualified.

### Field Blanks:

S-UMW-FB-1 @ S-UMW-1D: Boron (23.5J), Potassium (199J), Sodium (183J). Sample results greater than the reporting limit, no qualification necessary.

### DUP:

S-UMW-DUP-1: Selenium detected in DUP, non-detect in sample.

### MS/MSD:

2799490/2799491: MS/MSD % recovery low for Boron and Calcium, associated with sample -004.

2799494/2799495: MS % recovery low for Calcium. MS/MSD performed on unrelated sample, no qualification necessary.

2799171/2799172: MS % recovery high for Chloride, associated with sample -004.

2799459/2799460: MS/MSD % recovery high for Sulfate. 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
S-UMW-FB-1	Boron	100	U	Detected in method blank, detected in sample <PQL
"	Potassium	500	U	"
"	Sodium	500	U	"
S-UMW-1D	Selenium	1.0	U	"
S-UMW-6D	Arsenic	1.0	U	"
S-UMW-2D	Cadmium	0.50	U	"
S-UMW-3D	Arsenic	1.0	U	"
"	Cadmium	0.50	U	"
"	Selenium	1.0	U	"
S-UMW-4D	Arsenic	1.0	U	"
S-UMW-5D	Arsenic	1.0	U	"
"	Cadmium	0.50	U	"
S-UMW-DUP-1	Arsenic	1.0	U	"
"	Cadmium	0.50	U	"
"	Selenium	1.0	UJ	Detected in method blank, detected in sample <PQL; detected in DUP, ND in sample
S-UMW-5D	Selenium	0.18	UJ	Detected in DUP, ND in sample
S-UMW-2D	Boron	18300	J	MS/MSD recoveries outside control limits
"	Calcium	250000	J	"
"	Chloride	19.8	J	"

Signature: \_\_\_\_\_ *Ann Marshall* \_\_\_\_\_

Date: 12/17/2020



December 28, 2020

Jeffrey Ingram  
Golder Associates  
13515 Barrett Parkway Drive  
Suite 260  
Ballwin, MO 63021

RE: Project: AMEREN SCPA-CA  
Pace Project No.: 60354369

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory between November 13, 2020 and November 18, 2020. 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



## 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 SCPA-CA

Pace Project No.: 60354369

---

### **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 #: 9526

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 #: 200030

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

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

## SAMPLE SUMMARY

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60354369001	S-LMW-1S	Water	11/11/20 11:05	11/13/20 03:54
60354369002	S-LMW-2S	Water	11/12/20 14:15	11/13/20 03:54
60354369003	S-LMW-4S	Water	11/12/20 12:20	11/13/20 03:54
60354369004	S-LMW-5S	Water	11/11/20 15:20	11/13/20 03:54
60354369005	S-LMW-6S	Water	11/11/20 14:30	11/13/20 03:54
60354369006	S-PZ-9D	Water	11/12/20 11:05	11/13/20 03:54
60354369007	S-CA-DUP-2	Water	11/11/20 08:00	11/13/20 03:54
60354369008	S-CA-FB-2	Water	11/12/20 11:35	11/13/20 03:54
60354369009	S-PZ-1S	Water	11/13/20 12:00	11/14/20 04:00
60354369010	S-CA-FB-1	Water	11/13/20 12:30	11/14/20 04:00
60354369011	S-BMW-3S	Water	11/16/20 12:20	11/18/20 04:15
60354369012	S-TP-8D	Water	11/16/20 09:52	11/18/20 04:15
60354369013	S-TP-6S	Water	11/16/20 15:25	11/18/20 04:15
60354369014	S-TP-6D	Water	11/16/20 16:02	11/18/20 04:15
60354369015	S-TP-3D	Water	11/17/20 09:25	11/18/20 04:15
60354369016	S-TP-4D	Water	11/17/20 10:35	11/18/20 04:15
60354369017	S-TP-5D	Water	11/17/20 15:25	11/18/20 04:15
60354369018	S-BMW-1S	Water	11/16/20 14:50	11/18/20 04:15
60354369019	S-TP-2D	Water	11/17/20 14:50	11/18/20 04:15
60354369020	S-AM-1S	Water	11/16/20 11:15	11/18/20 04:15
60354369021	S-AM-1D	Water	11/16/20 10:30	11/18/20 04:15
60354369022	S-UG-3	Water	11/17/20 15:40	11/18/20 04:15
60354369023	S-CA-MS-1 (S-TP-8D)	Water	11/16/20 09:52	11/18/20 04:15
60354369024	S-CA-MSD-1 (S-TP-8D)	Water	11/16/20 09:52	11/18/20 04:15
60354369025	S-CA-DUP-1	Water	11/17/20 08:00	11/18/20 04:15

## REPORT OF LABORATORY ANALYSIS

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

### SAMPLE ANALYTE COUNT

Project: AMEREN SCPA-CA  
Pace Project No.: 60354369

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60354369001	S-LMW-1S	EPA 200.7	HKC	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60354369002	S-LMW-2S	EPA 200.7	HKC	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60354369003	S-LMW-4S	EPA 200.7	HKC	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60354369004	S-LMW-5S	EPA 200.7	HKC	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60354369005	S-LMW-6S	EPA 200.7	HKC	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60354369006	S-PZ-9D	EPA 200.7	HKC	12	PASI-K
		EPA 200.8	JGP	3	PASI-K

### REPORT OF LABORATORY ANALYSIS

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

### SAMPLE ANALYTE COUNT

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60354369007	S-CA-DUP-2	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	HKC	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
60354369008	S-CA-FB-2	SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	HKC	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	HKC	12	PASI-K
60354369009	S-PZ-1S	EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	HKC	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60354369010	S-CA-FB-1	SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	HKC	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60354369011	S-BMW-3S	EPA 200.7	HKC	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		EPA 300.0	CRN2	3	PASI-K

### REPORT OF LABORATORY ANALYSIS

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

### SAMPLE ANALYTE COUNT

Project: AMEREN SCPA-CA  
Pace Project No.: 60354369

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60354369012	S-TP-8D	SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	HKC	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
60354369013	S-TP-6S	SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	HKC	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
60354369014	S-TP-6D	EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	HKC	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60354369015	S-TP-3D	EPA 200.7	HKC	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	HKC	12	PASI-K
60354369016	S-TP-4D	EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K

### REPORT OF LABORATORY ANALYSIS

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

### SAMPLE ANALYTE COUNT

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60354369017	S-TP-5D	EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	HKC	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
60354369018	S-BMW-1S	EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	HKC	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
60354369019	S-TP-2D	EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	HKC	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
60354369020	S-AM-1S	EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	HKC	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
60354369021	S-AM-1D	EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	HKC	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
60354369022	S-UG-3	EPA 300.0	CRN2	3	PASI-K
		EPA 200.7	HKC	12	PASI-K

### REPORT OF LABORATORY ANALYSIS

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

### SAMPLE ANALYTE COUNT

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	MAP	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60354369023	S-CA-MS-1 (S-TP-8D)	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60354369024	S-CA-MSD-1 (S-TP-8D)	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60354369025	S-CA-DUP-1	EPA 200.7	HKC	12	PASI-K
		EPA 200.8	JGP	3	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	LDB	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City

PASI-PA = Pace Analytical Services - Greensburg

### REPORT OF LABORATORY ANALYSIS

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



## ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-LMW-1S**      **Lab ID: 60354369001**      Collected: 11/11/20 11:05      Received: 11/13/20 03:54      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	156	ug/L	5.0	1.8	1	12/06/20 12:00	12/08/20 20:09	7440-39-3	
Boron	645	ug/L	100	11.7	1	12/06/20 12:00	12/08/20 20:09	7440-42-8	
Calcium	85100	ug/L	200	32.4	1	12/06/20 12:00	12/08/20 20:09	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	12/06/20 12:00	12/08/20 20:09	7440-48-4	
Iron	112	ug/L	50.0	26.8	1	12/06/20 12:00	12/08/20 20:09	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 20:09	7439-92-1	
Lithium	18.4	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 20:09	7439-93-2	
Magnesium	20400	ug/L	50.0	19.7	1	12/06/20 12:00	12/08/20 20:09	7439-95-4	
Manganese	41.9	ug/L	5.0	0.97	1	12/06/20 12:00	12/08/20 20:09	7439-96-5	
Molybdenum	77.3	ug/L	20.0	1.7	1	12/06/20 12:00	12/08/20 20:09	7439-98-7	
Potassium	7520	ug/L	500	189	1	12/06/20 12:00	12/08/20 20:09	7440-09-7	
Sodium	21800	ug/L	500	107	1	12/06/20 12:00	12/08/20 20:09	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	2.0	ug/L	1.0	0.086	1	12/06/20 10:34	12/09/20 14:39	7440-38-2	B
Cadmium	<0.056	ug/L	0.50	0.056	1	12/06/20 10:34	12/09/20 14:39	7440-43-9	
Selenium	5.8	ug/L	1.0	0.18	1	12/06/20 10:34	12/09/20 14:39	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	224	mg/L	20.0	8.4	1		11/18/20 11:31		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	8.5	mg/L	5.0	5.0	1		11/17/20 10:13		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	23.3	mg/L	2.0	0.78	2		12/01/20 17:54	16887-00-6	
Fluoride	0.42	mg/L	0.20	0.075	1		12/01/20 17:39	16984-48-8	
Sulfate	75.1	mg/L	20.0	5.6	20		12/01/20 18:08	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-LMW-2S**      **Lab ID: 60354369002**      Collected: 11/12/20 14:15      Received: 11/13/20 03:54      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>133</b>	ug/L	5.0	1.8	1	12/06/20 12:00	12/08/20 20:11	7440-39-3	
Boron	<b>9120</b>	ug/L	100	11.7	1	12/06/20 12:00	12/08/20 20:11	7440-42-8	
Calcium	<b>220000</b>	ug/L	200	32.4	1	12/06/20 12:00	12/08/20 20:11	7440-70-2	
Cobalt	<b>2.3J</b>	ug/L	5.0	1.5	1	12/06/20 12:00	12/08/20 20:11	7440-48-4	
Iron	<b>57.0</b>	ug/L	50.0	26.8	1	12/06/20 12:00	12/08/20 20:11	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 20:11	7439-92-1	
Lithium	<b>31.7</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 20:11	7439-93-2	
Magnesium	<b>40900</b>	ug/L	50.0	19.7	1	12/06/20 12:00	12/08/20 20:11	7439-95-4	
Manganese	<b>599</b>	ug/L	5.0	0.97	1	12/06/20 12:00	12/08/20 20:11	7439-96-5	
Molybdenum	<b>775</b>	ug/L	20.0	1.7	1	12/06/20 12:00	12/08/20 20:11	7439-98-7	
Potassium	<b>7930</b>	ug/L	500	189	1	12/06/20 12:00	12/08/20 20:11	7440-09-7	
Sodium	<b>62200</b>	ug/L	500	107	1	12/06/20 12:00	12/08/20 20:11	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>0.91J</b>	ug/L	1.0	0.086	1	12/06/20 10:34	12/09/20 14:41	7440-38-2	B
Cadmium	<b>0.37J</b>	ug/L	0.50	0.056	1	12/06/20 10:34	12/09/20 14:41	7440-43-9	B
Selenium	<b>&lt;0.18</b>	ug/L	1.0	0.18	1	12/06/20 10:34	12/09/20 14:41	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>420</b>	mg/L	20.0	8.4	1		11/19/20 10:03		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>984</b>	mg/L	13.3	13.3	1		11/17/20 16:29		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>135</b>	mg/L	20.0	7.8	20		12/01/20 19:06	16887-00-6	
Fluoride	<b>0.44</b>	mg/L	0.20	0.075	1		12/01/20 18:23	16984-48-8	
Sulfate	<b>221</b>	mg/L	20.0	5.6	20		12/01/20 19:06	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-LMW-4S**      **Lab ID: 60354369003**      Collected: 11/12/20 12:20      Received: 11/13/20 03:54      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>216</b>	ug/L	5.0	1.8	1	12/06/20 12:00	12/08/20 20:14	7440-39-3	
Boron	<b>473</b>	ug/L	100	11.7	1	12/06/20 12:00	12/08/20 20:14	7440-42-8	
Calcium	<b>175000</b>	ug/L	200	32.4	1	12/06/20 12:00	12/08/20 20:14	7440-70-2	
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	12/06/20 12:00	12/08/20 20:14	7440-48-4	
Iron	<b>32.6J</b>	ug/L	50.0	26.8	1	12/06/20 12:00	12/08/20 20:14	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 20:14	7439-92-1	
Lithium	<b>18.5</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 20:14	7439-93-2	
Magnesium	<b>37500</b>	ug/L	50.0	19.7	1	12/06/20 12:00	12/08/20 20:14	7439-95-4	
Manganese	<b>324</b>	ug/L	5.0	0.97	1	12/06/20 12:00	12/08/20 20:14	7439-96-5	
Molybdenum	<b>1.8J</b>	ug/L	20.0	1.7	1	12/06/20 12:00	12/08/20 20:14	7439-98-7	
Potassium	<b>5220</b>	ug/L	500	189	1	12/06/20 12:00	12/08/20 20:14	7440-09-7	
Sodium	<b>14800</b>	ug/L	500	107	1	12/06/20 12:00	12/08/20 20:14	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>0.64J</b>	ug/L	1.0	0.086	1	12/06/20 10:34	12/09/20 14:43	7440-38-2	B
Cadmium	<b>0.14J</b>	ug/L	0.50	0.056	1	12/06/20 10:34	12/09/20 14:43	7440-43-9	B
Selenium	<b>0.65J</b>	ug/L	1.0	0.18	1	12/06/20 10:34	12/09/20 14:43	7782-49-2	B
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>575</b>	mg/L	20.0	8.4	1		11/19/20 10:10		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>631</b>	mg/L	10.0	10.0	1		11/17/20 16:29		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>2.4</b>	mg/L	1.0	0.39	1		12/01/20 19:21	16887-00-6	B
Fluoride	<b>0.28</b>	mg/L	0.20	0.075	1		12/01/20 19:21	16984-48-8	
Sulfate	<b>36.0</b>	mg/L	5.0	1.4	5		12/01/20 19:35	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-LMW-5S**      **Lab ID: 60354369004**      Collected: 11/11/20 15:20      Received: 11/13/20 03:54      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>54.5</b>	ug/L	5.0	1.8	1	12/06/20 12:00	12/08/20 20:24	7440-39-3	
Boron	<b>14500</b>	ug/L	100	11.7	1	12/06/20 12:00	12/08/20 20:24	7440-42-8	M1
Calcium	<b>248000</b>	ug/L	200	32.4	1	12/06/20 12:00	12/08/20 20:24	7440-70-2	M1
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	12/06/20 12:00	12/08/20 20:24	7440-48-4	
Iron	<b>260</b>	ug/L	50.0	26.8	1	12/06/20 12:00	12/08/20 20:24	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 20:24	7439-92-1	
Lithium	<b>45.2</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 20:24	7439-93-2	
Magnesium	<b>47400</b>	ug/L	50.0	19.7	1	12/06/20 12:00	12/08/20 20:24	7439-95-4	
Manganese	<b>1430</b>	ug/L	5.0	0.97	1	12/06/20 12:00	12/08/20 20:24	7439-96-5	
Molybdenum	<b>2550</b>	ug/L	20.0	1.7	1	12/06/20 12:00	12/08/20 20:24	7439-98-7	
Potassium	<b>5520</b>	ug/L	500	189	1	12/06/20 12:00	12/08/20 20:24	7440-09-7	
Sodium	<b>176000</b>	ug/L	500	107	1	12/06/20 12:00	12/08/20 20:24	7440-23-5	M1
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>0.84J</b>	ug/L	1.0	0.086	1	12/06/20 10:34	12/09/20 14:44	7440-38-2	B
Cadmium	<b>0.66</b>	ug/L	0.50	0.056	1	12/06/20 10:34	12/09/20 14:44	7440-43-9	B
Selenium	<b>&lt;0.18</b>	ug/L	1.0	0.18	1	12/06/20 10:34	12/09/20 14:44	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>318</b>	mg/L	20.0	8.4	1		11/18/20 11:35		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>1690</b>	mg/L	20.0	20.0	1		11/17/20 10:13		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>22.5</b>	mg/L	2.0	0.78	2		12/01/20 20:04	16887-00-6	
Fluoride	<b>0.69</b>	mg/L	0.20	0.075	1		12/01/20 19:50	16984-48-8	
Sulfate	<b>792</b>	mg/L	100	27.8	100		12/01/20 20:18	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-LMW-6S**      **Lab ID: 60354369005**      Collected: 11/11/20 14:30      Received: 11/13/20 03:54      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>51.6</b>	ug/L	5.0	1.8	1	12/06/20 12:00	12/08/20 20:29	7440-39-3	
Boron	<b>17400</b>	ug/L	100	11.7	1	12/06/20 12:00	12/08/20 20:29	7440-42-8	
Calcium	<b>298000</b>	ug/L	200	32.4	1	12/06/20 12:00	12/08/20 20:29	7440-70-2	
Cobalt	<b>8.9</b>	ug/L	5.0	1.5	1	12/06/20 12:00	12/08/20 20:29	7440-48-4	
Iron	<b>450</b>	ug/L	50.0	26.8	1	12/06/20 12:00	12/08/20 20:29	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 20:29	7439-92-1	
Lithium	<b>21.3</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 20:29	7439-93-2	
Magnesium	<b>70400</b>	ug/L	50.0	19.7	1	12/06/20 12:00	12/08/20 20:29	7439-95-4	
Manganese	<b>572</b>	ug/L	5.0	0.97	1	12/06/20 12:00	12/08/20 20:29	7439-96-5	
Molybdenum	<b>2.4J</b>	ug/L	20.0	1.7	1	12/06/20 12:00	12/08/20 20:29	7439-98-7	
Potassium	<b>5400</b>	ug/L	500	189	1	12/06/20 12:00	12/08/20 20:29	7440-09-7	
Sodium	<b>100000</b>	ug/L	500	107	1	12/06/20 12:00	12/08/20 20:29	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>0.89J</b>	ug/L	1.0	0.086	1	12/06/20 10:34	12/09/20 14:46	7440-38-2	B
Cadmium	<b>1.4</b>	ug/L	0.50	0.056	1	12/06/20 10:34	12/09/20 14:46	7440-43-9	B
Selenium	<b>&lt;0.18</b>	ug/L	1.0	0.18	1	12/06/20 10:34	12/09/20 14:46	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>394</b>	mg/L	20.0	8.4	1		11/18/20 11:42		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>1560</b>	mg/L	13.3	13.3	1		11/17/20 10:14		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>4.0</b>	mg/L	1.0	0.39	1		12/01/20 20:33	16887-00-6	B
Fluoride	<b>0.44</b>	mg/L	0.20	0.075	1		12/01/20 20:33	16984-48-8	
Sulfate	<b>771</b>	mg/L	100	27.8	100		12/01/20 21:02	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-PZ-9D**      **Lab ID: 60354369006**      Collected: 11/12/20 11:05      Received: 11/13/20 03:54      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	124	ug/L	5.0	1.8	1	12/06/20 12:00	12/08/20 20:31	7440-39-3	
Boron	2690	ug/L	100	11.7	1	12/06/20 12:00	12/08/20 20:31	7440-42-8	
Calcium	208000	ug/L	200	32.4	1	12/06/20 12:00	12/08/20 20:31	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	12/06/20 12:00	12/08/20 20:31	7440-48-4	
Iron	12900	ug/L	50.0	26.8	1	12/06/20 12:00	12/08/20 20:31	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 20:31	7439-92-1	
Lithium	37.9	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 20:31	7439-93-2	
Magnesium	49800	ug/L	50.0	19.7	1	12/06/20 12:00	12/08/20 20:31	7439-95-4	
Manganese	1350	ug/L	5.0	0.97	1	12/06/20 12:00	12/08/20 20:31	7439-96-5	
Molybdenum	4.9J	ug/L	20.0	1.7	1	12/06/20 12:00	12/08/20 20:31	7439-98-7	
Potassium	5560	ug/L	500	189	1	12/06/20 12:00	12/08/20 20:31	7440-09-7	
Sodium	20000	ug/L	500	107	1	12/06/20 12:00	12/08/20 20:31	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	0.58J	ug/L	1.0	0.086	1	12/06/20 10:34	12/09/20 14:52	7440-38-2	B
Cadmium	<0.056	ug/L	0.50	0.056	1	12/06/20 10:34	12/09/20 14:52	7440-43-9	
Selenium	<0.18	ug/L	1.0	0.18	1	12/06/20 10:34	12/09/20 14:52	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	286	mg/L	20.0	8.4	1		11/19/20 10:16		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	993	mg/L	10.0	10.0	1		11/17/20 16:29		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	17.4	mg/L	1.0	0.39	1		12/01/20 21:16	16887-00-6	
Fluoride	0.33	mg/L	0.20	0.075	1		12/01/20 21:16	16984-48-8	
Sulfate	425	mg/L	50.0	13.9	50		12/02/20 14:33	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-CA-DUP-2**      **Lab ID: 60354369007**      Collected: 11/11/20 08:00      Received: 11/13/20 03:54      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	52.0	ug/L	5.0	1.8	1	12/06/20 12:00	12/08/20 20:34	7440-39-3	
Boron	13300	ug/L	100	11.7	1	12/06/20 12:00	12/08/20 20:34	7440-42-8	
Calcium	237000	ug/L	200	32.4	1	12/06/20 12:00	12/08/20 20:34	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	12/06/20 12:00	12/08/20 20:34	7440-48-4	
Iron	121	ug/L	50.0	26.8	1	12/06/20 12:00	12/08/20 20:34	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 20:34	7439-92-1	
Lithium	38.2	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 20:34	7439-93-2	
Magnesium	45200	ug/L	50.0	19.7	1	12/06/20 12:00	12/08/20 20:34	7439-95-4	
Manganese	1330	ug/L	5.0	0.97	1	12/06/20 12:00	12/08/20 20:34	7439-96-5	
Molybdenum	2270	ug/L	20.0	1.7	1	12/06/20 12:00	12/08/20 20:34	7439-98-7	
Potassium	5630	ug/L	500	189	1	12/06/20 12:00	12/08/20 20:34	7440-09-7	
Sodium	164000	ug/L	500	107	1	12/06/20 12:00	12/08/20 20:34	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	0.77J	ug/L	1.0	0.086	1	12/06/20 10:34	12/09/20 14:54	7440-38-2	B
Cadmium	0.55	ug/L	0.50	0.056	1	12/06/20 10:34	12/09/20 14:54	7440-43-9	B
Selenium	<0.18	ug/L	1.0	0.18	1	12/06/20 10:34	12/09/20 14:54	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	325	mg/L	20.0	8.4	1		11/18/20 11:47		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1630	mg/L	20.0	20.0	1		11/17/20 10:14		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	23.1	mg/L	5.0	1.9	5		12/02/20 15:02	16887-00-6	B
Fluoride	0.65	mg/L	0.20	0.075	1		12/02/20 14:47	16984-48-8	
Sulfate	831	mg/L	50.0	13.9	50		12/02/20 15:16	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-CA-FB-2**      **Lab ID: 60354369008**      Collected: 11/12/20 11:35      Received: 11/13/20 03:54      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
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	12/06/20 12:00	12/08/20 20:36	7440-39-3	
Boron	45.9J	ug/L	100	11.7	1	12/06/20 12:00	12/08/20 20:36	7440-42-8	B
Calcium	37.7J	ug/L	200	32.4	1	12/06/20 12:00	12/08/20 20:36	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	12/06/20 12:00	12/08/20 20:36	7440-48-4	
Iron	<26.8	ug/L	50.0	26.8	1	12/06/20 12:00	12/08/20 20:36	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 20:36	7439-92-1	
Lithium	<4.6	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 20:36	7439-93-2	
Magnesium	<19.7	ug/L	50.0	19.7	1	12/06/20 12:00	12/08/20 20:36	7439-95-4	
Manganese	<0.97	ug/L	5.0	0.97	1	12/06/20 12:00	12/08/20 20:36	7439-96-5	
Molybdenum	<1.7	ug/L	20.0	1.7	1	12/06/20 12:00	12/08/20 20:36	7439-98-7	
Potassium	<189	ug/L	500	189	1	12/06/20 12:00	12/08/20 20:36	7440-09-7	
Sodium	149J	ug/L	500	107	1	12/06/20 12:00	12/10/20 12:34	7440-23-5	B
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<0.086	ug/L	1.0	0.086	1	12/06/20 10:34	12/09/20 14:56	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	12/06/20 10:34	12/09/20 14:56	7440-43-9	
Selenium	<0.18	ug/L	1.0	0.18	1	12/06/20 10:34	12/09/20 14:56	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<8.4	mg/L	20.0	8.4	1		11/19/20 10:21		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<5.0	mg/L	5.0	5.0	1		11/17/20 16:29		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<0.39	mg/L	1.0	0.39	1		12/02/20 15:31	16887-00-6	
Fluoride	<0.075	mg/L	0.20	0.075	1		12/02/20 15:31	16984-48-8	
Sulfate	<0.28	mg/L	1.0	0.28	1		12/02/20 15:31	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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



## ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-PZ-1S**      **Lab ID: 60354369009**      Collected: 11/13/20 12:00      Received: 11/14/20 04:00      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>100</b>	ug/L	5.0	1.8	1	12/06/20 12:00	12/08/20 21:03	7440-39-3	
Boron	<b>8180</b>	ug/L	100	11.7	1	12/06/20 12:00	12/08/20 21:03	7440-42-8	
Calcium	<b>104000</b>	ug/L	200	32.4	1	12/06/20 12:00	12/08/20 21:03	7440-70-2	
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	12/06/20 12:00	12/08/20 21:03	7440-48-4	
Iron	<b>4040</b>	ug/L	50.0	26.8	1	12/06/20 12:00	12/08/20 21:03	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 21:03	7439-92-1	
Lithium	<b>14.3</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 21:03	7439-93-2	
Magnesium	<b>17400</b>	ug/L	50.0	19.7	1	12/06/20 12:00	12/08/20 21:03	7439-95-4	
Manganese	<b>1080</b>	ug/L	5.0	0.97	1	12/06/20 12:00	12/08/20 21:03	7439-96-5	
Molybdenum	<b>1760</b>	ug/L	20.0	1.7	1	12/06/20 12:00	12/08/20 21:03	7439-98-7	
Potassium	<b>4980</b>	ug/L	500	189	1	12/06/20 12:00	12/08/20 21:03	7440-09-7	
Sodium	<b>26900</b>	ug/L	500	107	1	12/06/20 12:00	12/08/20 21:03	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>0.50J</b>	ug/L	1.0	0.086	1	12/06/20 10:34	12/09/20 15:14	7440-38-2	B
Cadmium	<b>0.12J</b>	ug/L	0.50	0.056	1	12/06/20 10:34	12/09/20 15:14	7440-43-9	B
Selenium	<b>&lt;0.18</b>	ug/L	1.0	0.18	1	12/06/20 10:34	12/09/20 15:14	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>245</b>	mg/L	20.0	8.4	1		11/19/20 11:14		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>525</b>	mg/L	10.0	10.0	1		11/17/20 16:30		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>19.9</b>	mg/L	1.0	0.39	1		12/02/20 15:45	16887-00-6	
Fluoride	<b>0.69</b>	mg/L	0.20	0.075	1		12/02/20 15:45	16984-48-8	
Sulfate	<b>150</b>	mg/L	50.0	13.9	50		12/02/20 08:47	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-CA-FB-1**      **Lab ID: 60354369010**      Collected: 11/13/20 12:30      Received: 11/14/20 04:00      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
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	12/06/20 12:00	12/08/20 21:06	7440-39-3	
Boron	69.0J	ug/L	100	11.7	1	12/06/20 12:00	12/08/20 21:06	7440-42-8	B
Calcium	<32.4	ug/L	200	32.4	1	12/06/20 12:00	12/08/20 21:06	7440-70-2	
Cobalt	<1.5	ug/L	5.0	1.5	1	12/06/20 12:00	12/08/20 21:06	7440-48-4	
Iron	<26.8	ug/L	50.0	26.8	1	12/06/20 12:00	12/08/20 21:06	7439-89-6	
Lead	<4.6	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 21:06	7439-92-1	
Lithium	<4.6	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 21:06	7439-93-2	
Magnesium	<19.7	ug/L	50.0	19.7	1	12/06/20 12:00	12/08/20 21:06	7439-95-4	
Manganese	<0.97	ug/L	5.0	0.97	1	12/06/20 12:00	12/08/20 21:06	7439-96-5	
Molybdenum	2.1J	ug/L	20.0	1.7	1	12/06/20 12:00	12/08/20 21:06	7439-98-7	
Potassium	<189	ug/L	500	189	1	12/06/20 12:00	12/08/20 21:06	7440-09-7	
Sodium	361J	ug/L	500	107	1	12/06/20 12:00	12/08/20 21:06	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<0.086	ug/L	1.0	0.086	1	12/06/20 10:34	12/09/20 15:16	7440-38-2	
Cadmium	<0.056	ug/L	0.50	0.056	1	12/06/20 10:34	12/09/20 15:16	7440-43-9	
Selenium	<0.18	ug/L	1.0	0.18	1	12/06/20 10:34	12/09/20 15:16	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<8.4	mg/L	20.0	8.4	1		11/19/20 12:01		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<5.0	mg/L	5.0	5.0	1		11/17/20 16:30		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	0.54J	mg/L	1.0	0.39	1		12/02/20 14:18	16887-00-6	B
Fluoride	<0.075	mg/L	0.20	0.075	1		12/02/20 14:18	16984-48-8	
Sulfate	<0.28	mg/L	1.0	0.28	1		12/02/20 14:18	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-BMW-3S**      **Lab ID: 60354369011**      Collected: 11/16/20 12:20      Received: 11/18/20 04:15      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>119</b>	ug/L	5.0	1.8	1	12/06/20 12:00	12/08/20 19:19	7440-39-3	
Boron	<b>66.3J</b>	ug/L	100	11.7	1	12/06/20 12:00	12/08/20 19:19	7440-42-8	
Calcium	<b>125000</b>	ug/L	200	32.4	1	12/06/20 12:00	12/08/20 19:19	7440-70-2	
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	12/06/20 12:00	12/08/20 19:19	7440-48-4	
Iron	<b>35.3J</b>	ug/L	50.0	26.8	1	12/06/20 12:00	12/08/20 19:19	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 19:19	7439-92-1	
Lithium	<b>11.3</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 19:19	7439-93-2	
Magnesium	<b>23000</b>	ug/L	50.0	19.7	1	12/06/20 12:00	12/08/20 19:19	7439-95-4	
Manganese	<b>344</b>	ug/L	5.0	0.97	1	12/06/20 12:00	12/08/20 19:19	7439-96-5	
Molybdenum	<b>2.2J</b>	ug/L	20.0	1.7	1	12/06/20 12:00	12/08/20 19:19	7439-98-7	B
Potassium	<b>440J</b>	ug/L	500	189	1	12/06/20 12:00	12/08/20 19:19	7440-09-7	B
Sodium	<b>5250</b>	ug/L	500	107	1	12/06/20 12:00	12/08/20 19:19	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>0.65J</b>	ug/L	1.0	0.086	1	12/06/20 10:34	12/09/20 15:48	7440-38-2	
Cadmium	<b>&lt;0.056</b>	ug/L	0.50	0.056	1	12/06/20 10:34	12/09/20 15:48	7440-43-9	
Selenium	<b>&lt;0.18</b>	ug/L	1.0	0.18	1	12/06/20 10:34	12/09/20 15:48	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>378</b>	mg/L	20.0	8.4	1		11/19/20 15:40		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>455</b>	mg/L	10.0	10.0	1		11/19/20 15:05		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>11.4</b>	mg/L	1.0	0.39	1		12/08/20 14:12	16887-00-6	
Fluoride	<b>0.40</b>	mg/L	0.20	0.075	1		12/08/20 14:12	16984-48-8	
Sulfate	<b>30.6</b>	mg/L	2.0	0.56	2		12/07/20 17:18	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-TP-8D**      **Lab ID: 60354369012**      Collected: 11/16/20 09:52      Received: 11/18/20 04:15      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>332</b>	ug/L	5.0	1.8	1	12/06/20 12:00	12/08/20 19:21	7440-39-3	
Boron	<b>66.8J</b>	ug/L	100	11.7	1	12/06/20 12:00	12/08/20 19:21	7440-42-8	
Calcium	<b>98100</b>	ug/L	200	32.4	1	12/06/20 12:00	12/08/20 19:21	7440-70-2	
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	12/06/20 12:00	12/08/20 19:21	7440-48-4	
Iron	<b>5380</b>	ug/L	50.0	26.8	1	12/06/20 12:00	12/08/20 19:21	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 19:21	7439-92-1	
Lithium	<b>31.0</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 19:21	7439-93-2	
Magnesium	<b>22100</b>	ug/L	50.0	19.7	1	12/06/20 12:00	12/08/20 19:21	7439-95-4	
Manganese	<b>382</b>	ug/L	5.0	0.97	1	12/06/20 12:00	12/08/20 19:21	7439-96-5	
Molybdenum	<b>&lt;1.7</b>	ug/L	20.0	1.7	1	12/06/20 12:00	12/08/20 19:21	7439-98-7	
Potassium	<b>3660</b>	ug/L	500	189	1	12/06/20 12:00	12/08/20 19:21	7440-09-7	
Sodium	<b>5190</b>	ug/L	500	107	1	12/06/20 12:00	12/08/20 19:21	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>1.3</b>	ug/L	1.0	0.086	1	12/06/20 10:34	12/09/20 15:50	7440-38-2	
Cadmium	<b>&lt;0.056</b>	ug/L	0.50	0.056	1	12/06/20 10:34	12/09/20 15:50	7440-43-9	
Selenium	<b>&lt;0.18</b>	ug/L	1.0	0.18	1	12/06/20 10:34	12/09/20 15:50	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>310</b>	mg/L	20.0	8.4	1		11/19/20 15:46		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>396</b>	mg/L	10.0	10.0	1		11/19/20 15:05		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>13.4</b>	mg/L	1.0	0.39	1		12/08/20 14:26	16887-00-6	
Fluoride	<b>0.34</b>	mg/L	0.20	0.075	1		12/08/20 14:26	16984-48-8	
Sulfate	<b>38.1</b>	mg/L	2.0	0.56	2		12/07/20 18:16	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-TP-6S**      **Lab ID: 60354369013**      Collected: 11/16/20 15:25      Received: 11/18/20 04:15      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>284</b>	ug/L	5.0	1.8	1	12/06/20 12:00	12/08/20 19:26	7440-39-3	
Boron	<b>95.6J</b>	ug/L	100	11.7	1	12/06/20 12:00	12/08/20 19:26	7440-42-8	
Calcium	<b>128000</b>	ug/L	200	32.4	1	12/06/20 12:00	12/08/20 19:26	7440-70-2	
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	12/06/20 12:00	12/08/20 19:26	7440-48-4	
Iron	<b>&lt;26.8</b>	ug/L	50.0	26.8	1	12/06/20 12:00	12/08/20 19:26	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 19:26	7439-92-1	
Lithium	<b>37.4</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 19:26	7439-93-2	
Magnesium	<b>28000</b>	ug/L	50.0	19.7	1	12/06/20 12:00	12/08/20 19:26	7439-95-4	
Manganese	<b>185</b>	ug/L	5.0	0.97	1	12/06/20 12:00	12/08/20 19:26	7439-96-5	
Molybdenum	<b>3.8J</b>	ug/L	20.0	1.7	1	12/06/20 12:00	12/08/20 19:26	7439-98-7	B
Potassium	<b>2500</b>	ug/L	500	189	1	12/06/20 12:00	12/08/20 19:26	7440-09-7	
Sodium	<b>5940</b>	ug/L	500	107	1	12/06/20 12:00	12/08/20 19:26	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>0.46J</b>	ug/L	1.0	0.086	1	12/06/20 10:34	12/09/20 15:57	7440-38-2	
Cadmium	<b>&lt;0.056</b>	ug/L	0.50	0.056	1	12/06/20 10:34	12/09/20 15:57	7440-43-9	
Selenium	<b>0.51J</b>	ug/L	1.0	0.18	1	12/06/20 10:34	12/09/20 15:57	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>399</b>	mg/L	20.0	8.4	1		11/19/20 16:07		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>475</b>	mg/L	10.0	10.0	1		11/19/20 15:05		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>8.3</b>	mg/L	1.0	0.39	1		12/08/20 15:38	16887-00-6	
Fluoride	<b>0.36</b>	mg/L	0.20	0.075	1		12/08/20 15:38	16984-48-8	
Sulfate	<b>35.0</b>	mg/L	5.0	1.4	5		12/07/20 19:43	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-TP-6D**      **Lab ID: 60354369014**      Collected: 11/16/20 16:02      Received: 11/18/20 04:15      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>399</b>	ug/L	5.0	1.8	1	12/06/20 12:00	12/08/20 19:29	7440-39-3	
Boron	<b>60.9J</b>	ug/L	100	11.7	1	12/06/20 12:00	12/08/20 19:29	7440-42-8	
Calcium	<b>113000</b>	ug/L	200	32.4	1	12/06/20 12:00	12/08/20 19:29	7440-70-2	
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	12/06/20 12:00	12/08/20 19:29	7440-48-4	
Iron	<b>7320</b>	ug/L	50.0	26.8	1	12/06/20 12:00	12/08/20 19:29	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 19:29	7439-92-1	
Lithium	<b>31.2</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 19:29	7439-93-2	
Magnesium	<b>28600</b>	ug/L	50.0	19.7	1	12/06/20 12:00	12/08/20 19:29	7439-95-4	
Manganese	<b>475</b>	ug/L	5.0	0.97	1	12/06/20 12:00	12/08/20 19:29	7439-96-5	
Molybdenum	<b>&lt;1.7</b>	ug/L	20.0	1.7	1	12/06/20 12:00	12/08/20 19:29	7439-98-7	
Potassium	<b>3830</b>	ug/L	500	189	1	12/06/20 12:00	12/08/20 19:29	7440-09-7	
Sodium	<b>5310</b>	ug/L	500	107	1	12/06/20 12:00	12/08/20 19:29	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>0.12J</b>	ug/L	1.0	0.086	1	12/06/20 10:34	12/09/20 15:59	7440-38-2	
Cadmium	<b>&lt;0.056</b>	ug/L	0.50	0.056	1	12/06/20 10:34	12/09/20 15:59	7440-43-9	
Selenium	<b>&lt;0.18</b>	ug/L	1.0	0.18	1	12/06/20 10:34	12/09/20 15:59	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>351</b>	mg/L	20.0	8.4	1		11/19/20 16:12		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>464</b>	mg/L	10.0	10.0	1		11/19/20 15:05		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>12.9</b>	mg/L	1.0	0.39	1		12/08/20 15:53	16887-00-6	
Fluoride	<b>0.31</b>	mg/L	0.20	0.075	1		12/08/20 15:53	16984-48-8	
Sulfate	<b>55.3</b>	mg/L	5.0	1.4	5		12/07/20 20:12	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-TP-3D**      **Lab ID: 60354369015**      Collected: 11/17/20 09:25      Received: 11/18/20 04:15      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	<b>583</b>	ug/L	5.0	1.8	1	12/06/20 12:00	12/08/20 19:31	7440-39-3	
Boron	<b>57.6J</b>	ug/L	100	11.7	1	12/06/20 12:00	12/08/20 19:31	7440-42-8	
Calcium	<b>118000</b>	ug/L	200	32.4	1	12/06/20 12:00	12/08/20 19:31	7440-70-2	
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	12/06/20 12:00	12/08/20 19:31	7440-48-4	
Iron	<b>7840</b>	ug/L	50.0	26.8	1	12/06/20 12:00	12/08/20 19:31	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 19:31	7439-92-1	
Lithium	<b>34.6</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 19:31	7439-93-2	
Magnesium	<b>29500</b>	ug/L	50.0	19.7	1	12/06/20 12:00	12/08/20 19:31	7439-95-4	
Manganese	<b>658</b>	ug/L	5.0	0.97	1	12/06/20 12:00	12/08/20 19:31	7439-96-5	
Molybdenum	<b>&lt;1.7</b>	ug/L	20.0	1.7	1	12/06/20 12:00	12/08/20 19:31	7439-98-7	
Potassium	<b>4000</b>	ug/L	500	189	1	12/06/20 12:00	12/08/20 19:31	7440-09-7	
Sodium	<b>6590</b>	ug/L	500	107	1	12/06/20 12:00	12/08/20 19:31	7440-23-5	
<b>200.8 MET ICPMS</b>		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Arsenic	<b>0.14J</b>	ug/L	1.0	0.086	1	12/06/20 10:34	12/09/20 16:01	7440-38-2	
Cadmium	<b>&lt;0.056</b>	ug/L	0.50	0.056	1	12/06/20 10:34	12/09/20 16:01	7440-43-9	
Selenium	<b>&lt;0.18</b>	ug/L	1.0	0.18	1	12/06/20 10:34	12/09/20 16:01	7782-49-2	
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	<b>340</b>	mg/L	20.0	8.4	1		11/19/20 17:08		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	<b>464</b>	mg/L	10.0	10.0	1		11/19/20 15:06		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	<b>8.3</b>	mg/L	1.0	0.39	1		12/08/20 16:07	16887-00-6	
Fluoride	<b>0.25</b>	mg/L	0.20	0.075	1		12/08/20 16:07	16984-48-8	
Sulfate	<b>82.9</b>	mg/L	10.0	2.8	10		12/07/20 20:41	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-TP-4D**      **Lab ID: 60354369016**      Collected: 11/17/20 10:35      Received: 11/18/20 04:15      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Barium	<b>560</b>	ug/L	5.0	1.8	1	12/06/20 12:00	12/08/20 19:34	7440-39-3	
Boron	<b>56.8J</b>	ug/L	100	11.7	1	12/06/20 12:00	12/08/20 19:34	7440-42-8	
Calcium	<b>112000</b>	ug/L	200	32.4	1	12/06/20 12:00	12/08/20 19:34	7440-70-2	
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	12/06/20 12:00	12/08/20 19:34	7440-48-4	
Iron	<b>6590</b>	ug/L	50.0	26.8	1	12/06/20 12:00	12/08/20 19:34	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 19:34	7439-92-1	
Lithium	<b>36.0</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 19:34	7439-93-2	
Magnesium	<b>27000</b>	ug/L	50.0	19.7	1	12/06/20 12:00	12/08/20 19:34	7439-95-4	
Manganese	<b>466</b>	ug/L	5.0	0.97	1	12/06/20 12:00	12/08/20 19:34	7439-96-5	
Molybdenum	<b>&lt;1.7</b>	ug/L	20.0	1.7	1	12/06/20 12:00	12/08/20 19:34	7439-98-7	
Potassium	<b>3410</b>	ug/L	500	189	1	12/06/20 12:00	12/08/20 19:34	7440-09-7	
Sodium	<b>7260</b>	ug/L	500	107	1	12/06/20 12:00	12/08/20 19:34	7440-23-5	
<b>200.8 MET ICPMS</b>		Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Arsenic	<b>1.6</b>	ug/L	1.0	0.086	1	12/06/20 10:34	12/09/20 16:03	7440-38-2	
Cadmium	<b>&lt;0.056</b>	ug/L	0.50	0.056	1	12/06/20 10:34	12/09/20 16:03	7440-43-9	
Selenium	<b>&lt;0.18</b>	ug/L	1.0	0.18	1	12/06/20 10:34	12/09/20 16:03	7782-49-2	
<b>2320B Alkalinity</b>		Analytical Method: SM 2320B Pace Analytical Services - Kansas City							
Alkalinity, Total as CaCO3	<b>303</b>	mg/L	20.0	8.4	1		11/19/20 17:14		
<b>2540C Total Dissolved Solids</b>		Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	<b>476</b>	mg/L	10.0	10.0	1		11/19/20 15:06		
<b>300.0 IC Anions 28 Days</b>		Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	<b>8.7</b>	mg/L	1.0	0.39	1		12/08/20 16:21	16887-00-6	
Fluoride	<b>0.27</b>	mg/L	0.20	0.075	1		12/08/20 16:21	16984-48-8	
Sulfate	<b>92.8</b>	mg/L	10.0	2.8	10		12/07/20 21:10	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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



## ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-TP-5D**      **Lab ID: 60354369017**      Collected: 11/17/20 15:25      Received: 11/18/20 04:15      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>178</b>	ug/L	5.0	1.8	1	12/06/20 12:00	12/08/20 19:43	7440-39-3	
Boron	<b>5460</b>	ug/L	100	11.7	1	12/06/20 12:00	12/08/20 19:43	7440-42-8	
Calcium	<b>136000</b>	ug/L	200	32.4	1	12/06/20 12:00	12/08/20 19:43	7440-70-2	
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	12/06/20 12:00	12/08/20 19:43	7440-48-4	
Iron	<b>9520</b>	ug/L	50.0	26.8	1	12/06/20 12:00	12/08/20 19:43	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 19:43	7439-92-1	
Lithium	<b>32.6</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 19:43	7439-93-2	
Magnesium	<b>34500</b>	ug/L	50.0	19.7	1	12/06/20 12:00	12/08/20 19:43	7439-95-4	
Manganese	<b>1090</b>	ug/L	5.0	0.97	1	12/06/20 12:00	12/08/20 19:43	7439-96-5	
Molybdenum	<b>186</b>	ug/L	20.0	1.7	1	12/06/20 12:00	12/08/20 19:43	7439-98-7	
Potassium	<b>4700</b>	ug/L	500	189	1	12/06/20 12:00	12/08/20 19:43	7440-09-7	
Sodium	<b>19800</b>	ug/L	500	107	1	12/06/20 12:00	12/08/20 19:43	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>0.20J</b>	ug/L	1.0	0.086	1	12/06/20 10:34	12/09/20 16:05	7440-38-2	
Cadmium	<b>&lt;0.056</b>	ug/L	0.50	0.056	1	12/06/20 10:34	12/09/20 16:05	7440-43-9	
Selenium	<b>&lt;0.18</b>	ug/L	1.0	0.18	1	12/06/20 10:34	12/09/20 16:05	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>255</b>	mg/L	20.0	8.4	1		11/19/20 17:19		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>687</b>	mg/L	10.0	10.0	1		11/19/20 15:07		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>27.1</b>	mg/L	2.0	0.78	2		12/07/20 22:08	16887-00-6	
Fluoride	<b>0.38</b>	mg/L	0.20	0.075	1		12/08/20 16:36	16984-48-8	
Sulfate	<b>223</b>	mg/L	20.0	5.6	20		12/07/20 22:23	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-BMW-1S**      **Lab ID: 60354369018**      Collected: 11/16/20 14:50      Received: 11/18/20 04:15      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>154</b>	ug/L	5.0	1.8	1	12/06/20 12:00	12/08/20 19:46	7440-39-3	
Boron	<b>75.1J</b>	ug/L	100	11.7	1	12/06/20 12:00	12/08/20 19:46	7440-42-8	
Calcium	<b>141000</b>	ug/L	200	32.4	1	12/06/20 12:00	12/08/20 19:46	7440-70-2	
Cobalt	<b>1.6J</b>	ug/L	5.0	1.5	1	12/06/20 12:00	12/08/20 19:46	7440-48-4	
Iron	<b>52.0</b>	ug/L	50.0	26.8	1	12/06/20 12:00	12/08/20 19:46	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 19:46	7439-92-1	
Lithium	<b>7.8J</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 19:46	7439-93-2	
Magnesium	<b>27800</b>	ug/L	50.0	19.7	1	12/06/20 12:00	12/08/20 19:46	7439-95-4	
Manganese	<b>1240</b>	ug/L	5.0	0.97	1	12/06/20 12:00	12/08/20 19:46	7439-96-5	
Molybdenum	<b>2.6J</b>	ug/L	20.0	1.7	1	12/06/20 12:00	12/08/20 19:46	7439-98-7	B
Potassium	<b>366J</b>	ug/L	500	189	1	12/06/20 12:00	12/08/20 19:46	7440-09-7	B
Sodium	<b>4800</b>	ug/L	500	107	1	12/06/20 12:00	12/08/20 19:46	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>0.92J</b>	ug/L	1.0	0.086	1	12/06/20 10:34	12/09/20 16:07	7440-38-2	
Cadmium	<b>0.11J</b>	ug/L	0.50	0.056	1	12/06/20 10:34	12/09/20 16:07	7440-43-9	
Selenium	<b>0.29J</b>	ug/L	1.0	0.18	1	12/06/20 10:34	12/09/20 16:07	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>422</b>	mg/L	20.0	8.4	1		11/19/20 16:19		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>505</b>	mg/L	10.0	10.0	1		11/19/20 15:05		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>7.0</b>	mg/L	1.0	0.39	1		12/07/20 22:38	16887-00-6	
Fluoride	<b>0.34</b>	mg/L	0.20	0.075	1		12/07/20 22:38	16984-48-8	
Sulfate	<b>24.8</b>	mg/L	2.0	0.56	2		12/07/20 22:52	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-TP-2D**      **Lab ID: 60354369019**      Collected: 11/17/20 14:50      Received: 11/18/20 04:15      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>60.7</b>	ug/L	5.0	1.8	1	12/06/20 12:00	12/08/20 19:48	7440-39-3	
Boron	<b>73.6J</b>	ug/L	100	11.7	1	12/06/20 12:00	12/08/20 19:48	7440-42-8	
Calcium	<b>274000</b>	ug/L	200	32.4	1	12/06/20 12:00	12/08/20 19:48	7440-70-2	
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	12/06/20 12:00	12/08/20 19:48	7440-48-4	
Iron	<b>16100</b>	ug/L	50.0	26.8	1	12/06/20 12:00	12/08/20 19:48	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 19:48	7439-92-1	
Lithium	<b>51.6</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 19:48	7439-93-2	
Magnesium	<b>75700</b>	ug/L	50.0	19.7	1	12/06/20 12:00	12/08/20 19:48	7439-95-4	
Manganese	<b>1340</b>	ug/L	5.0	0.97	1	12/06/20 12:00	12/08/20 19:48	7439-96-5	
Molybdenum	<b>&lt;1.7</b>	ug/L	20.0	1.7	1	12/06/20 12:00	12/08/20 19:48	7439-98-7	
Potassium	<b>5950</b>	ug/L	500	189	1	12/06/20 12:00	12/08/20 19:48	7440-09-7	
Sodium	<b>26000</b>	ug/L	500	107	1	12/06/20 12:00	12/08/20 19:48	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>0.16J</b>	ug/L	1.0	0.086	1	12/06/20 10:34	12/09/20 16:09	7440-38-2	
Cadmium	<b>&lt;0.056</b>	ug/L	0.50	0.056	1	12/06/20 10:34	12/09/20 16:09	7440-43-9	
Selenium	<b>&lt;0.18</b>	ug/L	1.0	0.18	1	12/06/20 10:34	12/09/20 16:09	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>482</b>	mg/L	20.0	8.4	1		11/19/20 16:24		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>1380</b>	mg/L	13.3	13.3	1		11/19/20 15:05		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>76.7</b>	mg/L	10.0	3.9	10		12/07/20 23:36	16887-00-6	
Fluoride	<b>0.16J</b>	mg/L	0.20	0.075	1		12/07/20 23:07	16984-48-8	
Sulfate	<b>462</b>	mg/L	50.0	13.9	50		12/08/20 00:05	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-AM-1S**      **Lab ID: 60354369020**      Collected: 11/16/20 11:15      Received: 11/18/20 04:15      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>144</b>	ug/L	5.0	1.8	1	12/06/20 12:00	12/08/20 19:51	7440-39-3	
Boron	<b>9280</b>	ug/L	100	11.7	1	12/06/20 12:00	12/08/20 19:51	7440-42-8	
Calcium	<b>81000</b>	ug/L	200	32.4	1	12/06/20 12:00	12/08/20 19:51	7440-70-2	
Cobalt	<b>2.6J</b>	ug/L	5.0	1.5	1	12/06/20 12:00	12/08/20 19:51	7440-48-4	
Iron	<b>1950</b>	ug/L	50.0	26.8	1	12/06/20 12:00	12/08/20 19:51	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 19:51	7439-92-1	
Lithium	<b>33.2</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 19:51	7439-93-2	
Magnesium	<b>17500</b>	ug/L	50.0	19.7	1	12/06/20 12:00	12/08/20 19:51	7439-95-4	
Manganese	<b>646</b>	ug/L	5.0	0.97	1	12/06/20 12:00	12/08/20 19:51	7439-96-5	
Molybdenum	<b>271</b>	ug/L	20.0	1.7	1	12/06/20 12:00	12/08/20 19:51	7439-98-7	
Potassium	<b>8490</b>	ug/L	500	189	1	12/06/20 12:00	12/08/20 19:51	7440-09-7	
Sodium	<b>23400</b>	ug/L	500	107	1	12/06/20 12:00	12/08/20 19:51	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>1.5</b>	ug/L	1.0	0.086	1	12/06/20 10:34	12/09/20 16:10	7440-38-2	
Cadmium	<b>0.078J</b>	ug/L	0.50	0.056	1	12/06/20 10:34	12/09/20 16:10	7440-43-9	
Selenium	<b>&lt;0.18</b>	ug/L	1.0	0.18	1	12/06/20 10:34	12/09/20 16:10	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>241</b>	mg/L	20.0	8.4	1		11/19/20 16:30		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>383</b>	mg/L	10.0	10.0	1		11/19/20 15:05		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>26.4</b>	mg/L	2.0	0.78	2		12/08/20 01:18	16887-00-6	
Fluoride	<b>0.55</b>	mg/L	0.20	0.075	1		12/08/20 01:03	16984-48-8	
Sulfate	<b>67.3</b>	mg/L	20.0	5.6	20		12/08/20 16:50	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

## ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-AM-1D**      **Lab ID: 60354369021**      Collected: 11/16/20 10:30      Received: 11/18/20 04:15      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>245</b>	ug/L	5.0	1.8	1	12/06/20 12:00	12/08/20 19:53	7440-39-3	
Boron	<b>6560</b>	ug/L	100	11.7	1	12/06/20 12:00	12/08/20 19:53	7440-42-8	
Calcium	<b>78300</b>	ug/L	200	32.4	1	12/06/20 12:00	12/08/20 19:53	7440-70-2	
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	12/06/20 12:00	12/08/20 19:53	7440-48-4	
Iron	<b>3040</b>	ug/L	50.0	26.8	1	12/06/20 12:00	12/08/20 19:53	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 19:53	7439-92-1	
Lithium	<b>38.0</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 19:53	7439-93-2	
Magnesium	<b>17100</b>	ug/L	50.0	19.7	1	12/06/20 12:00	12/08/20 19:53	7439-95-4	
Manganese	<b>384</b>	ug/L	5.0	0.97	1	12/06/20 12:00	12/08/20 19:53	7439-96-5	
Molybdenum	<b>536</b>	ug/L	20.0	1.7	1	12/06/20 12:00	12/08/20 19:53	7439-98-7	
Potassium	<b>7340</b>	ug/L	500	189	1	12/06/20 12:00	12/08/20 19:53	7440-09-7	
Sodium	<b>22200</b>	ug/L	500	107	1	12/06/20 12:00	12/08/20 19:53	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8    Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>0.20J</b>	ug/L	1.0	0.086	1	12/06/20 10:34	12/09/20 16:12	7440-38-2	
Cadmium	<b>&lt;0.056</b>	ug/L	0.50	0.056	1	12/06/20 10:34	12/09/20 16:12	7440-43-9	
Selenium	<b>&lt;0.18</b>	ug/L	1.0	0.18	1	12/06/20 10:34	12/09/20 16:12	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>232</b>	mg/L	20.0	8.4	1		11/19/20 16:35		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>411</b>	mg/L	10.0	10.0	1		11/19/20 15:06		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>25.8</b>	mg/L	5.0	1.9	5		12/08/20 01:47	16887-00-6	
Fluoride	<b>0.56</b>	mg/L	0.20	0.075	1		12/08/20 01:32	16984-48-8	
Sulfate	<b>80.0</b>	mg/L	5.0	1.4	5		12/08/20 01:47	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-UG-3**      **Lab ID: 60354369022**      Collected: 11/17/20 15:40      Received: 11/18/20 04:15      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>208</b>	ug/L	5.0	1.8	1	12/06/20 12:00	12/08/20 19:56	7440-39-3	
Boron	<b>188</b>	ug/L	100	11.7	1	12/06/20 12:00	12/08/20 19:56	7440-42-8	
Calcium	<b>119000</b>	ug/L	200	32.4	1	12/06/20 12:00	12/08/20 19:56	7440-70-2	
Cobalt	<b>1.7J</b>	ug/L	5.0	1.5	1	12/06/20 12:00	12/08/20 19:56	7440-48-4	
Iron	<b>&lt;26.8</b>	ug/L	50.0	26.8	1	12/06/20 12:00	12/08/20 19:56	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 19:56	7439-92-1	
Lithium	<b>28.3</b>	ug/L	10.0	4.6	1	12/06/20 12:00	12/08/20 19:56	7439-93-2	
Magnesium	<b>23300</b>	ug/L	50.0	19.7	1	12/06/20 12:00	12/08/20 19:56	7439-95-4	
Manganese	<b>574</b>	ug/L	5.0	0.97	1	12/06/20 12:00	12/08/20 19:56	7439-96-5	
Molybdenum	<b>3.1J</b>	ug/L	20.0	1.7	1	12/06/20 12:00	12/08/20 19:56	7439-98-7	B
Potassium	<b>5330</b>	ug/L	500	189	1	12/06/20 12:00	12/08/20 19:56	7440-09-7	
Sodium	<b>19100</b>	ug/L	500	107	1	12/06/20 12:00	12/08/20 19:56	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>0.36J</b>	ug/L	1.0	0.086	1	12/06/20 10:34	12/09/20 16:14	7440-38-2	
Cadmium	<b>0.22J</b>	ug/L	0.50	0.056	1	12/06/20 10:34	12/09/20 16:14	7440-43-9	
Selenium	<b>2.3</b>	ug/L	1.0	0.18	1	12/06/20 10:34	12/09/20 16:14	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>337</b>	mg/L	20.0	8.4	1		11/19/20 16:40		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>473</b>	mg/L	10.0	10.0	1		11/19/20 15:06		
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>16.5</b>	mg/L	1.0	0.39	1		12/08/20 02:01	16887-00-6	
Fluoride	<b>0.34</b>	mg/L	0.20	0.075	1		12/08/20 02:01	16984-48-8	
Sulfate	<b>69.5</b>	mg/L	5.0	1.4	5		12/08/20 02:16	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-CA-DUP-1**      **Lab ID: 60354369025**      Collected: 11/17/20 08:00      Received: 11/18/20 04:15      Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 Metals, Total</b>									
Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Pace Analytical Services - Kansas City									
Barium	<b>578</b>	ug/L	5.0	1.8	1	12/06/20 11:13	12/08/20 16:36	7440-39-3	
Boron	<b>55.7J</b>	ug/L	100	11.7	1	12/06/20 11:13	12/08/20 16:36	7440-42-8	
Calcium	<b>120000</b>	ug/L	200	32.4	1	12/06/20 11:13	12/08/20 16:36	7440-70-2	
Cobalt	<b>&lt;1.5</b>	ug/L	5.0	1.5	1	12/06/20 11:13	12/08/20 16:36	7440-48-4	
Iron	<b>7940</b>	ug/L	50.0	26.8	1	12/06/20 11:13	12/08/20 16:36	7439-89-6	
Lead	<b>&lt;4.6</b>	ug/L	10.0	4.6	1	12/06/20 11:13	12/08/20 16:36	7439-92-1	
Lithium	<b>32.1</b>	ug/L	10.0	4.6	1	12/06/20 11:13	12/08/20 16:36	7439-93-2	
Magnesium	<b>29400</b>	ug/L	50.0	19.7	1	12/06/20 11:13	12/08/20 16:36	7439-95-4	
Manganese	<b>652</b>	ug/L	5.0	0.97	1	12/06/20 11:13	12/08/20 16:36	7439-96-5	
Molybdenum	<b>&lt;1.7</b>	ug/L	20.0	1.7	1	12/06/20 11:13	12/08/20 16:36	7439-98-7	
Potassium	<b>3920</b>	ug/L	500	189	1	12/06/20 11:13	12/08/20 16:36	7440-09-7	
Sodium	<b>6960</b>	ug/L	500	107	1	12/06/20 11:13	12/08/20 16:36	7440-23-5	
<b>200.8 MET ICPMS</b>									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Arsenic	<b>0.15J</b>	ug/L	1.0	0.086	1	12/06/20 10:34	12/09/20 15:27	7440-38-2	
Cadmium	<b>&lt;0.056</b>	ug/L	0.50	0.056	1	12/06/20 10:34	12/09/20 15:27	7440-43-9	
Selenium	<b>&lt;0.18</b>	ug/L	1.0	0.18	1	12/06/20 10:34	12/09/20 15:27	7782-49-2	
<b>2320B Alkalinity</b>									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<b>344</b>	mg/L	20.0	8.4	1		11/19/20 17:24		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	<b>487</b>	mg/L	5.0	5.0	1		12/22/20 15:18		H1
<b>300.0 IC Anions 28 Days</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	<b>8.3</b>	mg/L	1.0	0.39	1		12/09/20 16:20	16887-00-6	
Fluoride	<b>0.30</b>	mg/L	0.20	0.075	1		12/09/20 16:20	16984-48-8	
Sulfate	<b>93.5</b>	mg/L	10.0	4.2	10		12/11/20 13:35	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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

### QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

QC Batch:	693105	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: 60354369001, 60354369002, 60354369003, 60354369004, 60354369005, 60354369006, 60354369007, 60354369008, 60354369009, 60354369010

METHOD BLANK:	2799487	Matrix:	Water
---------------	---------	---------	-------

Associated Lab Samples: 60354369001, 60354369002, 60354369003, 60354369004, 60354369005, 60354369006, 60354369007, 60354369008, 60354369009, 60354369010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	12/08/20 19:57	
Boron	ug/L	28.9J	100	11.7	12/08/20 19:57	
Calcium	ug/L	<32.4	200	32.4	12/08/20 19:57	
Cobalt	ug/L	<1.5	5.0	1.5	12/08/20 19:57	
Iron	ug/L	<26.8	50.0	26.8	12/08/20 19:57	
Lead	ug/L	<4.6	10.0	4.6	12/08/20 19:57	
Lithium	ug/L	<4.6	10.0	4.6	12/08/20 19:57	
Magnesium	ug/L	<19.7	50.0	19.7	12/08/20 19:57	
Manganese	ug/L	<0.97	5.0	0.97	12/08/20 19:57	
Molybdenum	ug/L	<1.7	20.0	1.7	12/08/20 19:57	
Potassium	ug/L	325J	500	189	12/08/20 19:57	
Sodium	ug/L	399J	500	107	12/10/20 12:28	

LABORATORY CONTROL SAMPLE: 2799488

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1020	102	85-115	
Boron	ug/L	1000	998	100	85-115	
Calcium	ug/L	10000	10200	102	85-115	
Cobalt	ug/L	1000	1040	104	85-115	
Iron	ug/L	10000	10300	103	85-115	
Lead	ug/L	1000	1040	104	85-115	
Lithium	ug/L	1000	1060	106	85-115	
Magnesium	ug/L	10000	10200	102	85-115	
Manganese	ug/L	1000	1010	101	85-115	
Molybdenum	ug/L	1000	996	100	85-115	
Potassium	ug/L	10000	10500	105	85-115	
Sodium	ug/L	10000	11300	113	85-115	

MATRIX SPIKE SAMPLE: 2799489

Parameter	Units	60354369004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	54.5	1000	1060	100	70-130	
Boron	ug/L	14500	1000	16000	145	70-130	M1
Calcium	ug/L	248000	10000	264000	159	70-130	M1
Cobalt	ug/L	<1.5	1000	1010	101	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

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



### QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

MATRIX SPIKE SAMPLE: 2799489		60354369004		Spike	MS	MS	% Rec		
Parameter	Units	Result	Conc.	Result	% Rec	Limit	Qualifiers		
Iron	ug/L	260	10000	10300	101	70-130			
Lead	ug/L	<4.6	1000	998	100	70-130			
Lithium	ug/L	45.2	1000	1040	99	70-130			
Magnesium	ug/L	47400	10000	58500	111	70-130			
Manganese	ug/L	1430	1000	2460	103	70-130			
Molybdenum	ug/L	2550	1000	3650	110	70-130			
Potassium	ug/L	5520	10000	15800	102	70-130			
Sodium	ug/L	176000	10000	189000	133	70-130	M1		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2799490		60354368004		MS		MSD		2799491		MS		MSD		% Rec	Max
Parameter	Units	Result	Spike	Spike	MS	MSD	MS	MSD	% Rec	% Rec	Limit	RPD	RPD	Qual	
Barium	ug/L	89.3	1000	1000	1070	1050	98	96	70-130	2	20				
Boron	ug/L	18300	1000	1000	19000	18800	61	48	70-130	1	20	M1			
Calcium	ug/L	250000	10000	10000	252000	250000	25	-3	70-130	1	20	M1			
Cobalt	ug/L	<1.5	1000	1000	984	968	98	97	70-130	2	20				
Iron	ug/L	363	10000	10000	10200	10000	99	97	70-130	2	20				
Lead	ug/L	4.9J	1000	1000	972	957	97	95	70-130	2	20				
Lithium	ug/L	30.2	1000	1000	1010	993	98	96	70-130	2	20				
Magnesium	ug/L	6220	10000	10000	15400	15200	92	90	70-130	2	20				
Manganese	ug/L	227	1000	1000	1180	1160	96	94	70-130	2	20				
Molybdenum	ug/L	1060	1000	1000	2010	1990	96	94	70-130	1	20				
Potassium	ug/L	27900	10000	10000	36800	36400	89	85	70-130	1	20				
Sodium	ug/L	55700	10000	10000	63600	62700	79	70	70-130	1	20				

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

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

**QUALITY CONTROL DATA**

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

QC Batch:	693106	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: 60354369011, 60354369012, 60354369013, 60354369014, 60354369015, 60354369016, 60354369017, 60354369018, 60354369019, 60354369020, 60354369021, 60354369022

METHOD BLANK:	2799492	Matrix:	Water
---------------	---------	---------	-------

Associated Lab Samples: 60354369011, 60354369012, 60354369013, 60354369014, 60354369015, 60354369016, 60354369017, 60354369018, 60354369019, 60354369020, 60354369021, 60354369022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	12/08/20 18:54	
Boron	ug/L	<11.7	100	11.7	12/08/20 18:54	
Calcium	ug/L	47.9J	200	32.4	12/08/20 18:54	
Cobalt	ug/L	<1.5	5.0	1.5	12/08/20 18:54	
Iron	ug/L	<26.8	50.0	26.8	12/08/20 18:54	
Lead	ug/L	<4.6	10.0	4.6	12/08/20 18:54	
Lithium	ug/L	<4.6	10.0	4.6	12/08/20 18:54	
Magnesium	ug/L	<19.7	50.0	19.7	12/08/20 18:54	
Manganese	ug/L	<0.97	5.0	0.97	12/08/20 18:54	
Molybdenum	ug/L	13.8J	20.0	1.7	12/08/20 18:54	
Potassium	ug/L	224J	500	189	12/08/20 18:54	
Sodium	ug/L	378J	500	107	12/08/20 18:54	

LABORATORY CONTROL SAMPLE: 2799493

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1010	101	85-115	
Boron	ug/L	1000	967	97	85-115	
Calcium	ug/L	10000	10100	101	85-115	
Cobalt	ug/L	1000	1040	104	85-115	
Iron	ug/L	10000	10000	100	85-115	
Lead	ug/L	1000	1050	105	85-115	
Lithium	ug/L	1000	1040	104	85-115	
Magnesium	ug/L	10000	10100	101	85-115	
Manganese	ug/L	1000	1010	101	85-115	
Molybdenum	ug/L	1000	1010	101	85-115	
Potassium	ug/L	10000	10400	104	85-115	
Sodium	ug/L	10000	10400	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2799494 2799495

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Spike Conc.	Result	Spike Conc.	Result						
Barium	ug/L	331	1000	1000	1310	97	100	70-130	2	20	
Boron	ug/L	86.3J	1000	1000	1050	96	98	70-130	2	20	
Calcium	ug/L	147000	10000	10000	151000	39	77	70-130	2	20 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**

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

**QUALITY CONTROL DATA**

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2799494												2799495	
Parameter	Units	60354702003 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual		
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD			
Cobalt	ug/L	3.3J	1000	1000	994	997	99	99	70-130	0	20		
Iron	ug/L	<26.8	10000	10000	9650	9840	96	98	70-130	2	20		
Lead	ug/L	<4.6	1000	1000	995	994	99	99	70-130	0	20		
Lithium	ug/L	44.8	1000	1000	1060	1080	102	103	70-130	1	20		
Magnesium	ug/L	36300	10000	10000	44400	45000	81	87	70-130	1	20		
Manganese	ug/L	804	1000	1000	1750	1760	94	96	70-130	1	20		
Molybdenum	ug/L	6.9J	1000	1000	996	1000	99	99	70-130	0	20		
Potassium	ug/L	8290	10000	10000	17900	18300	96	100	70-130	2	20		
Sodium	ug/L	28900	10000	10000	37600	38400	87	95	70-130	2	20		

MATRIX SPIKE SAMPLE: 2799496		60354369012	Spike	MS	MS	% Rec	Qualifiers
Parameter	Units	Result	Conc.	Result	% Rec	Limits	
Barium	ug/L	332	1000	1320	99	70-130	
Boron	ug/L	66.8J	1000	1020	96	70-130	
Calcium	ug/L	98100	10000	108000	102	70-130	
Cobalt	ug/L	<1.5	1000	989	99	70-130	
Iron	ug/L	5380	10000	14900	95	70-130	
Lead	ug/L	<4.6	1000	997	100	70-130	
Lithium	ug/L	31.0	1000	1050	102	70-130	
Magnesium	ug/L	22100	10000	32000	100	70-130	
Manganese	ug/L	382	1000	1370	99	70-130	
Molybdenum	ug/L	<1.7	1000	984	98	70-130	
Potassium	ug/L	3660	10000	13700	100	70-130	
Sodium	ug/L	5190	10000	15100	99	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**

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

### QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

QC Batch: 693107	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: 60354369025

METHOD BLANK: 2799497 Matrix: Water

Associated Lab Samples: 60354369025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	12/08/20 15:50	
Boron	ug/L	<11.7	100	11.7	12/08/20 15:50	
Calcium	ug/L	<32.4	200	32.4	12/08/20 15:50	
Cobalt	ug/L	<1.5	5.0	1.5	12/08/20 15:50	
Iron	ug/L	<26.8	50.0	26.8	12/08/20 15:50	
Lead	ug/L	<4.6	10.0	4.6	12/08/20 15:50	
Lithium	ug/L	<4.6	10.0	4.6	12/10/20 12:23	
Magnesium	ug/L	<19.7	50.0	19.7	12/08/20 15:50	
Manganese	ug/L	<0.97	5.0	0.97	12/08/20 15:50	
Molybdenum	ug/L	<1.7	20.0	1.7	12/08/20 15:50	
Potassium	ug/L	<189	500	189	12/08/20 15:50	
Sodium	ug/L	<107	500	107	12/08/20 15:50	

LABORATORY CONTROL SAMPLE: 2799498

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1040	104	85-115	
Boron	ug/L	1000	961	96	85-115	
Calcium	ug/L	10000	10400	104	85-115	
Cobalt	ug/L	1000	1050	105	85-115	
Iron	ug/L	10000	10600	106	85-115	
Lead	ug/L	1000	1040	104	85-115	
Lithium	ug/L	1000	1070	107	85-115	
Magnesium	ug/L	10000	10100	101	85-115	
Manganese	ug/L	1000	1010	101	85-115	
Molybdenum	ug/L	1000	997	100	85-115	
Potassium	ug/L	10000	10200	102	85-115	
Sodium	ug/L	10000	10700	107	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2799499 2799500

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		60354704006	Result	Spike Conc.	Spike Conc.							Result
Barium	ug/L	286	1000	1000	1310	1260	102	97	70-130	4	20	
Boron	ug/L	77.4J	1000	1000	1050	1010	97	93	70-130	4	20	
Calcium	ug/L	132000	10000	10000	147000	140000	154	84	70-130	5	20 M1	
Cobalt	ug/L	<1.5	1000	1000	1010	963	101	96	70-130	5	20	

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

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

### QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2799499												2799500	
Parameter	Units	60354704006 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual		
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD			
Iron	ug/L	<26.8	10000	10000	9970	9860	100	98	70-130	1	20		
Lead	ug/L	<4.6	1000	1000	1000	960	100	96	70-130	4	20		
Lithium	ug/L	31.9	1000	1000	1050	1020	102	99	70-130	3	20		
Magnesium	ug/L	42000	10000	10000	54000	50500	119	84	70-130	7	20		
Manganese	ug/L	518	1000	1000	1520	1440	101	93	70-130	5	20		
Molybdenum	ug/L	<1.7	1000	1000	950	957	95	96	70-130	1	20		
Potassium	ug/L	8100	10000	10000	18700	17600	106	95	70-130	6	20		
Sodium	ug/L	35400	10000	10000	47200	44800	118	93	70-130	5	20		

MATRIX SPIKE SAMPLE: 2799501									
Parameter	Units	60354705002 Result	Spike	MS	MS	% Rec	Qualifiers		
			Conc.	Result	% Rec	Limits			
Barium	ug/L	229	1000	1170	94	70-130			
Boron	ug/L	87.9J	1000	1010	93	70-130			
Calcium	ug/L	128000	10000	129000	8	70-130	M1		
Cobalt	ug/L	4.7J	1000	974	97	70-130			
Iron	ug/L	217	10000	9830	96	70-130			
Lead	ug/L	<4.6	1000	966	97	70-130			
Lithium	ug/L	32.8	1000	1020	99	70-130			
Magnesium	ug/L	23400	10000	31000	76	70-130			
Manganese	ug/L	551	1000	1450	90	70-130			
Molybdenum	ug/L	<1.7	1000	954	95	70-130			
Potassium	ug/L	5850	10000	14900	91	70-130			
Sodium	ug/L	3720	10000	13300	96	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

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

**QUALITY CONTROL DATA**

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

QC Batch:	693110	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:	60354369001, 60354369002, 60354369003, 60354369004, 60354369005, 60354369006, 60354369007, 60354369008, 60354369009, 60354369010		

METHOD BLANK:	2799510	Matrix:	Water
Associated Lab Samples:	60354369001, 60354369002, 60354369003, 60354369004, 60354369005, 60354369006, 60354369007, 60354369008, 60354369009, 60354369010		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	ug/L	0.48J	1.0	0.086	12/09/20 14:30	
Cadmium	ug/L	0.35J	0.50	0.056	12/09/20 14:30	
Selenium	ug/L	0.43J	1.0	0.18	12/09/20 14:30	

LABORATORY CONTROL SAMPLE: 2799511						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	40	37.3	93	85-115	
Cadmium	ug/L	40	36.0	90	85-115	
Selenium	ug/L	40	36.9	92	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2799512												2799513	
Parameter	Units	60354368004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Arsenic	ug/L	3.2	40	40	40.9	41.5	94	96	70-130	1	20		
Cadmium	ug/L	0.074J	40	40	34.0	34.7	85	86	70-130	2	20		
Selenium	ug/L	<0.18	40	40	35.1	35.2	88	88	70-130	0	20		

MATRIX SPIKE SAMPLE: 2799514											
Parameter	Units	60354702002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers				
Arsenic	ug/L	0.58J	40	37.2	92	70-130					
Cadmium	ug/L	0.071J	40	34.7	87	70-130					
Selenium	ug/L	4.4	40	38.7	86	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**

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

**QUALITY CONTROL DATA**

Project: AMEREN SCPA-CA  
Pace Project No.: 60354369

QC Batch: 693111 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: 60354369011, 60354369012, 60354369013, 60354369014, 60354369015, 60354369016, 60354369017, 60354369018, 60354369019, 60354369020, 60354369021, 60354369022, 60354369025

METHOD BLANK: 2799515 Matrix: Water  
Associated Lab Samples: 60354369011, 60354369012, 60354369013, 60354369014, 60354369015, 60354369016, 60354369017, 60354369018, 60354369019, 60354369020, 60354369021, 60354369022, 60354369025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	ug/L	<0.086	1.0	0.086	12/09/20 15:35	
Cadmium	ug/L	<0.056	0.50	0.056	12/09/20 15:35	
Selenium	ug/L	<0.18	1.0	0.18	12/09/20 15:35	

LABORATORY CONTROL SAMPLE: 2799516

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	40	37.1	93	85-115	
Cadmium	ug/L	40	36.0	90	85-115	
Selenium	ug/L	40	36.6	91	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2799517 2799518

Parameter	Units	60354702003		2799517		2799518		% Rec Limits	Max RPD	Qual		
		MS Result	MSD Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result					
Arsenic	ug/L	0.74J	0.74J	40	40	37.2	36.2	91	89	70-130	3	20
Cadmium	ug/L	0.11J	0.11J	40	40	34.3	33.5	86	83	70-130	3	20
Selenium	ug/L	6.9	6.9	40	40	40.8	40.0	85	83	70-130	2	20

MATRIX SPIKE SAMPLE: 2799519

Parameter	Units	60354369012 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	1.3	40	37.5	90	70-130	
Cadmium	ug/L	<0.056	40	34.7	87	70-130	
Selenium	ug/L	<0.18	40	34.9	87	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**

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

### QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

QC Batch: 689882

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60354369001, 60354369004, 60354369005, 60354369007

METHOD BLANK: 2787067

Matrix: Water

Associated Lab Samples: 60354369001, 60354369004, 60354369005, 60354369007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<8.4	20.0	8.4	11/18/20 11:01	

LABORATORY CONTROL SAMPLE: 2787068

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	493	99	90-110	

SAMPLE DUPLICATE: 2787069

Parameter	Units	60354383003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	376	375	0	10	

SAMPLE DUPLICATE: 2787070

Parameter	Units	60354416002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	95.0	96.1	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

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



### QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

QC Batch: 690119

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60354369002, 60354369003, 60354369006, 60354369008, 60354369009

METHOD BLANK: 2788016

Matrix: Water

Associated Lab Samples: 60354369002, 60354369003, 60354369006, 60354369008, 60354369009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	<8.4	20.0	8.4	11/19/20 08:56	

LABORATORY CONTROL SAMPLE: 2788017

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	500	497	99	90-110	

SAMPLE DUPLICATE: 2788018

Parameter	Units	60354502001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	258	259	0	10	

SAMPLE DUPLICATE: 2788019

Parameter	Units	60354368004 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO <sub>3</sub>	mg/L	160	161	0	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

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

### QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

QC Batch: 690354

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60354369010

METHOD BLANK: 2788854

Matrix: Water

Associated Lab Samples: 60354369010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<8.4	20.0	8.4	11/19/20 11:50	

LABORATORY CONTROL SAMPLE: 2788855

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	494	99	90-110	

SAMPLE DUPLICATE: 2788856

Parameter	Units	60354369010 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<8.4	<8.4		10	

SAMPLE DUPLICATE: 2788857

Parameter	Units	60354538001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	352	361	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

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

**QUALITY CONTROL DATA**

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

---

QC Batch:	690355	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60354369011, 60354369012, 60354369013, 60354369014, 60354369015, 60354369016, 60354369017, 60354369018, 60354369019, 60354369020, 60354369021, 60354369022, 60354369025

---

METHOD BLANK: 2788858 Matrix: Water

Associated Lab Samples: 60354369011, 60354369012, 60354369013, 60354369014, 60354369015, 60354369016, 60354369017, 60354369018, 60354369019, 60354369020, 60354369021, 60354369022, 60354369025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<8.4	20.0	8.4	11/19/20 14:53	

---

LABORATORY CONTROL SAMPLE: 2788859

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	488	98	90-110	

---

SAMPLE DUPLICATE: 2788860

Parameter	Units	60354702003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	460	461	0	10	

---

SAMPLE DUPLICATE: 2788861

Parameter	Units	60354369012 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	310	309	0	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**

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

**QUALITY CONTROL DATA**

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

QC Batch: 689837	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60354369001, 60354369004, 60354369005, 60354369007

METHOD BLANK: 2786727 Matrix: Water  
Associated Lab Samples: 60354369001, 60354369004, 60354369005, 60354369007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/17/20 10:12	

LABORATORY CONTROL SAMPLE: 2786728

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1000	100	80-120	

SAMPLE DUPLICATE: 2786729

Parameter	Units	60354177003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	5860	5550	5	10	

SAMPLE DUPLICATE: 2786730

Parameter	Units	60354371002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1100	1110	0	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**

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

**QUALITY CONTROL DATA**

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

QC Batch:	689985	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60354369002, 60354369003, 60354369006, 60354369008, 60354369009, 60354369010

METHOD BLANK: 2787540 Matrix: Water  
Associated Lab Samples: 60354369002, 60354369003, 60354369006, 60354369008, 60354369009, 60354369010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/17/20 16:29	

LABORATORY CONTROL SAMPLE: 2787541

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

SAMPLE DUPLICATE: 2787542

Parameter	Units	60354371001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	625	626	0	10	

SAMPLE DUPLICATE: 2787543

Parameter	Units	60354368004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1090	1150	6	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**

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

### QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

QC Batch: 690481

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60354369011, 60354369012, 60354369013, 60354369014, 60354369015, 60354369016, 60354369017, 60354369018, 60354369019, 60354369020, 60354369021, 60354369022

METHOD BLANK: 2789436

Matrix: Water

Associated Lab Samples: 60354369011, 60354369012, 60354369013, 60354369014, 60354369015, 60354369016, 60354369017, 60354369018, 60354369019, 60354369020, 60354369021, 60354369022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/19/20 15:03	

LABORATORY CONTROL SAMPLE: 2789437

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1000	100	80-120	

SAMPLE DUPLICATE: 2789438

Parameter	Units	60354702003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	628	606	4	10	

SAMPLE DUPLICATE: 2789439

Parameter	Units	60354369012 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	396	412	4	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

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

### QUALITY CONTROL DATA

Project: AMEREN SCPA-CA  
Pace Project No.: 60354369

QC Batch: 696518	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60354369025

METHOD BLANK: 2811576 Matrix: Water

Associated Lab Samples: 60354369025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	12/22/20 15:17	

LABORATORY CONTROL SAMPLE: 2811577

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1040	104	80-120	

SAMPLE DUPLICATE: 2811578

Parameter	Units	60357629001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1260	1270	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

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

**QUALITY CONTROL DATA**

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

QC Batch: 692033

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: 60354369001, 60354369002, 60354369003, 60354369004, 60354369005, 60354369006, 60354369007, 60354369008, 60354369009, 60354369010

METHOD BLANK: 2795126

Matrix: Water

Associated Lab Samples: 60354369001, 60354369002, 60354369003, 60354369004, 60354369005, 60354369006, 60354369007, 60354369008, 60354369009, 60354369010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	12/01/20 08:23	
Fluoride	mg/L	<0.075	0.20	0.075	12/01/20 08:23	
Sulfate	mg/L	<0.28	1.0	0.28	12/01/20 08:23	

METHOD BLANK: 2795704

Matrix: Water

Associated Lab Samples: 60354369001, 60354369002, 60354369003, 60354369004, 60354369005, 60354369006, 60354369007, 60354369008, 60354369009, 60354369010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	12/01/20 08:27	
Fluoride	mg/L	<0.075	0.20	0.075	12/01/20 08:27	
Sulfate	mg/L	<0.28	1.0	0.28	12/01/20 08:27	

METHOD BLANK: 2795986

Matrix: Water

Associated Lab Samples: 60354369001, 60354369002, 60354369003, 60354369004, 60354369005, 60354369006, 60354369007, 60354369008, 60354369009, 60354369010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.43J	1.0	0.39	12/02/20 08:04	
Fluoride	mg/L	<0.075	0.20	0.075	12/02/20 08:04	
Sulfate	mg/L	<0.28	1.0	0.28	12/02/20 08:04	

METHOD BLANK: 2796513

Matrix: Water

Associated Lab Samples: 60354369001, 60354369002, 60354369003, 60354369004, 60354369005, 60354369006, 60354369007, 60354369008, 60354369009, 60354369010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.63J	1.0	0.39	12/02/20 08:11	
Fluoride	mg/L	<0.075	0.20	0.075	12/02/20 08:11	
Sulfate	mg/L	<0.28	1.0	0.28	12/02/20 08:11	

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**

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



**QUALITY CONTROL DATA**

Project: AMEREN SCPA-CA  
Pace Project No.: 60354369

LABORATORY CONTROL SAMPLE: 2795127

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	2.4	97	90-110	
Sulfate	mg/L	5	5.0	99	90-110	

LABORATORY CONTROL SAMPLE: 2795705

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	2.4	95	90-110	
Sulfate	mg/L	5	5.0	99	90-110	

LABORATORY CONTROL SAMPLE: 2795987

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	2.4	97	90-110	
Sulfate	mg/L	5	5.0	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2795128 2795129

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		20179873001 Result	Spike Conc.	Spike Conc.	MS Result								
Chloride	mg/L	9490	2500	2500	12400	12300	114	114	80-120	0	15	E	
Fluoride	mg/L	0.075U	12.5	12.5	12.8	11.6	102	93	80-120	9	15		
Sulfate	mg/L	3220	2500	2500	5640	5610	97	96	80-120	0	15		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2795130 2795131

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60354492003 Result	Spike Conc.	Spike Conc.	MS Result								
Chloride	mg/L	139	50	50	208	201	137	125	80-120	3	15	E,M1	
Fluoride	mg/L	ND	2.5	2.5	2.6	2.7	99	101	80-120	2	15		
Sulfate	mg/L	92.0	50	50	152	148	119	112	80-120	2	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**

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

**QUALITY CONTROL DATA**

Project: AMEREN SCPA-CA  
Pace Project No.: 60354369

QC Batch: 693100 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: 60354369011, 60354369012, 60354369013, 60354369014, 60354369015, 60354369016, 60354369017, 60354369018, 60354369019, 60354369020, 60354369021, 60354369022

METHOD BLANK: 2799457 Matrix: Water  
Associated Lab Samples: 60354369011, 60354369012, 60354369013, 60354369014, 60354369015, 60354369016, 60354369017, 60354369018, 60354369019, 60354369020, 60354369021, 60354369022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	12/07/20 08:24	
Fluoride	mg/L	<0.075	0.20	0.075	12/07/20 08:24	
Sulfate	mg/L	<0.28	1.0	0.28	12/07/20 08:24	

METHOD BLANK: 2802268 Matrix: Water  
Associated Lab Samples: 60354369011, 60354369012, 60354369013, 60354369014, 60354369015, 60354369016, 60354369017, 60354369018, 60354369019, 60354369020, 60354369021, 60354369022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	12/08/20 08:14	
Fluoride	mg/L	<0.075	0.20	0.075	12/08/20 08:14	
Sulfate	mg/L	<0.28	1.0	0.28	12/08/20 08:14	

LABORATORY CONTROL SAMPLE: 2799458

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	99	90-110	
Fluoride	mg/L	2.5	2.5	101	90-110	
Sulfate	mg/L	5	4.7	95	90-110	

LABORATORY CONTROL SAMPLE: 2802269

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	2.6	102	90-110	
Sulfate	mg/L	5	5.1	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2799459 2799460

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Spike Conc.	Result	Spike Conc.	Result						
Chloride	mg/L	5	13.4	5	17.6	84	91	80-120	2	15	
Fluoride	mg/L	2.5	0.34	2.5	2.3	79	86	80-120	7	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**

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

**QUALITY CONTROL DATA**

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2799459												2799460	
Parameter	Units	60354369012		MS	MSD	MS	MSD	MS	MSD	% Rec	Max	RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD			
Sulfate	mg/L	38.1	10	10	50.9	54.3	128	162	80-120	7	15 E		

MATRIX SPIKE SAMPLE: 2799461		60354369019		MS	MS	% Rec	Qualifiers
Parameter	Units	Result	Spike Conc.	Result	% Rec	Limits	
Chloride	mg/L	76.7	50	125	96	80-120	
Fluoride	mg/L	0.16J	2.5	2.4	90	80-120	
Sulfate	mg/L	462	250	705	97	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.

**REPORT OF LABORATORY ANALYSIS**

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

**QUALITY CONTROL DATA**

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

QC Batch: 693762	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: 60354369025

METHOD BLANK: 2801621 Matrix: Water

Associated Lab Samples: 60354369025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	12/09/20 08:45	
Fluoride	mg/L	<0.075	0.20	0.075	12/09/20 08:45	
Sulfate	mg/L	<0.42	1.0	0.42	12/09/20 08:45	

METHOD BLANK: 2803421 Matrix: Water

Associated Lab Samples: 60354369025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	12/09/20 08:45	
Fluoride	mg/L	<0.075	0.20	0.075	12/09/20 08:45	
Sulfate	mg/L	<0.42	1.0	0.42	12/09/20 08:45	

METHOD BLANK: 2803443 Matrix: Water

Associated Lab Samples: 60354369025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	12/10/20 10:44	
Fluoride	mg/L	<0.075	0.20	0.075	12/10/20 10:44	
Sulfate	mg/L	<0.42	1.0	0.42	12/10/20 10:44	

METHOD BLANK: 2804050 Matrix: Water

Associated Lab Samples: 60354369025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	12/10/20 10:44	
Fluoride	mg/L	<0.075	0.20	0.075	12/10/20 10:44	
Sulfate	mg/L	<0.42	1.0	0.42	12/10/20 10:44	

LABORATORY CONTROL SAMPLE: 2801622

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	2.5	98	90-110	

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**

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

### QUALITY CONTROL DATA

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

LABORATORY CONTROL SAMPLE: 2801622

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	5.0	100	90-110	

LABORATORY CONTROL SAMPLE: 2803422

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	2.5	98	90-110	
Sulfate	mg/L	5	5.0	100	90-110	

LABORATORY CONTROL SAMPLE: 2803444

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	2.4	98	90-110	
Sulfate	mg/L	5	5.0	99	90-110	

LABORATORY CONTROL SAMPLE: 2804051

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	2.4	98	90-110	
Sulfate	mg/L	5	5.0	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2801623 2801624

Parameter	Units	60354704006		MS		MSD		% Rec		Limits	RPD	Max RPD	Qual
		Result	Conc.	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	% Rec	% Rec				
Chloride	mg/L	68.5	25	25	25	95.8	94.7	109	105	80-120	1	15	
Fluoride	mg/L	0.41	2.5	2.5	2.5	2.9	3.4	101	119	80-120	14	15	
Sulfate	mg/L	37.1	25	25	25	62.0	61.2	100	97	80-120	1	15	

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

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: S-LMW-1S</b> <b>Lab ID: 60354369001</b> Collected: 11/11/20 11:05      Received: 11/13/20 03:54      Matrix: Water PWS:      Site ID:      Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.0581 ± 0.265 (0.540)</b> <b>C:NA T:97%</b>	pCi/L	12/10/20 14:10	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.727 ± 0.437 (0.814)</b> <b>C:71% T:84%</b>	pCi/L	12/10/20 12:12	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-LMW-2S**      **Lab ID: 60354369002**      Collected: 11/12/20 14:15      Received: 11/13/20 03:54      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	<b>0.0626 ± 0.286 (0.461)</b> <b>C:NA T:91%</b>	pCi/L	12/10/20 14:23	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>1.27 ± 0.519 (0.821)</b> <b>C:69% T:84%</b>	pCi/L	12/10/20 12:13	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: S-LMW-4S</b> <b>Lab ID: 60354369003</b> Collected: 11/12/20 12:20      Received: 11/13/20 03:54      Matrix: Water PWS:      Site ID:      Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.549 ± 0.662 (1.09)</b> <b>C:NA T:87%</b>	pCi/L	12/10/20 13:54	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>1.87 ± 0.607 (0.821)</b> <b>C:69% T:83%</b>	pCi/L	12/10/20 12:12	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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



**ANALYTICAL RESULTS - RADIOCHEMISTRY**

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: S-LMW-5S</b> <b>Lab ID: 60354369004</b> Collected: 11/11/20 15:20      Received: 11/13/20 03:54      Matrix: Water PWS:      Site ID:      Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.107 ± 0.244 (0.394)</b> <b>C:NA T:108%</b>	pCi/L	12/10/20 13:54	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>1.23 ± 0.515 (0.859)</b> <b>C:70% T:94%</b>	pCi/L	12/10/20 12:12	15262-20-1	

**REPORT OF LABORATORY ANALYSIS**

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: S-LMW-6S</b> <b>Lab ID: 60354369005</b> Collected: 11/11/20 14:30      Received: 11/13/20 03:54      Matrix: Water PWS:      Site ID:      Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.812 ± 0.571 (0.729)</b> <b>C:NA T:95%</b>	pCi/L	12/10/20 13:54	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.832 ± 0.495 (0.922)</b> <b>C:67% T:82%</b>	pCi/L	12/10/20 12:12	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-PZ-9D**      **Lab ID: 60354369006**      Collected: 11/12/20 11:05      Received: 11/13/20 03:54      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	<b>0.393 ± 0.408 (0.608)</b> <b>C:NA T:88%</b>	pCi/L	12/10/20 13:54	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>1.39 ± 0.567 (0.925)</b> <b>C:68% T:87%</b>	pCi/L	12/10/20 12:12	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: S-CA-DUP-2</b> <b>Lab ID: 60354369007</b> Collected: 11/11/20 08:00      Received: 11/13/20 03:54      Matrix: Water PWS:      Site ID:      Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.0651 ± 0.338 (0.701)</b> <b>C:NA T:85%</b>	pCi/L	12/10/20 13:54	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>1.84 ± 0.636 (0.916)</b> <b>C:67% T:84%</b>	pCi/L	12/10/20 12:12	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-CA-FB-2**      **Lab ID: 60354369008**      Collected: 11/12/20 11:35      Received: 11/13/20 03:54      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	<b>0.000 ± 0.288 (0.464)</b> <b>C:NA T:96%</b>	pCi/L	12/10/20 13:54	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>1.54 ± 0.605 (0.955)</b> <b>C:67% T:80%</b>	pCi/L	12/10/20 12:12	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-PZ-1S**      **Lab ID: 60354369009**      Collected: 11/13/20 12:00      Received: 11/14/20 04:00      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	<b>-0.255 ± 0.396 (0.955)</b> <b>C:NA T:89%</b>	pCi/L	12/10/20 14:23	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.950 ± 0.528 (0.974)</b> <b>C:67% T:82%</b>	pCi/L	12/10/20 12:13	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: S-CA-FB-1</b> <b>Lab ID: 60354369010</b> Collected: 11/13/20 12:30      Received: 11/14/20 04:00      Matrix: Water PWS:      Site ID:      Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.258 ± 0.359 (0.599)</b> <b>C:NA T:89%</b>	pCi/L	12/10/20 14:23	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.230 ± 0.425 (0.931)</b> <b>C:61% T:89%</b>	pCi/L	12/10/20 12:13	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-BMW-3S**      **Lab ID: 60354369011**      Collected: 11/16/20 12:20      Received: 11/18/20 04:15      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	<b>-0.133 ± 0.308 (0.668)</b> <b>C:NA T:87%</b>	pCi/L	12/18/20 13:47	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.0115 ± 0.397 (0.919)</b> <b>C:69% T:93%</b>	pCi/L	12/16/20 15:45	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-TP-8D**      **Lab ID: 60354369012**      Collected: 11/16/20 09:52      Received: 11/18/20 04:15      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	<b>0.104 ± 0.237 (0.381)</b> <b>C:NA T:90%</b>	pCi/L	12/15/20 15:28	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.860 ± 0.531 (0.997)</b> <b>C:60% T:86%</b>	pCi/L	12/15/20 12:12	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-TP-6S**      **Lab ID: 60354369013**      Collected: 11/16/20 15:25      Received: 11/18/20 04:15      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	<b>0.0619 ± 0.364 (0.743)</b> <b>C:NA T:93%</b>	pCi/L	12/15/20 15:28	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.0522 ± 0.491 (1.12)</b> <b>C:56% T:87%</b>	pCi/L	12/15/20 12:35	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-TP-6D**      **Lab ID: 60354369014**      Collected: 11/16/20 16:02      Received: 11/18/20 04:15      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	<b>0.282 ± 0.479 (0.845)</b> <b>C:NA T:87%</b>	pCi/L	12/15/20 15:28	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>1.47 ± 0.676 (1.18)</b> <b>C:59% T:83%</b>	pCi/L	12/15/20 12:12	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-TP-3D**      **Lab ID: 60354369015**      Collected: 11/17/20 09:25      Received: 11/18/20 04:15      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	<b>0.715 ± 0.531 (0.664)</b> <b>C:NA T:81%</b>	pCi/L	12/15/20 15:28	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.629 ± 0.504 (0.998)</b> <b>C:58% T:76%</b>	pCi/L	12/15/20 12:12	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-TP-4D**      **Lab ID: 60354369016**      Collected: 11/17/20 10:35      Received: 11/18/20 04:15      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	<b>0.409 ± 0.503 (0.820)</b> <b>C:NA T:92%</b>	pCi/L	12/15/20 15:28	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>1.00 ± 0.601 (1.13)</b> <b>C:55% T:83%</b>	pCi/L	12/15/20 12:25	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-TP-5D**      **Lab ID: 60354369017**      Collected: 11/17/20 15:25      Received: 11/18/20 04:15      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	<b>0.303 ± 0.472 (0.817)</b> <b>C:NA T:88%</b>	pCi/L	12/15/20 15:28	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.0563 ± 0.427 (0.981)</b> <b>C:60% T:82%</b>	pCi/L	12/15/20 12:13	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-BMW-1S**      **Lab ID: 60354369018**      Collected: 11/16/20 14:50      Received: 11/18/20 04:15      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	<b>0.686 ± 0.448 (0.459)</b> <b>C:NA T:93%</b>	pCi/L	12/15/20 15:28	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>1.40 ± 0.682 (1.20)</b> <b>C:63% T:85%</b>	pCi/L	12/15/20 14:09	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-TP-2D**      **Lab ID: 60354369019**      Collected: 11/17/20 14:50      Received: 11/18/20 04:15      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	<b>0.149 ± 0.340 (0.202)</b> <b>C:NA T:86%</b>	pCi/L	12/15/20 15:46	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.898 ± 0.473 (0.847)</b> <b>C:65% T:88%</b>	pCi/L	12/15/20 12:18	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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



### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-AM-1S**      **Lab ID: 60354369020**      Collected: 11/16/20 11:15      Received: 11/18/20 04:15      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	<b>0.387 ± 0.475 (0.775)</b> <b>C:NA T:95%</b>	pCi/L	12/15/20 15:46	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.305 ± 0.402 (0.857)</b> <b>C:65% T:88%</b>	pCi/L	12/15/20 12:10	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-AM-1D**      **Lab ID: 60354369021**      Collected: 11/16/20 10:30      Received: 11/18/20 04:15      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	<b>0.185 ± 0.402 (0.742)</b> <b>C:NA T:91%</b>	pCi/L	12/15/20 15:46	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.842 ± 0.444 (0.796)</b> <b>C:67% T:89%</b>	pCi/L	12/15/20 12:10	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-UG-3**      **Lab ID: 60354369022**      Collected: 11/17/20 15:40      Received: 11/18/20 04:15      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	<b>0.0587 ± 0.305 (0.632)</b> <b>C:NA T:97%</b>	pCi/L	12/15/20 15:46	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>1.07 ± 0.504 (0.862)</b> <b>C:61% T:89%</b>	pCi/L	12/15/20 12:10	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-CA-MS-1 (S-TP-8D)**      **Lab ID: 60354369023**      Collected: 11/16/20 09:52      Received: 11/18/20 04:15      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	<b>108.84 %REC ± NA (NA)</b> <b>C:NA T:NA%</b>	pCi/L	12/15/20 15:46	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>86.21 %REC ± NA (NA)</b> <b>C:NA T:NA</b>	pCi/L	12/15/20 12:11	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

**Sample: S-CA-MSD-1 (S-TP-8D)**    **Lab ID: 60354369024**    Collected: 11/16/20 09:52    Received: 11/18/20 04:15    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	<b>94.58 %REC 14.02 RPD ±</b> <b>NA (NA)</b> <b>C:NA T:NA%</b>	pCi/L	12/15/20 15:46	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>89.14 %REC 3.34 RPD ±</b> <b>NA (NA)</b> <b>C:NA T:NA</b>	pCi/L	12/15/20 12:04	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: S-CA-DUP-1</b> <b>Lab ID: 60354369025</b> Collected: 11/17/20 08:00      Received: 11/18/20 04:15      Matrix: Water PWS:      Site ID:      Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	<b>0.462 ± 0.536 (0.865)</b> <b>C:NA T:93%</b>	pCi/L	12/15/20 15:46	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>0.649 ± 0.383 (0.696)</b> <b>C:67% T:86%</b>	pCi/L	12/15/20 12:04	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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

### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

QC Batch: 425508

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: 60354369011

METHOD BLANK: 2056171

Matrix: Water

Associated Lab Samples: 60354369011

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.103 ± 0.364 (0.725) C:NA T:77%	pCi/L	12/18/20 13:29	

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

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

### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

QC Batch: 425510

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: 60354369011

METHOD BLANK: 2056176

Matrix: Water

Associated Lab Samples: 60354369011

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.843 ± 0.482 (0.880) C:74% T:77%	pCi/L	12/16/20 15:39	

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

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



### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

---

QC Batch:	425303	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: 60354369012, 60354369013, 60354369014, 60354369015, 60354369016, 60354369017, 60354369018, 60354369019, 60354369020, 60354369021, 60354369022, 60354369023, 60354369024, 60354369025

---

METHOD BLANK:	2055267	Matrix:	Water
---------------	---------	---------	-------

Associated Lab Samples: 60354369012, 60354369013, 60354369014, 60354369015, 60354369016, 60354369017, 60354369018, 60354369019, 60354369020, 60354369021, 60354369022, 60354369023, 60354369024, 60354369025

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.263 ± 0.437 (0.951) C:68% T:74%	pCi/L	12/15/20 12:33	

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

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

**QUALITY CONTROL - RADIOCHEMISTRY**

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

---

QC Batch:	425302	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: 60354369012, 60354369013, 60354369014, 60354369015, 60354369016, 60354369017, 60354369018, 60354369019, 60354369020, 60354369021, 60354369022, 60354369023, 60354369024, 60354369025

---

METHOD BLANK:	2055264	Matrix:	Water
---------------	---------	---------	-------

Associated Lab Samples: 60354369012, 60354369013, 60354369014, 60354369015, 60354369016, 60354369017, 60354369018, 60354369019, 60354369020, 60354369021, 60354369022, 60354369023, 60354369024, 60354369025

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.000 ± 0.363 (0.786) C:NA T:81%	pCi/L	12/15/20 15:28	

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**

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

### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

QC Batch: 424208

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: 60354369001, 60354369002, 60354369003, 60354369004, 60354369005, 60354369006, 60354369007, 60354369008, 60354369009, 60354369010

METHOD BLANK: 2050440

Matrix: Water

Associated Lab Samples: 60354369001, 60354369002, 60354369003, 60354369004, 60354369005, 60354369006, 60354369007, 60354369008, 60354369009, 60354369010

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.159 ± 0.316 (0.698) C:72% T:79%	pCi/L	12/10/20 12:14	

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

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

### QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

QC Batch: 424207

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: 60354369001, 60354369002, 60354369003, 60354369004, 60354369005, 60354369006, 60354369007, 60354369008, 60354369009, 60354369010

METHOD BLANK: 2050439

Matrix: Water

Associated Lab Samples: 60354369001, 60354369002, 60354369003, 60354369004, 60354369005, 60354369006, 60354369007, 60354369008, 60354369009, 60354369010

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.163 ± 0.283 (0.713) C:NA T:84%	pCi/L	12/10/20 13:54	

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

### REPORT OF LABORATORY ANALYSIS

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

## QUALIFIERS

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

---

### 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.

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.

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

## REPORT OF LABORATORY ANALYSIS

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

### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA-CA  
Pace Project No.: 60354369

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60354369001	S-LMW-1S	EPA 200.7	693105	EPA 200.7	693136
60354369002	S-LMW-2S	EPA 200.7	693105	EPA 200.7	693136
60354369003	S-LMW-4S	EPA 200.7	693105	EPA 200.7	693136
60354369004	S-LMW-5S	EPA 200.7	693105	EPA 200.7	693136
60354369005	S-LMW-6S	EPA 200.7	693105	EPA 200.7	693136
60354369006	S-PZ-9D	EPA 200.7	693105	EPA 200.7	693136
60354369007	S-CA-DUP-2	EPA 200.7	693105	EPA 200.7	693136
60354369008	S-CA-FB-2	EPA 200.7	693105	EPA 200.7	693136
60354369009	S-PZ-1S	EPA 200.7	693105	EPA 200.7	693136
60354369010	S-CA-FB-1	EPA 200.7	693105	EPA 200.7	693136
60354369011	S-BMW-3S	EPA 200.7	693106	EPA 200.7	693137
60354369012	S-TP-8D	EPA 200.7	693106	EPA 200.7	693137
60354369013	S-TP-6S	EPA 200.7	693106	EPA 200.7	693137
60354369014	S-TP-6D	EPA 200.7	693106	EPA 200.7	693137
60354369015	S-TP-3D	EPA 200.7	693106	EPA 200.7	693137
60354369016	S-TP-4D	EPA 200.7	693106	EPA 200.7	693137
60354369017	S-TP-5D	EPA 200.7	693106	EPA 200.7	693137
60354369018	S-BMW-1S	EPA 200.7	693106	EPA 200.7	693137
60354369019	S-TP-2D	EPA 200.7	693106	EPA 200.7	693137
60354369020	S-AM-1S	EPA 200.7	693106	EPA 200.7	693137
60354369021	S-AM-1D	EPA 200.7	693106	EPA 200.7	693137
60354369022	S-UG-3	EPA 200.7	693106	EPA 200.7	693137
60354369025	S-CA-DUP-1	EPA 200.7	693107	EPA 200.7	693138
60354369001	S-LMW-1S	EPA 200.8	693110	EPA 200.8	693134
60354369002	S-LMW-2S	EPA 200.8	693110	EPA 200.8	693134
60354369003	S-LMW-4S	EPA 200.8	693110	EPA 200.8	693134
60354369004	S-LMW-5S	EPA 200.8	693110	EPA 200.8	693134
60354369005	S-LMW-6S	EPA 200.8	693110	EPA 200.8	693134
60354369006	S-PZ-9D	EPA 200.8	693110	EPA 200.8	693134
60354369007	S-CA-DUP-2	EPA 200.8	693110	EPA 200.8	693134
60354369008	S-CA-FB-2	EPA 200.8	693110	EPA 200.8	693134
60354369009	S-PZ-1S	EPA 200.8	693110	EPA 200.8	693134
60354369010	S-CA-FB-1	EPA 200.8	693110	EPA 200.8	693134
60354369011	S-BMW-3S	EPA 200.8	693111	EPA 200.8	693135
60354369012	S-TP-8D	EPA 200.8	693111	EPA 200.8	693135
60354369013	S-TP-6S	EPA 200.8	693111	EPA 200.8	693135
60354369014	S-TP-6D	EPA 200.8	693111	EPA 200.8	693135
60354369015	S-TP-3D	EPA 200.8	693111	EPA 200.8	693135
60354369016	S-TP-4D	EPA 200.8	693111	EPA 200.8	693135
60354369017	S-TP-5D	EPA 200.8	693111	EPA 200.8	693135
60354369018	S-BMW-1S	EPA 200.8	693111	EPA 200.8	693135
60354369019	S-TP-2D	EPA 200.8	693111	EPA 200.8	693135
60354369020	S-AM-1S	EPA 200.8	693111	EPA 200.8	693135
60354369021	S-AM-1D	EPA 200.8	693111	EPA 200.8	693135
60354369022	S-UG-3	EPA 200.8	693111	EPA 200.8	693135
60354369025	S-CA-DUP-1	EPA 200.8	693111	EPA 200.8	693135

### REPORT OF LABORATORY ANALYSIS

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

### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60354369001	S-LMW-1S	EPA 903.1	424207		
60354369002	S-LMW-2S	EPA 903.1	424207		
60354369003	S-LMW-4S	EPA 903.1	424207		
60354369004	S-LMW-5S	EPA 903.1	424207		
60354369005	S-LMW-6S	EPA 903.1	424207		
60354369006	S-PZ-9D	EPA 903.1	424207		
60354369007	S-CA-DUP-2	EPA 903.1	424207		
60354369008	S-CA-FB-2	EPA 903.1	424207		
60354369009	S-PZ-1S	EPA 903.1	424207		
60354369010	S-CA-FB-1	EPA 903.1	424207		
60354369011	S-BMW-3S	EPA 903.1	425508		
60354369012	S-TP-8D	EPA 903.1	425302		
60354369013	S-TP-6S	EPA 903.1	425302		
60354369014	S-TP-6D	EPA 903.1	425302		
60354369015	S-TP-3D	EPA 903.1	425302		
60354369016	S-TP-4D	EPA 903.1	425302		
60354369017	S-TP-5D	EPA 903.1	425302		
60354369018	S-BMW-1S	EPA 903.1	425302		
60354369019	S-TP-2D	EPA 903.1	425302		
60354369020	S-AM-1S	EPA 903.1	425302		
60354369021	S-AM-1D	EPA 903.1	425302		
60354369022	S-UG-3	EPA 903.1	425302		
60354369023	S-CA-MS-1 (S-TP-8D)	EPA 903.1	425302		
60354369024	S-CA-MSD-1 (S-TP-8D)	EPA 903.1	425302		
60354369025	S-CA-DUP-1	EPA 903.1	425302		
60354369001	S-LMW-1S	EPA 904.0	424208		
60354369002	S-LMW-2S	EPA 904.0	424208		
60354369003	S-LMW-4S	EPA 904.0	424208		
60354369004	S-LMW-5S	EPA 904.0	424208		
60354369005	S-LMW-6S	EPA 904.0	424208		
60354369006	S-PZ-9D	EPA 904.0	424208		
60354369007	S-CA-DUP-2	EPA 904.0	424208		
60354369008	S-CA-FB-2	EPA 904.0	424208		
60354369009	S-PZ-1S	EPA 904.0	424208		
60354369010	S-CA-FB-1	EPA 904.0	424208		
60354369011	S-BMW-3S	EPA 904.0	425510		
60354369012	S-TP-8D	EPA 904.0	425303		
60354369013	S-TP-6S	EPA 904.0	425303		
60354369014	S-TP-6D	EPA 904.0	425303		
60354369015	S-TP-3D	EPA 904.0	425303		
60354369016	S-TP-4D	EPA 904.0	425303		
60354369017	S-TP-5D	EPA 904.0	425303		
60354369018	S-BMW-1S	EPA 904.0	425303		
60354369019	S-TP-2D	EPA 904.0	425303		
60354369020	S-AM-1S	EPA 904.0	425303		
60354369021	S-AM-1D	EPA 904.0	425303		

### REPORT OF LABORATORY ANALYSIS

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

### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60354369022	S-UG-3	EPA 904.0	425303		
60354369023	S-CA-MS-1 (S-TP-8D)	EPA 904.0	425303		
60354369024	S-CA-MSD-1 (S-TP-8D)	EPA 904.0	425303		
60354369025	S-CA-DUP-1	EPA 904.0	425303		
60354369001	S-LMW-1S	SM 2320B	689882		
60354369002	S-LMW-2S	SM 2320B	690119		
60354369003	S-LMW-4S	SM 2320B	690119		
60354369004	S-LMW-5S	SM 2320B	689882		
60354369005	S-LMW-6S	SM 2320B	689882		
60354369006	S-PZ-9D	SM 2320B	690119		
60354369007	S-CA-DUP-2	SM 2320B	689882		
60354369008	S-CA-FB-2	SM 2320B	690119		
60354369009	S-PZ-1S	SM 2320B	690119		
60354369010	S-CA-FB-1	SM 2320B	690354		
60354369011	S-BMW-3S	SM 2320B	690355		
60354369012	S-TP-8D	SM 2320B	690355		
60354369013	S-TP-6S	SM 2320B	690355		
60354369014	S-TP-6D	SM 2320B	690355		
60354369015	S-TP-3D	SM 2320B	690355		
60354369016	S-TP-4D	SM 2320B	690355		
60354369017	S-TP-5D	SM 2320B	690355		
60354369018	S-BMW-1S	SM 2320B	690355		
60354369019	S-TP-2D	SM 2320B	690355		
60354369020	S-AM-1S	SM 2320B	690355		
60354369021	S-AM-1D	SM 2320B	690355		
60354369022	S-UG-3	SM 2320B	690355		
60354369025	S-CA-DUP-1	SM 2320B	690355		
60354369001	S-LMW-1S	SM 2540C	689837		
60354369002	S-LMW-2S	SM 2540C	689985		
60354369003	S-LMW-4S	SM 2540C	689985		
60354369004	S-LMW-5S	SM 2540C	689837		
60354369005	S-LMW-6S	SM 2540C	689837		
60354369006	S-PZ-9D	SM 2540C	689985		
60354369007	S-CA-DUP-2	SM 2540C	689837		
60354369008	S-CA-FB-2	SM 2540C	689985		
60354369009	S-PZ-1S	SM 2540C	689985		
60354369010	S-CA-FB-1	SM 2540C	689985		
60354369011	S-BMW-3S	SM 2540C	690481		
60354369012	S-TP-8D	SM 2540C	690481		
60354369013	S-TP-6S	SM 2540C	690481		
60354369014	S-TP-6D	SM 2540C	690481		

### REPORT OF LABORATORY ANALYSIS

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



### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA-CA

Pace Project No.: 60354369

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60354369015	S-TP-3D	SM 2540C	690481		
60354369016	S-TP-4D	SM 2540C	690481		
60354369017	S-TP-5D	SM 2540C	690481		
60354369018	S-BMW-1S	SM 2540C	690481		
60354369019	S-TP-2D	SM 2540C	690481		
60354369020	S-AM-1S	SM 2540C	690481		
60354369021	S-AM-1D	SM 2540C	690481		
60354369022	S-UG-3	SM 2540C	690481		
60354369025	S-CA-DUP-1	SM 2540C	696518		
60354369001	S-LMW-1S	EPA 300.0	692033		
60354369002	S-LMW-2S	EPA 300.0	692033		
60354369003	S-LMW-4S	EPA 300.0	692033		
60354369004	S-LMW-5S	EPA 300.0	692033		
60354369005	S-LMW-6S	EPA 300.0	692033		
60354369006	S-PZ-9D	EPA 300.0	692033		
60354369007	S-CA-DUP-2	EPA 300.0	692033		
60354369008	S-CA-FB-2	EPA 300.0	692033		
60354369009	S-PZ-1S	EPA 300.0	692033		
60354369010	S-CA-FB-1	EPA 300.0	692033		
60354369011	S-BMW-3S	EPA 300.0	693100		
60354369012	S-TP-8D	EPA 300.0	693100		
60354369013	S-TP-6S	EPA 300.0	693100		
60354369014	S-TP-6D	EPA 300.0	693100		
60354369015	S-TP-3D	EPA 300.0	693100		
60354369016	S-TP-4D	EPA 300.0	693100		
60354369017	S-TP-5D	EPA 300.0	693100		
60354369018	S-BMW-1S	EPA 300.0	693100		
60354369019	S-TP-2D	EPA 300.0	693100		
60354369020	S-AM-1S	EPA 300.0	693100		
60354369021	S-AM-1D	EPA 300.0	693100		
60354369022	S-UG-3	EPA 300.0	693100		
60354369025	S-CA-DUP-1	EPA 300.0	693762		

### REPORT OF LABORATORY ANALYSIS

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



**Sample Condition Upon Receipt**

WO#: 60354369  
60354369

Client Name: Goldier Assoc.

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  X271C

Thermometer Used: T299 Type of Ice: Wet Blue  None

Cooler Temperature (°C): As-read 15.1 Corr. Factor to .2 Corrected 15.3  
Temperature should be above freezing to 6°C 15.7, 0.9, 0.3, 0.8 15.9, 1.1, 0.5, 1.0  
Date and initials of person examining contents: 11-13-2020

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	<u>all coolers out of temp had only Radium samples</u>
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 <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT# <u>603173</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 jehurch at 3:28 pm, 11/16/20

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_







**Sample Condition Upon Receipt**

**WO# : 60354369**



Client Name: Golder Assoc

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  201C

Thermometer Used: T299 Type of Ice: Wet  Blue  None

Cooler Temperature (°C): As-read 12.7 Corr. Factor +0.2 Corrected 12.9  
Temperature should be above freezing to 6°C 2.2 2.4

Date and initials of person examining contents: 11-14-2020

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	<u>cooler out of temp</u>
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<u>had only Radon samples</u>
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 <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT# <u>603173</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 3:28 pm, 11/16/20

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_





Sample Condition Upon Receipt

WO#: 60354369



60354369

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: T099 Type of Ice: Wet [ ] Blue [ ] None [ ]

Cooler Temperature (°C): As-read 14.8 Corr. Factor 0.2 Corrected 15.0

Date and initials of person examining contents: 11.18.2020

Temperature should be above freezing to 6°C 13.5, 14.0, 0.6, 0.4, 2.2, 0.4, 13.7, 14.2, 0.8, 0.3, 2.4, 0.8

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	all coolers out of temp
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	had only Radium
Sufficient volume:	<input 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: WT	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT# C03173	<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 9:47 am, 11/19/20

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: 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 Schnieder, Ryan Feidman  
Purchase Order No.: COC #12  
Project Name: Ameren Sioux Energy Center SCD  
Project Manager: Jamie Church  
Project Number: 153140602.0003E

**Section C**  
Invoice Information:  
Attention:  
Company Name: Golder Associates Inc  
Address:  
NPDES  GROUND WATER  DRINKING WATER  
UST  RCRA  OTHER   
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	Required Client Information SAMPLE ID (A-Z, 0-9 / , -) Sample IDs MUST BE UNIQUE	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	Preservatives H <sub>2</sub> SO <sub>4</sub> HNO <sub>3</sub> HCl NaOH Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Methanol Other	Requested Analysis Filtered (Y/N)	Y/N	Analysis Test	Chloride/Fluoride/Sulfate	App III and Cat/An Metals	Alkalinity	TDS	Appendix IV Metals *	Mercury	Radium 226	Radium 226	Residual Chlorine (Y/N)	Face Project No./ Lab I.D.
			COMPOSITE START	COMPOSITE END/GRAB																	
1		S-TP-2	DATE	TIME			4														
2		S-DO5 S-AM-15	11/17/20	0945	G	WT	1														
3		S-DO5 S-AM-1D	11/16/20	1115	G	WT	1														
4		S-DO5 S-V6-3	11/16/20	1030	G	WT	1														
5		S-SCPD-DUP-1	11/17/20	1540	G	WT	1														
6		S-SCPD-FBT			G	WT															
7		S-SCPD-MS-1			G	WT															
8		S-SCPD-MS-4			G	WT															
9		S-BMW-15			G	WT															
10		S-BMW-03			G	WT															
11					G	WT															
12					G	WT															

**RELEASING BY / AFFILIATION**  
Angela Murray  
11/17/20  
1117  
1050

**ACCEPTED BY / AFFILIATION**  
Angela Murray  
11/17/20  
1117  
1050

**DATE**  
11/17/20  
11-18-20  
0945

**TIME**  
1445  
1050

**SAMPLE CONDITIONS**

**RELINQUISHED BY / AFFILIATION**  
Eric Schnieder  
11/17/20

**DATE**  
11/17/20

**TIME**  
1050

**TEMP IN °C**

**RECEIVED ON**

**ICE (Y/N)**

**CUSTODY SEALED**

**COOLER (Y/N)**

**SAMPLES INACT**

**SAMPLER NAME AND SIGNATURE**  
Eric Schnieder

**PRINT Name of SAMPLER:** Eric Schnieder

**SIGNATURE of SAMPLER:** [Signature]

**DATE SIGNED (MM/DD/YYYY):** 11/17/20

\*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	Company Name:	
Address:	13515 Barrett Parkway Drive, Ste 260 Ballwin, MO 63021	Copy To:	Ryan Feldmann/Eric Schneider	Address:	
Email To:	jeffrey_ingram@golder.com	Purchase Order No.:	5188 Sioux Energy Center	Pace Quote Reference:	
Phone:	636-724-9191	Project Name:	American Electric Energy Center	Pace Project Manager:	Jamie Church
Requested Due Date/TAT:	Standard	Project Number:	153-140802-0000-0000-00030	Pace Profile #:	9285

Page: 1 of 1

REGULATORY AGENCY	
NPDES /	GROUND WATER
UST	RCRA
	DRINKING WATER
	OTHER

ITEM #	Section D Required Client Information	Valid Matrix Codes MATEX DW WATER WASTE WATER PRODUCT SL SOL/SOLID OIL	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP) (see valid codes to left)	MATRIX CODE (see valid codes to left)	DATE	TIME	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
			COMPOSITE START	COMPOSITE END/GRAB										
1	A-CADUP-3				WT G									
2	L-CATFB-4				WT G									
3	L-CATFB-2				WT G									
4	L-CATFB-3				WT G									
5	L-MS-1				WT G									
6	L-MSD-1				WT G									
7	L-MS-2				WT G									
8	L-MSD-2				WT G									
9	S-Bmw-15				WT G		11/16/20	1450		2 1	1	11/17	1650	
10	S-Bmw-35				WT G		11/17	1220		1 1	1	11/17	1650	
11					WT G									
12					WT G									
ADDITIONAL COMMENTS: Relinquished by Talbert/Golder 11/17/20 10:15 Angela McMano Angela McMano 11/17 1650 a.c.g.f. /:-- Requested Analysis Filtered (Y/N): Chloride/Fluoride/Sulfate N App III and Cat/An Metals N Alkalinity N TDS N Appendix IV Metals ** N Mercury N Radium 226 N Radium 228 N Residual Chlorine (Y/N) Pace Project No./ Lab I.D. 6954569														

SAMPLER NAME AND SIGNATURE		Temp In C	Received on	Custody	Sealed Cooler	Samples Intact
PRINT Name of SAMPLER: <i>Brendan Talbert</i>						
SIGNATURE of SAMPLER: <i>Bh Talbert</i>						
DATE Signed (MM/DD/YYYY): 11/17/2020						

**MEMORANDUM****DATE** January 4, 2021**Project No.** 153140602**TO** Project File  
Golder Associates**CC** Amanda Derhake, Jeff Ingram**FROM** Annie Muehlfarth**EMAIL** [AMuehlfarth@golder.com](mailto:AMuehlfarth@golder.com)**DATA VALIDATION SUMMARY, SIOUX ENERGY CENTER – SEC – SCPA-CA – CORRECTIVE ACTION - DATA PACKAGE 60354369**

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 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).
- When a compound was analyzed outside of hold time, sample results were qualified as estimates (J for detects, UJ for non-detects).

## QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates  
 Project Name: Ameren- Sioux - SCPA-CA  
 Reviewer: A. Muehlfarth

Project Manager: J. Ingram  
 Project Number: 153140602  
 Validation Date: 01/04/2021

Laboratory: Pace Analytical - KS

SDG #: 60354369

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

Matrix:  Air  Soil/Sed.  Water  Waste

Sample Names S-LMW-1S, S-LMW-2S, S-LMW-4S, S-LMW-5S, S-LMW-6S, S-PZ-9D, S-CA-DUP-2, S-CA-FB-2, S-PZ-1S, S-CA-FB-1, S-BMW-3S, S-TP-8D, S-TP-6S, S-TP-6D, S-TP-3D, S-TP-4D, S-TP-5D, S-BMW-1S, S-TP-2D, S-AM-1S, S-AM-1D, S-UG-3, S-CA-MS-1 (S-TP-8D), S-CA-MSD-1 (S-TP-8D), S-CA-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>11/11/2020 - 11/17/2020</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>BTT/EMS</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, S.Cond., Turb, Temp, DO, ORP</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 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

<b>Blanks</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
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"/>	

<b>Laboratory Control Sample (LCS)</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
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"/>	

<b>Duplicates</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Were field duplicates collected (note original and duplicate sample names)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	S-CA-DUP-1 @ S-TP-3D
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	S-CA-DUP-2 @ S-LMW-5S
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: 6% (<10%)

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

<b>Matrix Spike/Matrix Spike Duplicate (MS/MSD)</b>	<b>YES</b>	<b>NO</b>	<b>NA</b>	<b>COMMENTS</b>
a) Was MS accuracy criteria met?	<input 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 type="checkbox"/>	
b) Was MSD accuracy criteria met?	<input 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 type="checkbox"/>	
c) Were MS/MSD precision criteria met?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

**Comments/Notes:**

All coolers out of temp contained only radium samples.

TDS analyzed outside of hold time in sample S-CA-DUP-1.

Sulfate and chloride were diluted in several samples, no qualification necessary.

MB:

2799487: Boron (28.9J), Potassium (325 J), Sodium (399 J). Associated with samples -001 through -010.

## QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

### Comments/Notes:

2799492: Calcium (47.9 J), Molybdenum (13.8 J), Potassium (244 J), Sodium (378 J). Associated with samples -011 through -022.

2799510: Arsenic (0.48 J), Cadmium (0.35 J), Selenium (0.43 J). Associated with samples -001 through -010.

2795986: Chloride (0.43 J). Associated with samples -001 through -010.

2796513: Chloride (0.63 J). Associated with samples -001 through -010.

2056176: Radium-228 (0.843 ± 0.482). Associated with sample -011. Sample result non-detect, no qualification necessary.

### FB:

S-CA-FB-2 @ S-PZ-9D: Boron (45.9 J), Calcium (37.7 J), Sodium (149 J), Radium-228 (1.54 ± 0.605). Sample results >RL, no qualification necessary.

S-CA-FB-1 @ S-PZ-1S: Boron (69.0 J), Molybdenum (2.1 J), Sodium (361 J), Chloride (0.54 J). Sample results >RL, no qualification necessary.

### DUP:

S-CA-DUP-1: Radium-226 detected in sample, non-detect in DUP; Max RPD: Fluoride 18.2% (<20%)

S-CA-DUP-2 : Iron (73.0%) and Radium-228 (39.7%) exceed RPD control limit (<20%).

### MS/MSD:

2799489: MS % recovery high for Boron, Sodium, and Calcium. Associated with sample -004.

2799490/2799491: MS/MSD % recovery low for Boron and Calcium. MS/MSD performed on unrelated sample, no qualification necessary.

2799494/2799495: MS % recovery low for Calcium. MS/MSD performed on unrelated sample, no qualification necessary.

2799499/2799500: MS % recovery high for Calcium. MS/MSD performed on unrelated sample, no qualification necessary.

2799501: MS % recovery low for Calcium. MS/MSD performed on unrelated sample, no qualification necessary.

2795130/2795131: MS/MSD % recovery high for Chloride. MS/MSD performed on unrelated sample, no qualification necessary.

2799459/2799460: MS % recovery low for Fluoride, MS/MSD % recovery high for Sulfate. Associated with sample -012.

## QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

**Data Qualification:**

Sample Name	Constituent(s)	Result	Qualifier	Reason
S-CA-DUP-1	TDS	487	J	Analyzed outside of hold time
S-CA-FB-2	Boron	100	U	Detected in MB, sample result <PQL
"	Sodium	500	U	"
S-CA-FB-1	Boron	100	U	"
"	Sodium	500	U	"
S-BMW-3S	Molybdenum	20.0	U	"
"	Potassium	500	U	"
S-TP-6S	Molybdenum	20.0	U	"
S-BMW-1S	Molybdenum	20.0	U	"
"	Potassium	500	U	"
S-UG-3	Molybdenum	20.0	U	"
S-LMW-1S	Arsenic	2.0	J	Detected in MB, sample result <10x blank
S-LMW-2S	Arsenic	1.0	U	Detected in MB, sample result <PQL
"	Cadmium	0.50	U	"
S-LMW-4S	Arsenic	1.0	U	"
"	Cadmium	0.50	U	"
"	Selenium	1.0	U	"
S-LMW-5S	Arsenic	1.0	U	"
"	Cadmium	0.66	J	Detected in MB, sample result <10x blank
S-LMW-6S	Arsenic	1.0	U	Detected in MB, sample result <PQL
"	Cadmium	1.4	J	Detected in MB, sample result <10x blank
S-PZ-9D	Arsenic	1.0	U	Detected in MB, sample result <PQL
S-CA-DUP-2	Arsenic	1.0	U	"
"	Cadmium	0.55	J	Detected in MB, sample result <10x blank
S-PZ-1S	Arsenic	1.0	U	Detected in MB, sample result <PQL
"	Cadmium	0.50	U	"
S-LMW-4S	Chloride	2.4	J	Detected in MB, sample result <10x blank
S-LMW-6S	Chloride	4.0	J	"
S-CA-FB-1	Chloride	1.0	U	Detected in MB, sample result <PQL
S-CA-DUP-1	Radium-226	0.462 ± 0.536	UJ	Detected in sample, ND in DUP
S-TP-3D	Radium-226	0.715 ± 0.531	J	"
S-LMW-5S	Iron	260	J	DUP RPD exceeds limit
"	Radium-228	1.23 ± 0.515	J	"
S-CA-DUP-2	Iron	121	J	"





**APPENDIX B**

**November 2019 Assessment  
Monitoring Statistical Evaluation**

## TECHNICAL MEMORANDUM

**DATE** March 2, 2020

**Project No.** 153-140601

**TO** Bill Kutosky  
Ameren Missouri

**CC** Susan Knowles, Craig Giesmann, Paul Pike, Charlie Henderson

**FROM** Jeffrey Ingram, Sean Paulsen, Mark Haddock

**EMAIL** [JIngram@Golder.com](mailto:JIngram@Golder.com)

### **ASSESSMENT MONITORING STATISTICAL EVALUATION FOR THE SCPA SURFACE IMPOUNDMENT, SIOUX ENERGY CENTER, ST CHARLES COUNTY, MISSOURI**

This Technical Memorandum provides the results of the Assessment Monitoring Statistical Evaluation for the November 2019 sampling event at the SCPA Surface Impoundment of the Sioux Energy Center located in St. Charles 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 Appendix IV parameters (**Appendix A** and **Appendix B**).

During the August 2019 sampling event, monitoring wells AM-1D (UMW-7D) and AM-1S (UMW-7S) were added to the Detection and Assessment monitoring well networks to satisfy the requirements of §257.95(g)(1) of the CCR Rule, which require at least one (1) additional monitoring well be installed at the downgradient facility boundary. The November 2019 sampling event is the first event during which the Appendix IV results from monitoring wells AM-1D (UMW-7D) and AM-1S (UMW-7S) were statistically evaluated for SSLs. As outlined in the Statistical Analysis Plan (SAP) for this site, which is a portion of the Groundwater Monitoring Plan (GMP), a minimum of four (4) samples are required to complete an SSL evaluation.

The Appendix IV constituents were evaluated for SSLs using the methods and procedures outlined in the SAP. The following outliers were removed prior to the calculation of confidence limits:

- Arsenic
  - UMW-6D at non-detect on 3/8/17: result is statistically lower than other values at the same well. The low result has not been confirmed during subsequent sampling events.
- Cadmium
  - UMW-1D at 0.38 J micrograms per liter (µg/L) on 4/5/18: result is statistically higher than other values at the same well. The high result has not been confirmed during subsequent sampling events.
- Fluoride

- UMW-3D at 0.81 milligrams per liter (mg/L) on 3/16/16 and 0.32 mg/L on 8/1/2019: results were statistically lower than other values at the same well. The low results have not been confirmed during subsequent sampling events.
- Fluoride
  - UMW-4D at 0.42 mg/L on 4/6/2018 and 0.49 mg/L on 11/13/2018: results were statistically lower than other values at the same well. The low results have not been confirmed during subsequent sampling events.

One new SSL was identified in the November 2019 sampling event for Molybdenum at AM-1D (UMW-7D). The SSLs reported for the November 2019 monitoring event are as follows:

- Molybdenum at UMW-2D, UMW-3D, UMW-4D, UMW-5D, and AM-1D (UMW-7D)

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, R.G.  
Project Geologist



Sean Paulsen, P.G.  
Associate, Senior Consultant

JSI/SCP/MNH

Enclosures:

Table 1 – SCPA Groundwater Protection Standards

Appendix A – Sanitas Confidence Interval Statistical Output

Appendix B – Sanitas Trending Confidence Bands Statistical Output

**Table 1 - SCPA Groundwater Protection Standards  
SCPA Surface Impoundment  
Sioux Energy Center**

Parameter	Units	MCL or Health Based GWPS	Site GWPS	Value to Return to Detection Monitoring <sup>7</sup>
Antimony	µg/L	6	6	DQR
Arsenic	µg/L	10	10	1.054
Barium	µg/L	2000	2000	699
Beryllium	µg/L	4	4	DQR
Cadmium	µg/L	5	5	DQR
Chromium	µg/L	100	100	DQR
Cobalt	µg/L	6	6	DQR
Fluoride	mg/L	4	4	0.372
Lead	µg/L	15	15	DQR
Lithium	µg/L	40	40	28.48
Mercury	µg/L	2	2	DQR
Molybdenum	µg/L	100	100	DQR
Radium 226 + 228	pCi/L	5	5	2.537
Selenium	µg/L	50	50	DQR
Thallium	µg/L	2	2	DQR

Notes:

1. µg/L - micrograms per liter
2. mg/L - milligrams per liter
3. pCi/L - picocuries per liter

4. MCL - Maximum Contaminant Level. MCLs from United States Environmental Protection Agency (USEPA) 2012 Edition of the Drinking Water Standards and Health Advisories. Spring 2012. <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 August 2019 from monitoring wells BMW-1D and BMW-3D.

Prepared by: JSI

Checked by: LMS

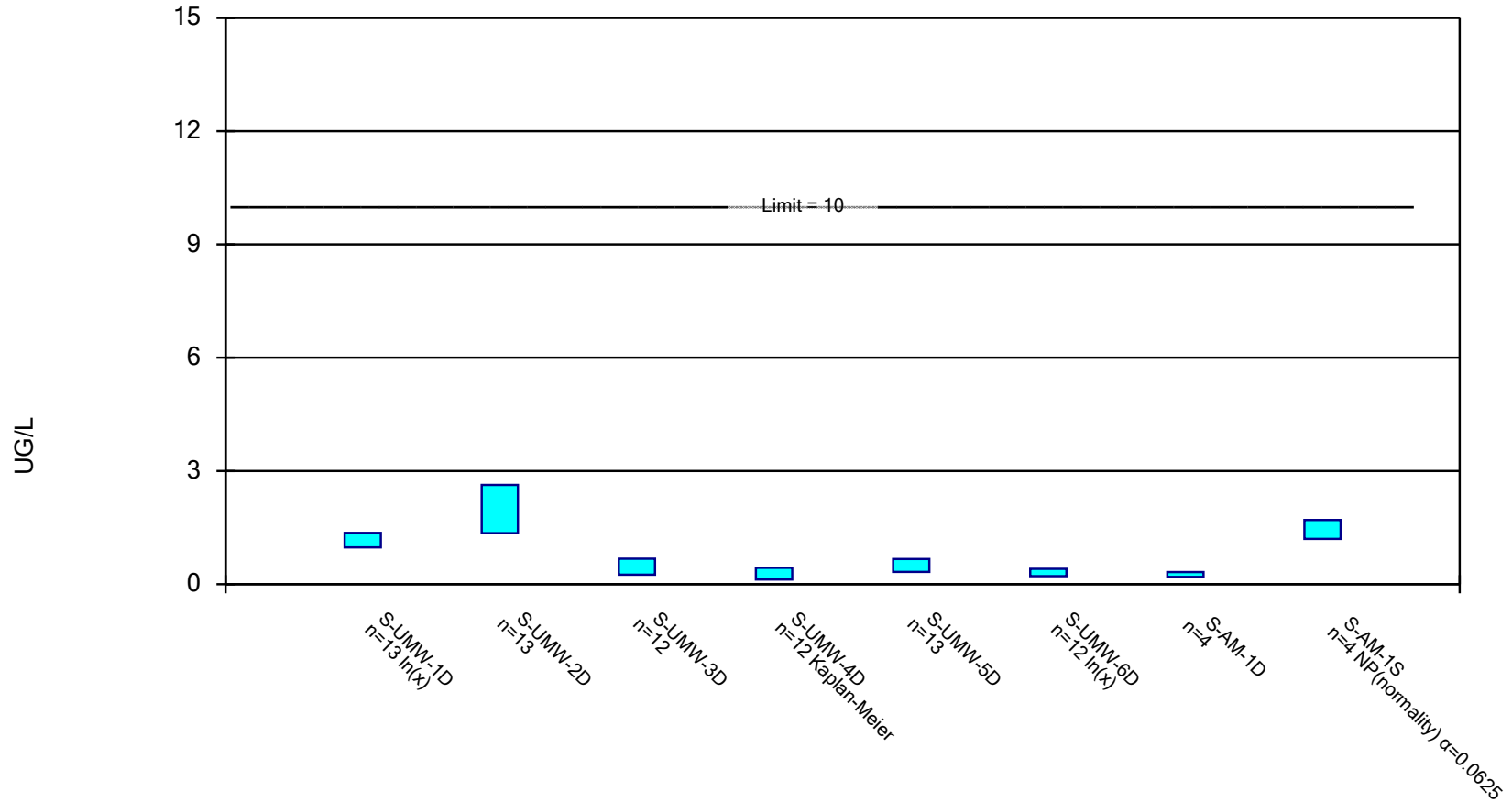
Reviewed by: SCP

**APPENDIX A**

**Sanitas Confidence Interval  
Statistical Output**

## Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

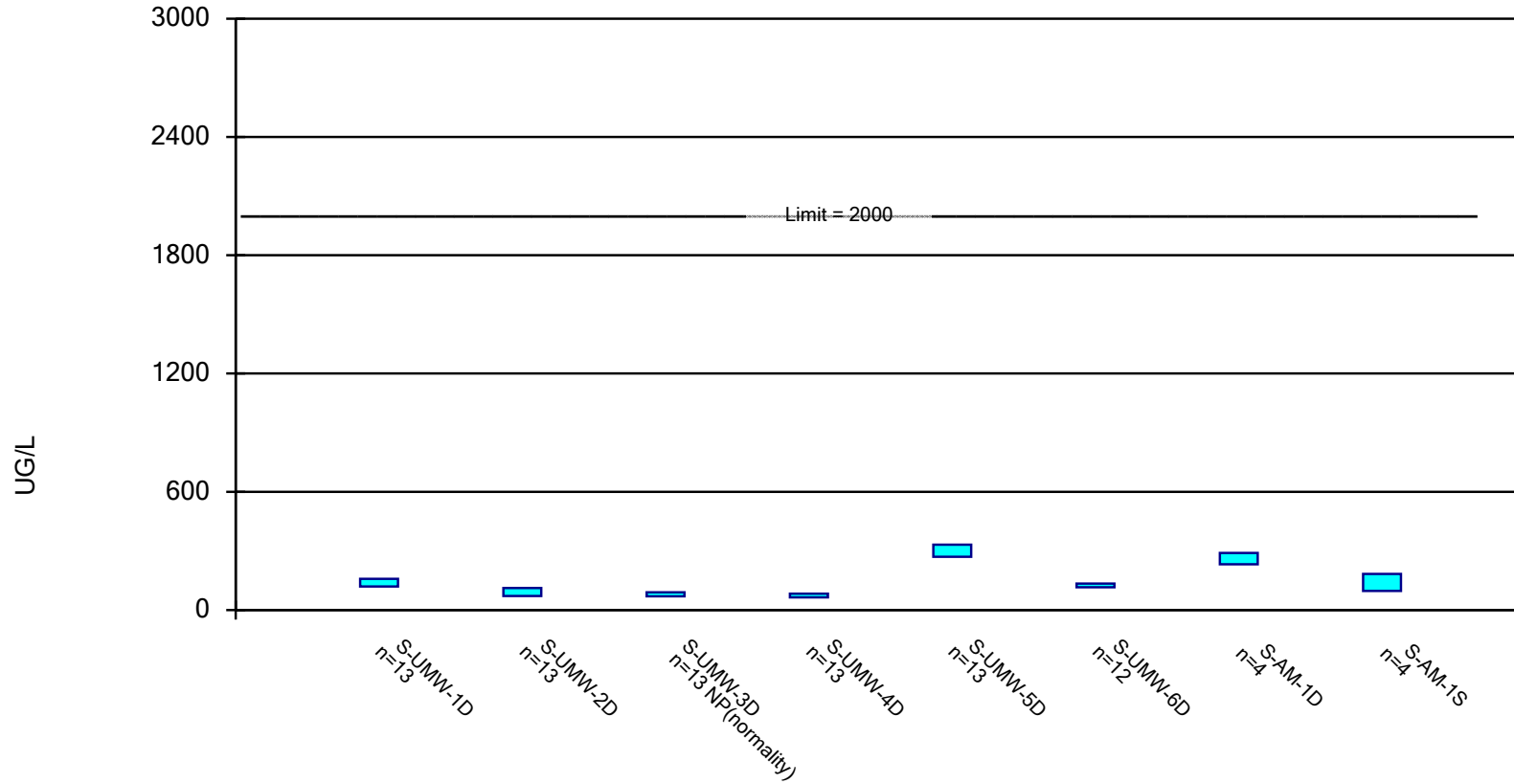


Constituent: ARSENIC, TOTAL Analysis Run 2/18/2020 2:02 PM

Sioux E.C. Client: Ameren Data: SEC 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.

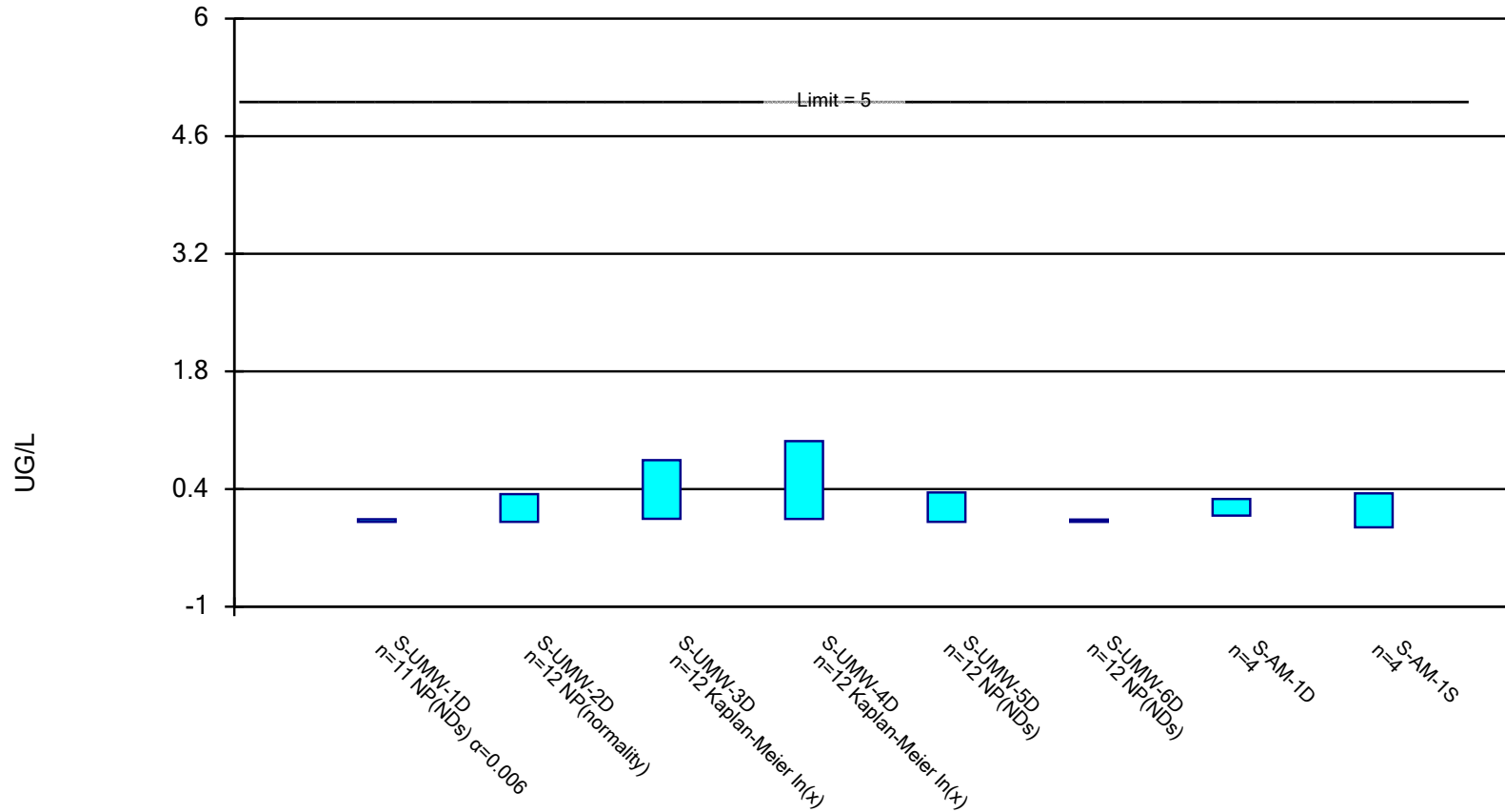


Constituent: BARIUM, TOTAL Analysis Run 2/18/2020 2:02 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_

## Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



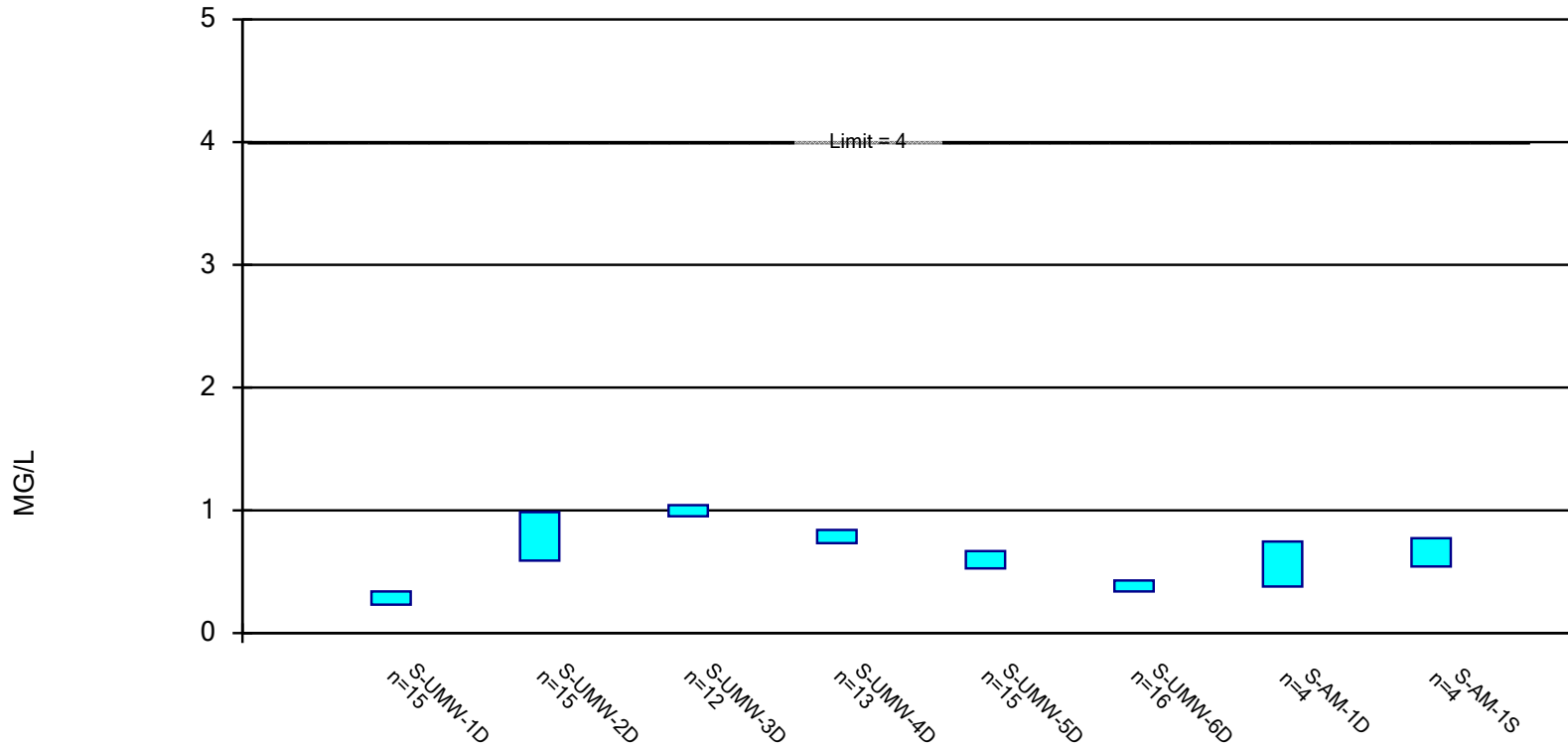
Constituent: CADMIUM, TOTAL Analysis Run 2/18/2020 2:02 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_



### Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

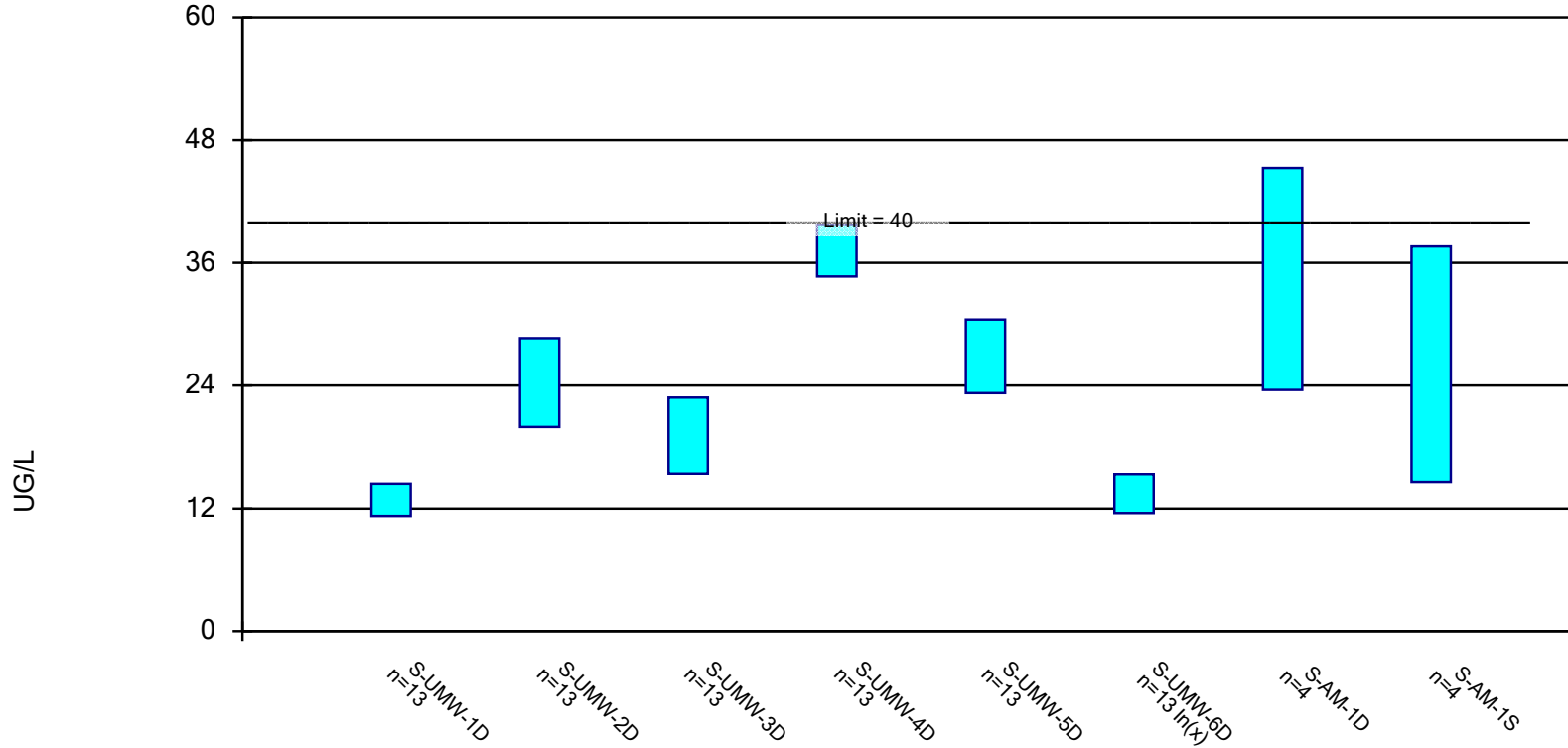


Constituent: FLUORIDE, TOTAL Analysis Run 2/18/2020 2:02 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_

## Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

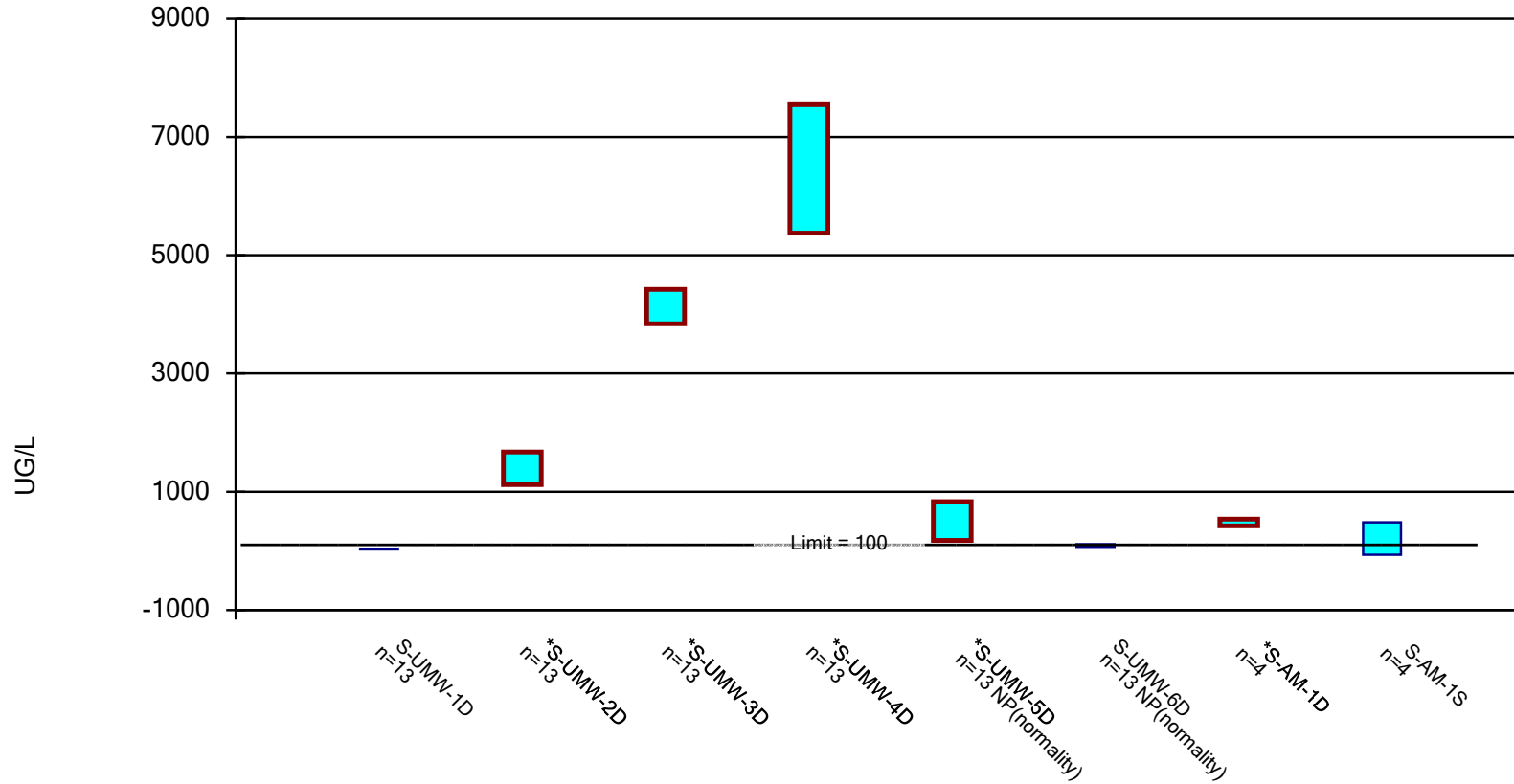


Constituent: LITHIUM, TOTAL Analysis Run 2/18/2020 2:02 PM

Sioux E.C. Client: Ameren Data: SEC 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 2/18/2020 2:02 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_

# Confidence Interval

Sioux E.C. Client: Ameren Data: SEC DATA\_ Printed 2/18/2020, 2:03 PM

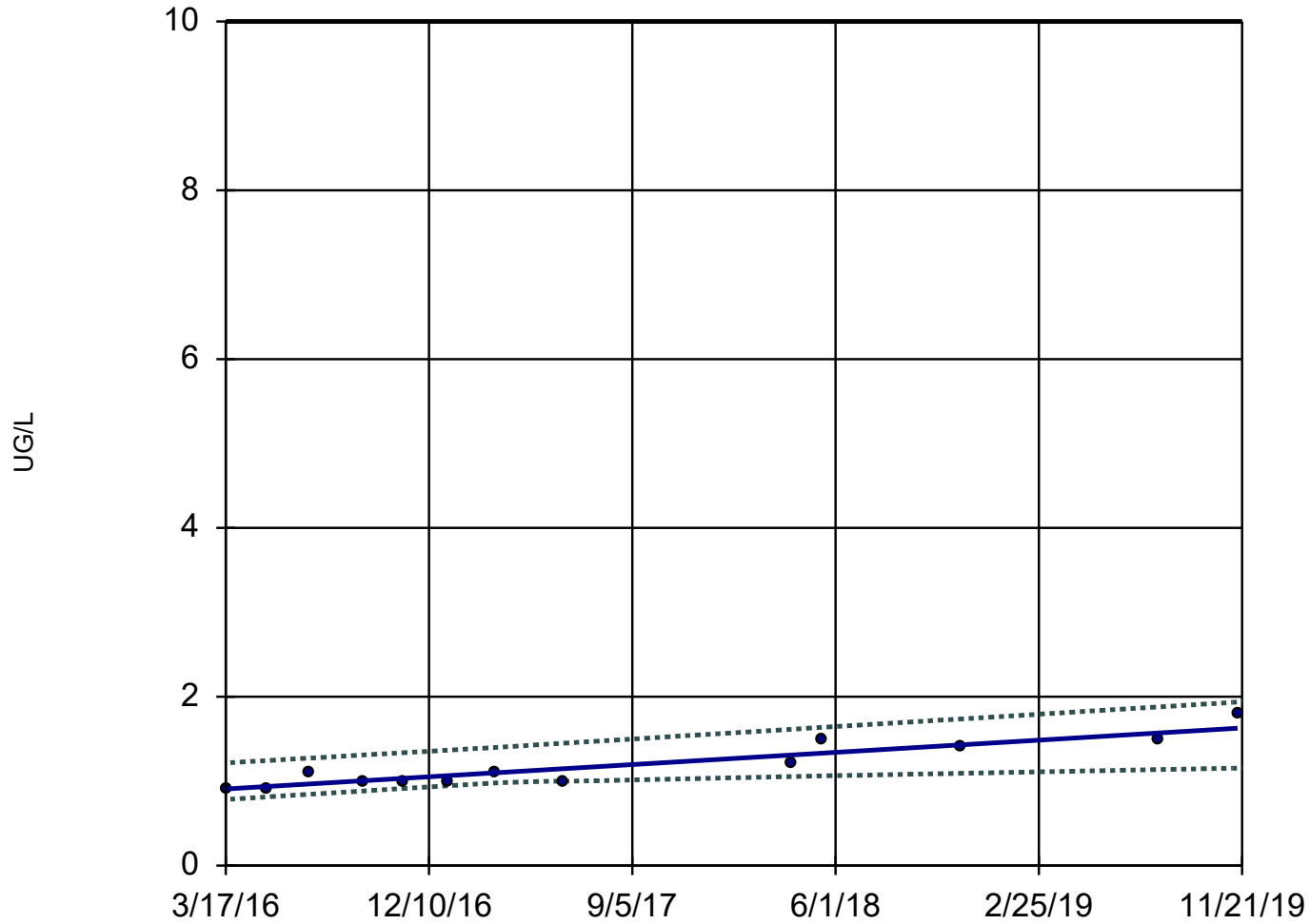
<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
ARSENIC, TOTAL (UG/L)	S-UMW-1D	1.361	0.975	10	No	13	0	ln(x)	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-UMW-2D	2.63	1.35	10	No	13	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-UMW-3D	0.6753	0.2507	10	No	12	8.333	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-UMW-4D	0.4357	0.1237	10	No	12	25	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-UMW-5D	0.6654	0.3247	10	No	13	7.692	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-UMW-6D	0.4069	0.2146	10	No	12	0	ln(x)	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-AM-1D	0.32	0.195	10	No	4	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-AM-1S	1.7	1.2	10	No	4	0	No	0.0625	NP (normality)
BARIUM, TOTAL (UG/L)	S-UMW-1D	158.6	119.1	2000	No	13	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-UMW-2D	111.3	71.54	2000	No	13	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-UMW-3D	90	69.5	2000	No	13	0	No	0.01	NP (normality)
BARIUM, TOTAL (UG/L)	S-UMW-4D	82.84	64.2	2000	No	13	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-UMW-5D	331.7	269.9	2000	No	13	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-UMW-6D	133.9	116	2000	No	12	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-AM-1D	289.4	232.1	2000	No	4	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-AM-1S	182.9	96.62	2000	No	4	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-UMW-1D	0.04	0.009	5	No	11	81.82	No	0.006	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-UMW-2D	0.34	0.009	5	No	12	50	No	0.01	NP (normality)
CADMIUM, TOTAL (UG/L)	S-UMW-3D	0.7431	0.04496	5	No	12	33.33	ln(x)	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-UMW-4D	0.9707	0.04341	5	No	12	33.33	ln(x)	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-UMW-5D	0.36	0.009	5	No	12	58.33	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-UMW-6D	0.037	0.009	5	No	12	66.67	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-AM-1D	0.2812	0.08375	5	No	4	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-AM-1S	0.3492	-0.05668	5	No	4	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-UMW-1D	0.3394	0.2313	4	No	15	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-UMW-2D	0.9856	0.5904	4	No	15	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-UMW-3D	1.042	0.9515	4	No	12	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-UMW-4D	0.8396	0.7327	4	No	13	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-UMW-5D	0.6679	0.5267	4	No	15	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-UMW-6D	0.4287	0.3388	4	No	16	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-AM-1D	0.7454	0.3796	4	No	4	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-AM-1S	0.7723	0.5427	4	No	4	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UMW-1D	14.41	11.28	40	No	13	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UMW-2D	28.64	19.94	40	No	13	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UMW-3D	22.83	15.39	40	No	13	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UMW-4D	39.71	34.66	40	No	13	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UMW-5D	30.45	23.26	40	No	13	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UMW-6D	15.35	11.56	40	No	13	0	ln(x)	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-AM-1D	45.27	23.58	40	No	4	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-AM-1S	37.61	14.59	40	No	4	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	S-UMW-1D	36.19	25.29	100	No	13	0	No	0.01	Param.
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>S-UMW-2D</b>	<b>1672</b>	<b>1121</b>	<b>100</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>S-UMW-3D</b>	<b>4422</b>	<b>3841</b>	<b>100</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>S-UMW-4D</b>	<b>7547</b>	<b>5373</b>	<b>100</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>S-UMW-5D</b>	<b>832</b>	<b>179</b>	<b>100</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>NP (normality)</b>
MOLYBDENUM, TOTAL (UG/L)	S-UMW-6D	114	67.8	100	No	13	0	No	0.01	NP (normality)
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>S-AM-1D</b>	<b>537.3</b>	<b>423.2</b>	<b>100</b>	<b>Yes</b>	<b>4</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
MOLYBDENUM, TOTAL (UG/L)	S-AM-1S	482.6	-64.56	100	No	4	0	No	0.01	Param.

**APPENDIX B**

Sanitas Trending Confidence Band  
Statistical Output

### Sen's Slope and 95% Confidence Band

S-UMW-1D



n = 13

Slope = 0.1962  
units per year.

Mann-Kendall  
statistic = 56  
critical = 39

Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

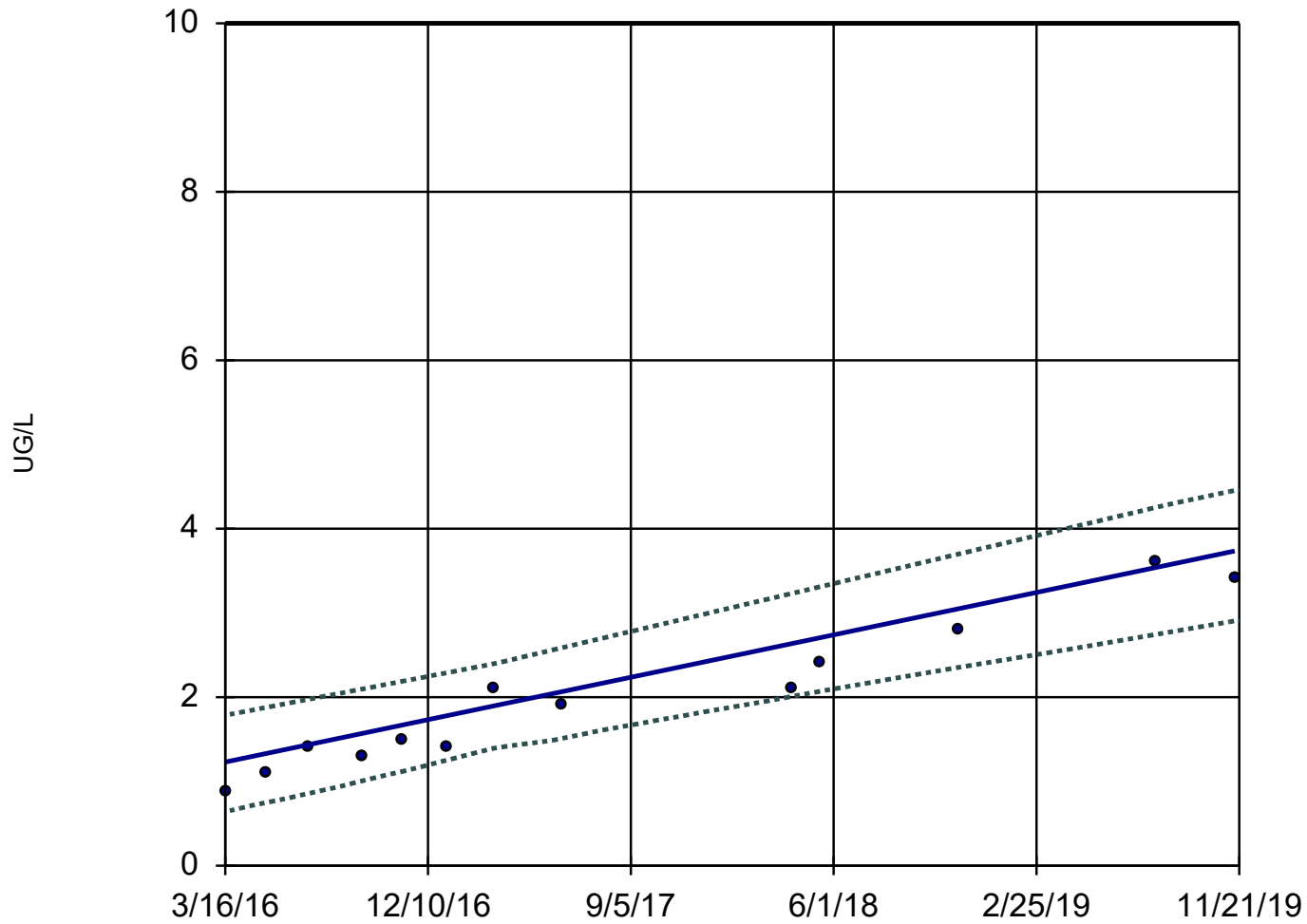
GWPS = 10.

Constituent: ARSENIC, TOTAL Analysis Run 2/18/2020 3:16 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_

## Sen's Slope and 95% Confidence Band

S-UMW-2D



n = 13

Slope = 0.6827  
units per year.

Mann-Kendall  
statistic = 68  
critical = 39

Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

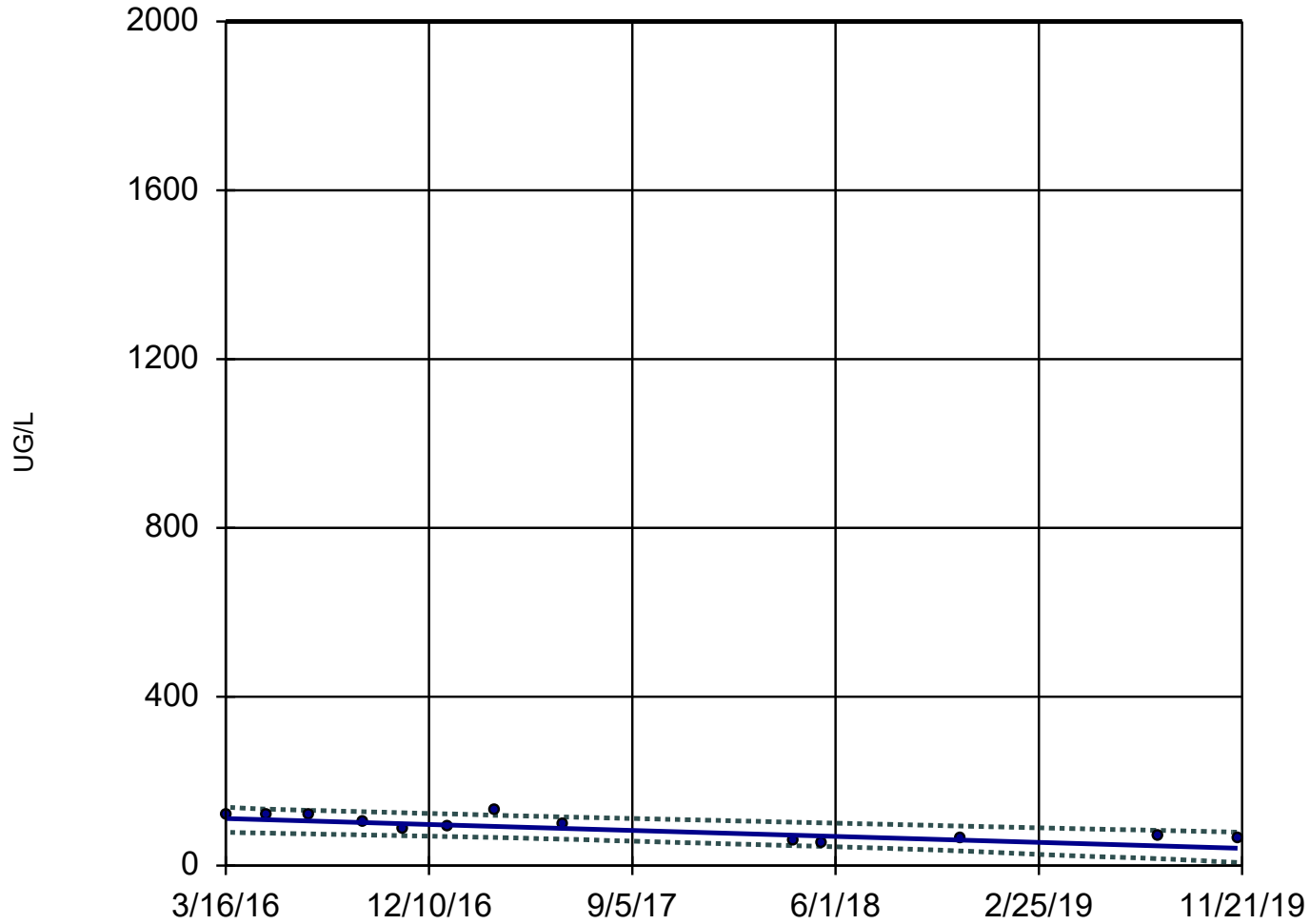
GWPS = 10.

Constituent: ARSENIC, TOTAL Analysis Run 2/18/2020 3:16 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_

### Sen's Slope and 95% Confidence Band

S-UMW-2D



n = 13

Slope = -19.14  
units per year.

Mann-Kendall  
statistic = -44  
critical = -39

Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

GWPS = 2000.

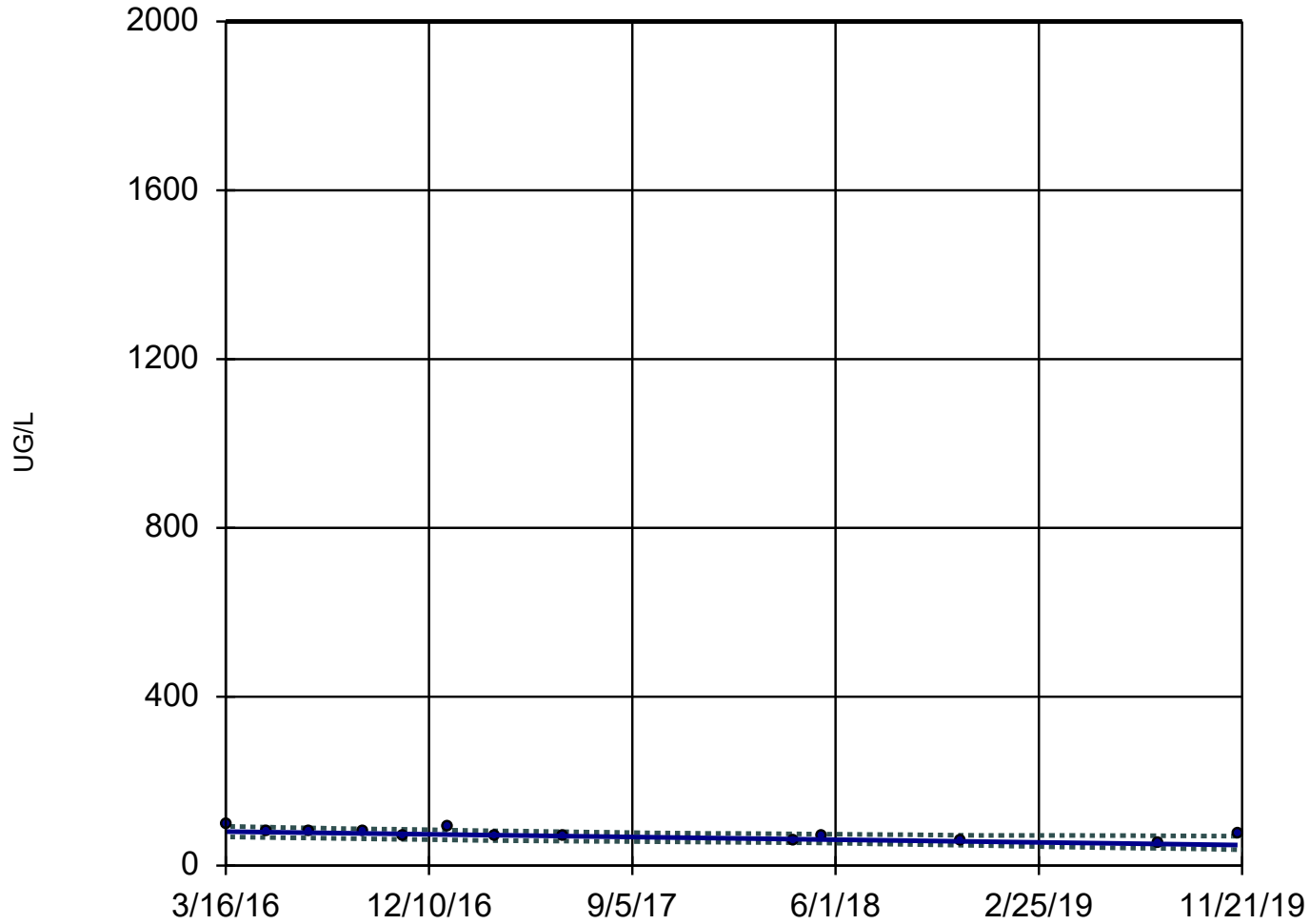
Constituent: BARIUM, TOTAL Analysis Run 2/18/2020 3:17 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_



## Sen's Slope and 95% Confidence Band

S-UMW-4D



n = 13

Slope = -8.616  
units per year.

Mann-Kendall  
statistic = -46  
critical = -39

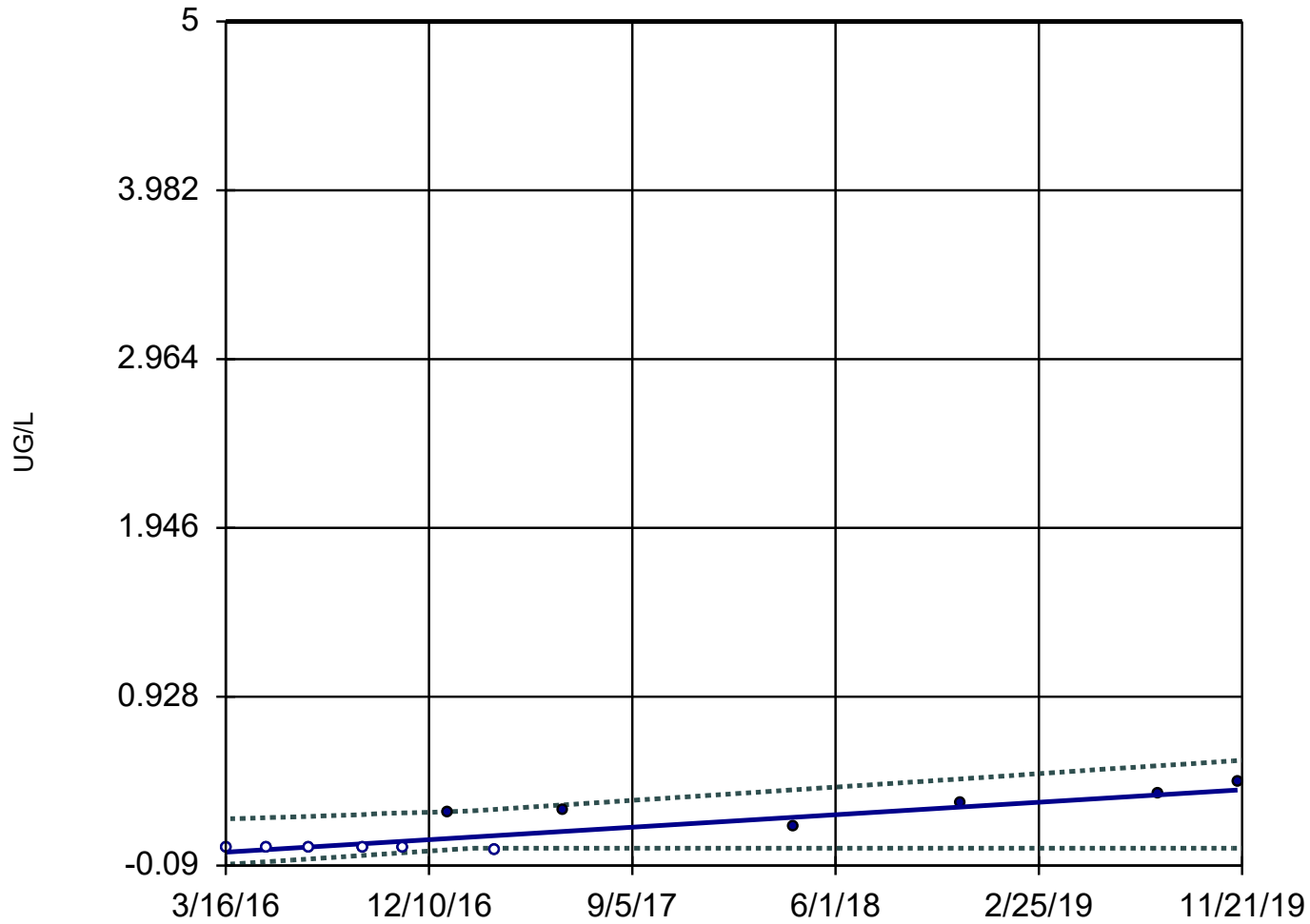
Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

GWPS = 2000.

Constituent: BARIUM, TOTAL Analysis Run 2/18/2020 3:17 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_

### Sen's Slope and 95% Confidence Band S-UMW-2D

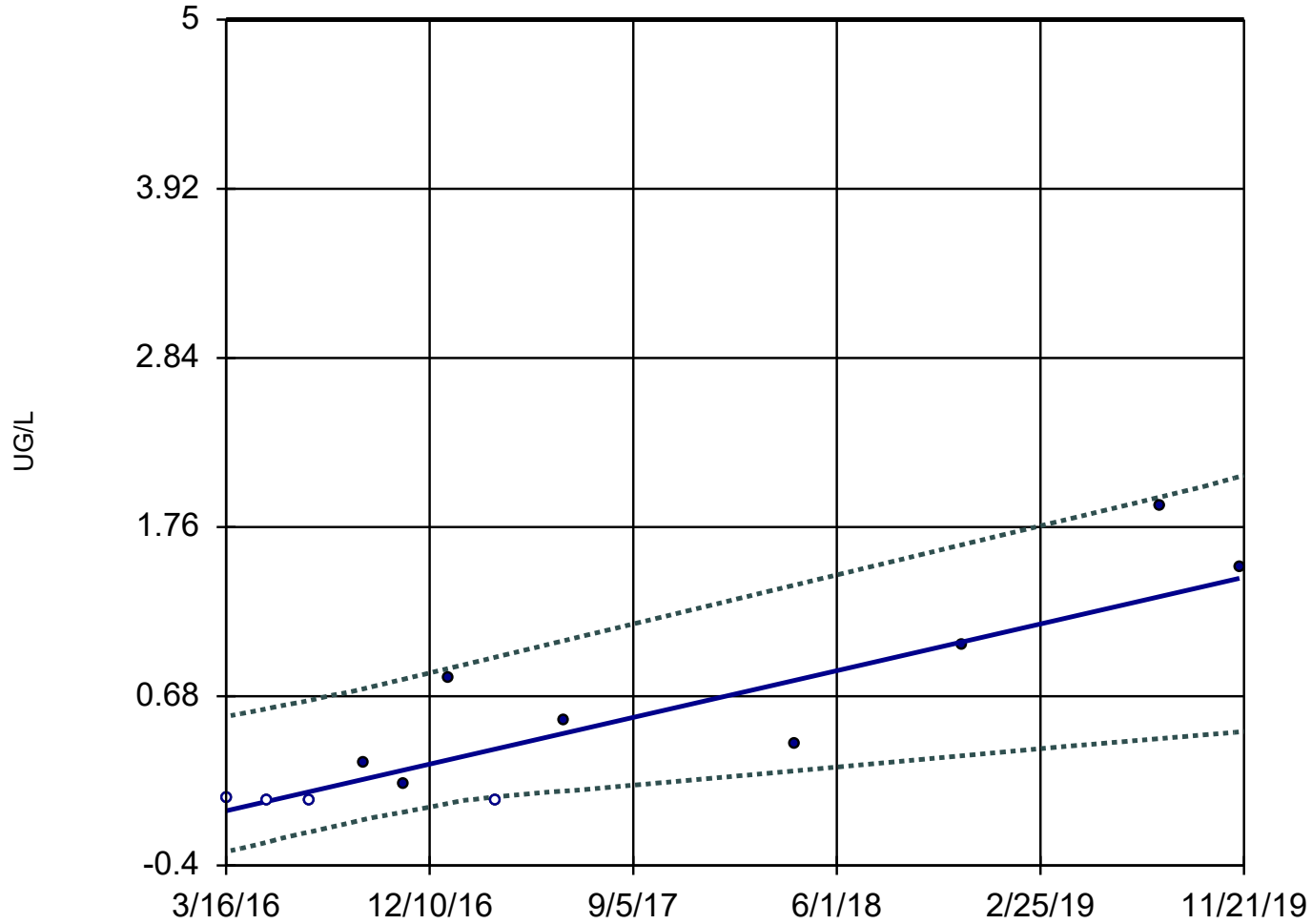


n = 12  
Slope = 0.1022  
units per year.  
Mann-Kendall  
statistic = 40  
critical = 35  
Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).  
GWPS = 5.

Constituent: CADMIUM, TOTAL Analysis Run 2/18/2020 3:17 PM  
Sioux E.C. Client: Ameren Data: SEC DATA\_

### Sen's Slope and 95% Confidence Band

S-UMW-3D



n = 12

Slope = 0.4046  
units per year.

Mann-Kendall  
statistic = 39  
critical = 35

Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

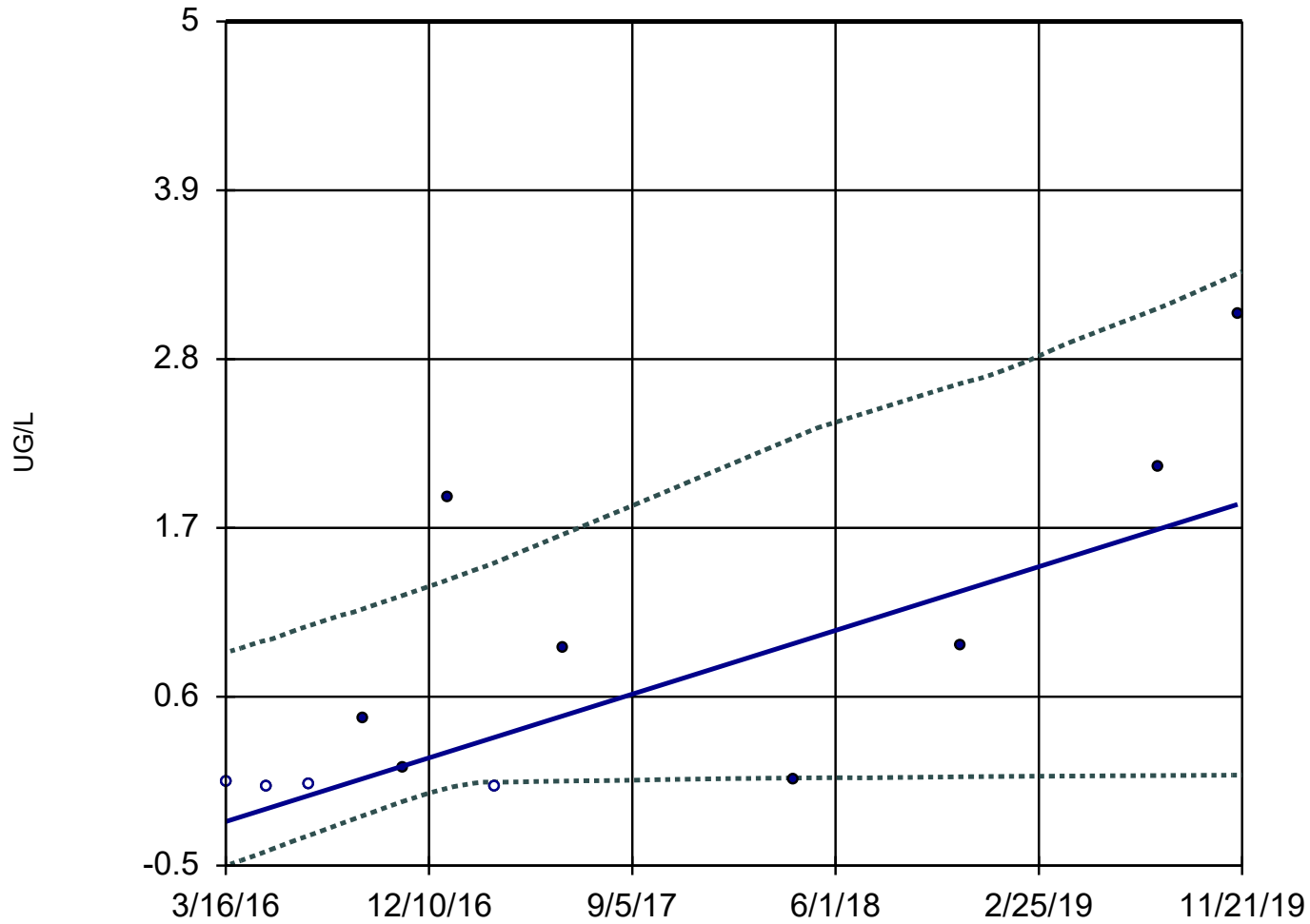
GWPS = 5.

Constituent: CADMIUM, TOTAL Analysis Run 2/18/2020 3:17 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_

## Sen's Slope and 95% Confidence Band

S-UMW-4D



n = 12

Slope = 0.5632  
units per year.

Mann-Kendall  
statistic = 36  
critical = 35

Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

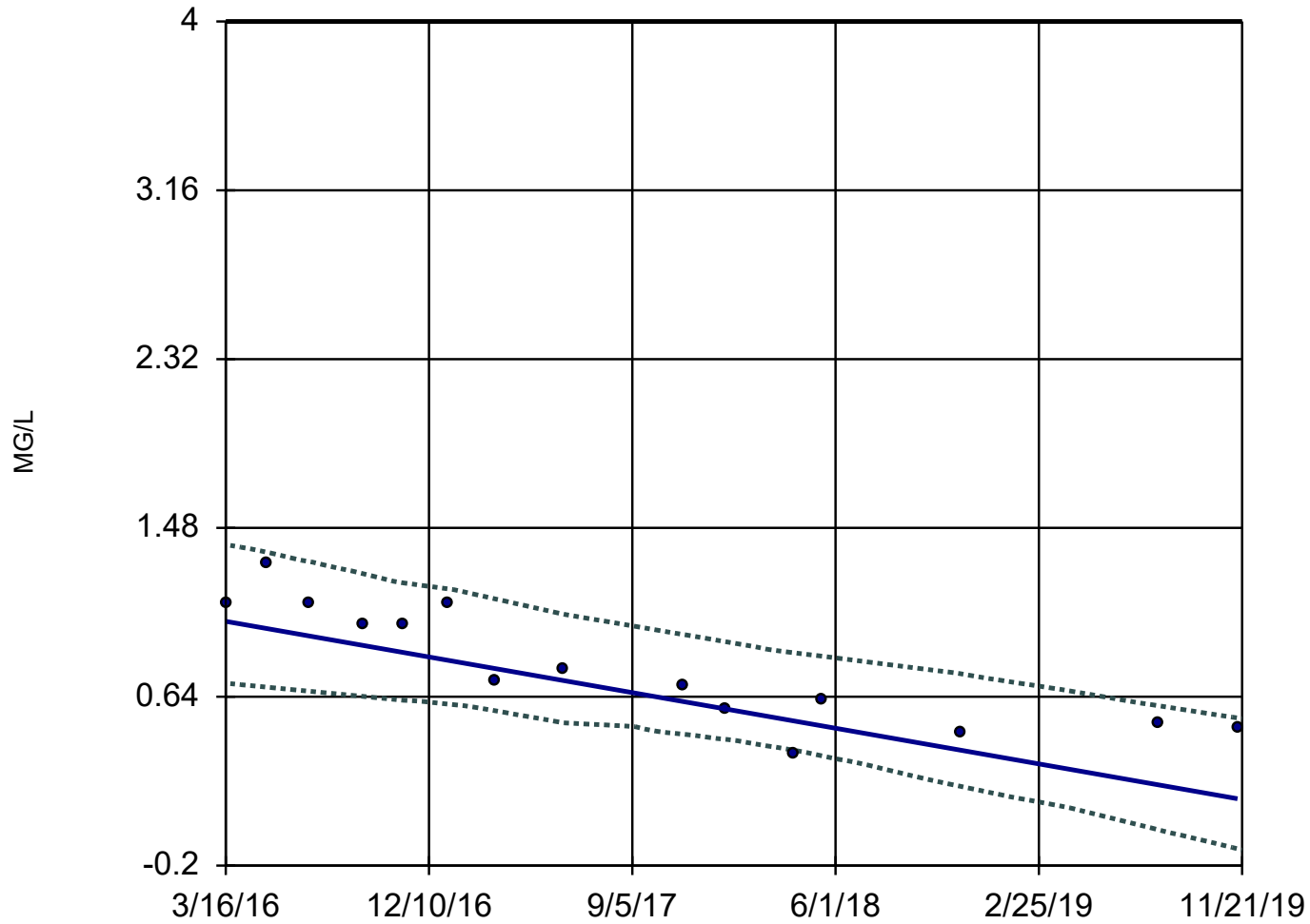
GWPS = 5.

Constituent: CADMIUM, TOTAL Analysis Run 2/18/2020 3:17 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_

## Sen's Slope and 95% Confidence Band

S-UMW-2D



n = 15

Slope = -0.2405  
units per year.

Mann-Kendall  
statistic = -79  
critical = -48

Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

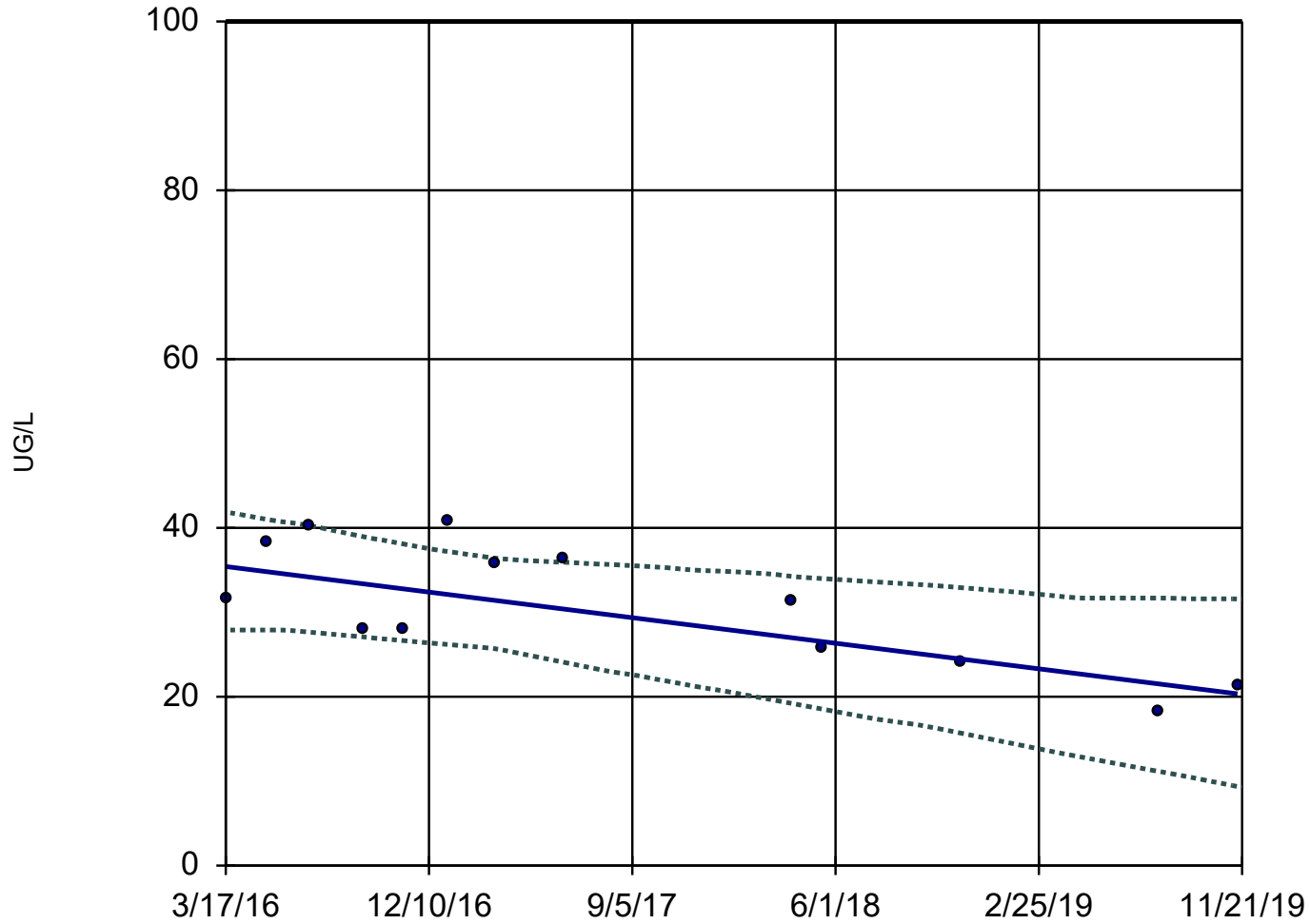
GWPS = 4.

Constituent: FLUORIDE, TOTAL Analysis Run 2/18/2020 3:17 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_

### Sen's Slope and 95% Confidence Band

S-UMW-1D



n = 13

Slope = -4.114  
units per year.

Mann-Kendall  
statistic = -41  
critical = -39

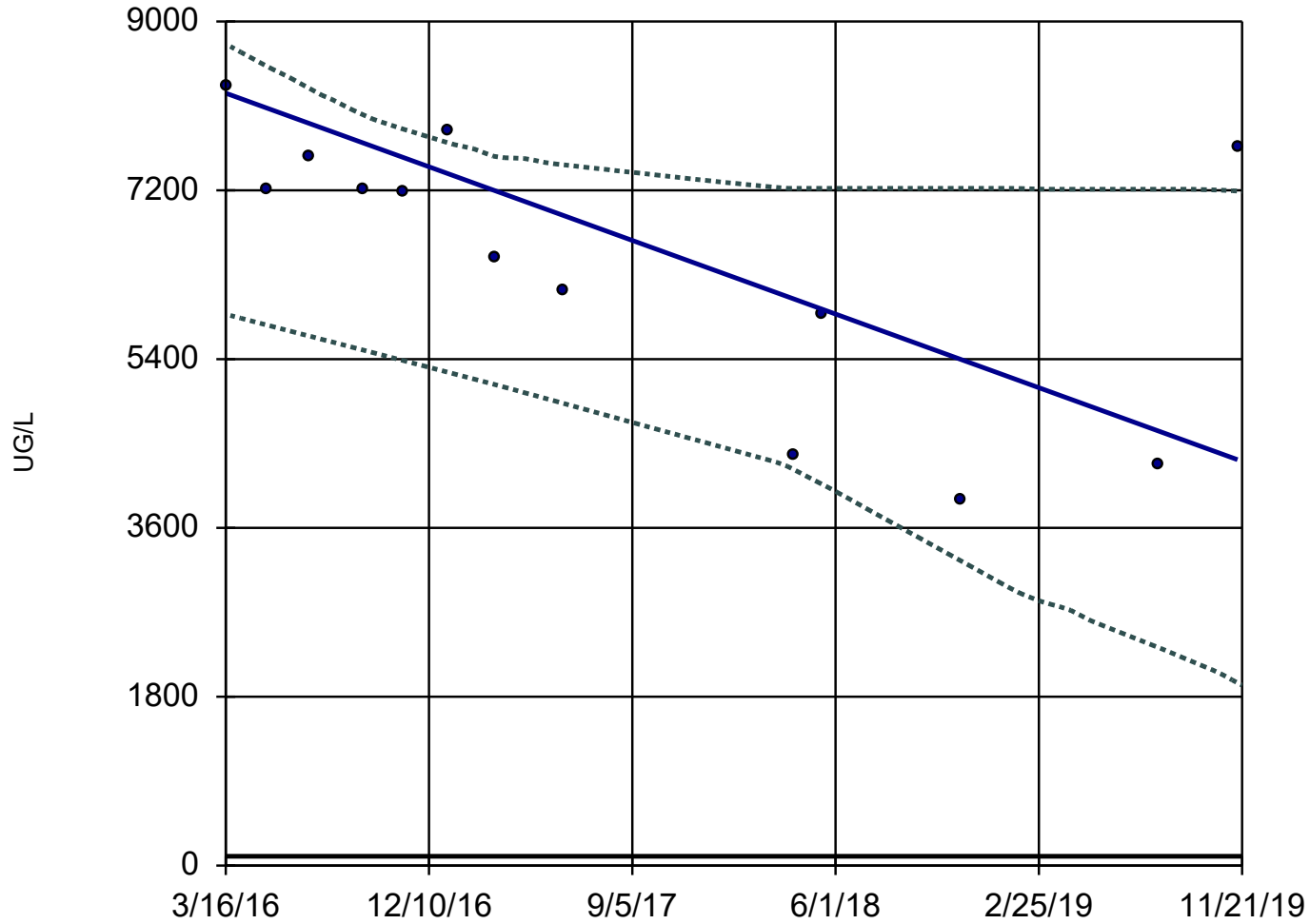
Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

GWPS = 100.

Constituent: MOLYBDENUM, TOTAL Analysis Run 2/18/2020 3:17 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_

### Sen's Slope and 95% Confidence Band S-UMW-4D



n = 13  
Slope = -1065 units per year.  
Mann-Kendall statistic = -44  
critical = -39  
Decreasing trend significant at 98% confidence level ( $\alpha = 0.01$  per tail).  
GWPS = 100.

Constituent: MOLYBDENUM, TOTAL Analysis Run 2/18/2020 3:17 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_

# Trend Test

Sioux E.C. Client: Ameren Data: SEC DATA\_ Printed 2/18/2020, 3:18 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>
<b>ARSENIC, TOTAL (UG/L)</b>	<b>S-UMW-1D</b>	<b>0.1962</b>	<b>56</b>	<b>39</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>ARSENIC, TOTAL (UG/L)</b>	<b>S-UMW-2D</b>	<b>0.6827</b>	<b>68</b>	<b>39</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
ARSENIC, TOTAL (UG/L)	S-UMW-3D	-0.08532	-9	-35	No	12	8.333	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-UMW-4D	-0.06815	-7	-35	No	12	25	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-UMW-5D	-0.09982	-26	-39	No	13	7.692	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-UMW-6D	0.02282	10	35	No	12	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-AM-1D	-0.0573	-4	-8	No	4	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-AM-1S	-0.05	-1	-8	No	4	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-UMW-1D	-9.853	-26	-39	No	13	0	n/a	n/a	0.02	NP
<b>BARIUM, TOTAL (UG/L)</b>	<b>S-UMW-2D</b>	<b>-19.14</b>	<b>-44</b>	<b>-39</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
BARIUM, TOTAL (UG/L)	S-UMW-3D	-0.5896	-10	-39	No	13	0	n/a	n/a	0.02	NP
<b>BARIUM, TOTAL (UG/L)</b>	<b>S-UMW-4D</b>	<b>-8.616</b>	<b>-46</b>	<b>-39</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
BARIUM, TOTAL (UG/L)	S-UMW-5D	-20.54	-19	-39	No	13	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-UMW-6D	0.444	1	35	No	12	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-AM-1D	4.63	0	8	No	4	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-AM-1S	35.46	2	8	No	4	0	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-UMW-1D	0	13	31	No	11	81.82	n/a	n/a	0.02	NP
<b>CADMIUM, TOTAL (UG/L)</b>	<b>S-UMW-2D</b>	<b>0.1022</b>	<b>40</b>	<b>35</b>	<b>Yes</b>	<b>12</b>	<b>50</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>CADMIUM, TOTAL (UG/L)</b>	<b>S-UMW-3D</b>	<b>0.4046</b>	<b>39</b>	<b>35</b>	<b>Yes</b>	<b>12</b>	<b>33.33</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>CADMIUM, TOTAL (UG/L)</b>	<b>S-UMW-4D</b>	<b>0.5632</b>	<b>36</b>	<b>35</b>	<b>Yes</b>	<b>12</b>	<b>33.33</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
CADMIUM, TOTAL (UG/L)	S-UMW-5D	0.0182	27	35	No	12	58.33	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-UMW-6D	0.002789	23	35	No	12	66.67	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-AM-1D	0.08768	4	8	No	4	0	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-AM-1S	0.1679	4	8	No	4	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-UMW-1D	0	-3	-48	No	15	0	n/a	n/a	0.02	NP
<b>FLUORIDE, TOTAL (MG/L)</b>	<b>S-UMW-2D</b>	<b>-0.2405</b>	<b>-79</b>	<b>-48</b>	<b>Yes</b>	<b>15</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
FLUORIDE, TOTAL (MG/L)	S-UMW-3D	-0.01481	-19	-39	No	13	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-UMW-4D	-0.02549	-21	-39	No	13	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-UMW-5D	-0.00...	-1	-48	No	15	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-UMW-6D	0.02333	36	53	No	16	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-AM-1D	0.1575	2	8	No	4	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-AM-1S	0.015	1	8	No	4	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-1D	-1.008	-21	-39	No	13	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-2D	-2.924	-29	-39	No	13	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-3D	-1.133	-11	-39	No	13	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-4D	-1.061	-21	-39	No	13	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-5D	-2.949	-35	-39	No	13	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-6D	0.281	7	39	No	13	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-AM-1D	-13.79	-2	-8	No	4	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-AM-1S	-1.927	0	8	No	4	0	n/a	n/a	0.02	NP
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>S-UMW-1D</b>	<b>-4.114</b>	<b>-41</b>	<b>-39</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
MOLYBDENUM, TOTAL (UG/L)	S-UMW-2D	-38.55	-3	-39	No	13	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-UMW-3D	-112.5	-19	-39	No	13	0	n/a	n/a	0.02	NP
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>S-UMW-4D</b>	<b>-1065</b>	<b>-44</b>	<b>-39</b>	<b>Yes</b>	<b>13</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
MOLYBDENUM, TOTAL (UG/L)	S-UMW-5D	-16.73	-10	-39	No	13	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-UMW-6D	-5.445	-20	-39	No	13	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-AM-1D	55.58	6	8	No	4	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-AM-1S	320	6	8	No	4	0	n/a	n/a	0.02	NP



**APPENDIX C**

**April-May 2020 Assessment  
Monitoring Statistical Evaluation**

## TECHNICAL MEMORANDUM

**DATE** August 20, 2020

**Project No.** 153-140602

**TO** Bill Kutosky  
Ameren Missouri

**CC** Susan Knowles, Craig Giesmann, Paul Pike, Charlie Henderson

**FROM** Jeffrey Ingram, Sean Paulsen, Mark Haddock

**EMAIL** [JIngram@Golder.com](mailto:JIngram@Golder.com)

### **ASSESSMENT MONITORING STATISTICAL EVALUATION FOR THE SCPA SURFACE IMPOUNDMENT, SIOUX ENERGY CENTER, ST CHARLES COUNTY, MISSOURI**

This Technical Memorandum provides the results of the Assessment Monitoring Statistical Evaluation for the April-May 2020 sampling event at the SCPA Surface Impoundment of the Sioux Energy Center located in St. Charles 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 Appendix IV parameters (**Appendix A** and **Appendix B**).

As a part of the updated Corrective Action Plan, monitoring wells AM-1S and AM-1D were removed from the Detection and Assessment monitoring well network and added to the Corrective Action Network. Statistical analysis for these wells will now be completed as a part of the Corrective Action statistical analysis and not the Assessment Monitoring Analysis. All other monitoring wells in the network have remained the same.

The Appendix IV constituents were evaluated for SSLs using the methods and procedures outlined in the Statistical Analysis Plan (SAP). The following outliers were removed prior to the calculation of confidence limits:

- Beryllium
  - UMW-3D at 0.40 J micrograms per liter (µg/L) on 4/6/18: result is statistically higher than other values at the same well. The high result has not been confirmed during subsequent sampling events.

No new SSL's were identified in the April 2020 sampling event. The SSLs reported for the April 2020 monitoring event are as follows:

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

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, R.G.  
*Project Geologist*



Sean Paulsen, P.G.  
*Associate, Senior Consultant*

JSI/SCP/MNH

Enclosures:

Table 1 – SCPA Groundwater Protection Standards

Appendix A – Sanitas Confidence Interval Statistical Output

Appendix B – Sanitas Trending Confidence Bands Statistical Output

**Table 1 - SCPA Groundwater Protection Standards  
SCPA Surface Impoundment  
Sioux Energy Center**

Parameter	Units	MCL or Health Based GWPS	Site GWPS	Value to Return to Detection Monitoring <sup>7</sup>
Antimony	µg/L	6	6	DQR
Arsenic	µg/L	10	10	1.054
Barium	µg/L	2000	2000	699
Beryllium	µg/L	4	4	DQR
Cadmium	µg/L	5	5	DQR
Chromium	µg/L	100	100	DQR
Cobalt	µg/L	6	6	DQR
Fluoride	mg/L	4	4	0.372
Lead	µg/L	15	15	DQR
Lithium	µg/L	40	40	28.48
Mercury	µg/L	2	2	DQR
Molybdenum	µg/L	100	100	DQR
Radium 226 + 228	pCi/L	5	5	2.537
Selenium	µg/L	50	50	DQR
Thallium	µg/L	2	2	DQR

Notes:

1. µg/L - micrograms per liter
2. mg/L - milligrams per liter
3. pCi/L - picocuries per liter

4. MCL - Maximum Contaminant Level. MCLs from United States Environmental Protection Agency (USEPA) 2012 Edition of the Drinking Water Standards and Health Advisories. Spring 2012. <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 August 2019 from monitoring wells BMW-1D and BMW-3D.

Prepared by: JSI

Checked by: LMS

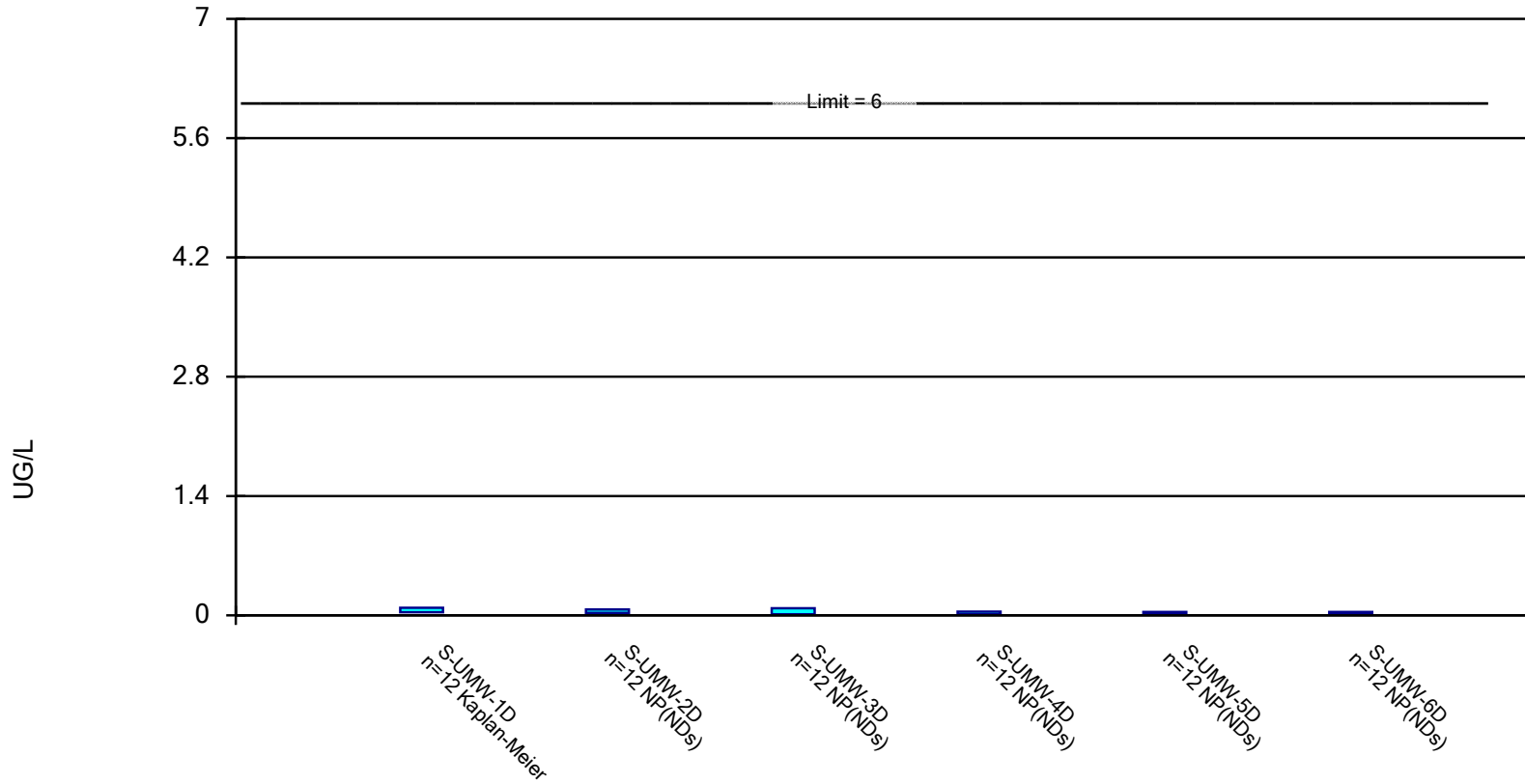
Reviewed by: SCP

**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.

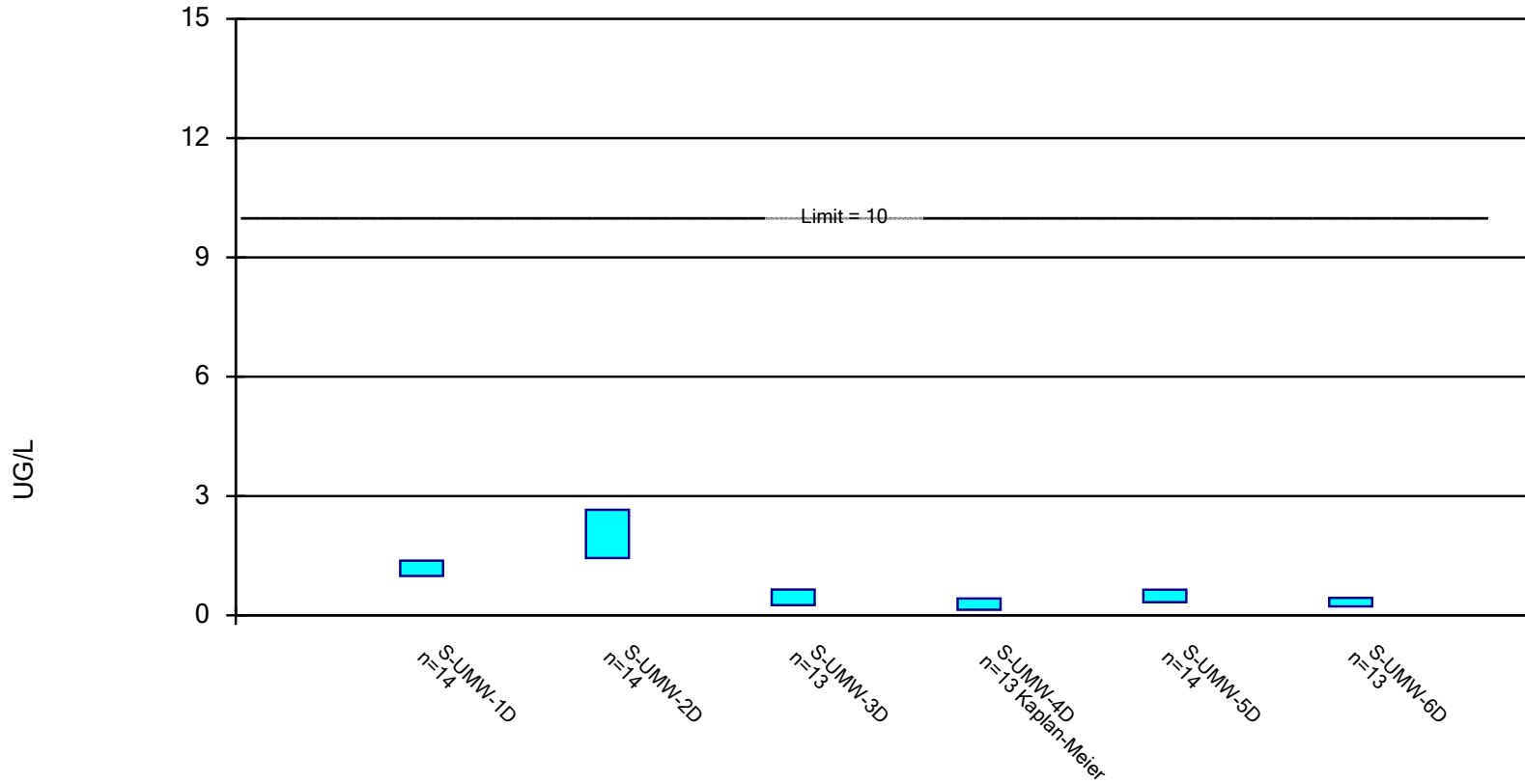


Constituent: ANTIMONY, TOTAL Analysis Run 7/8/2020 4:34 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_

### Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

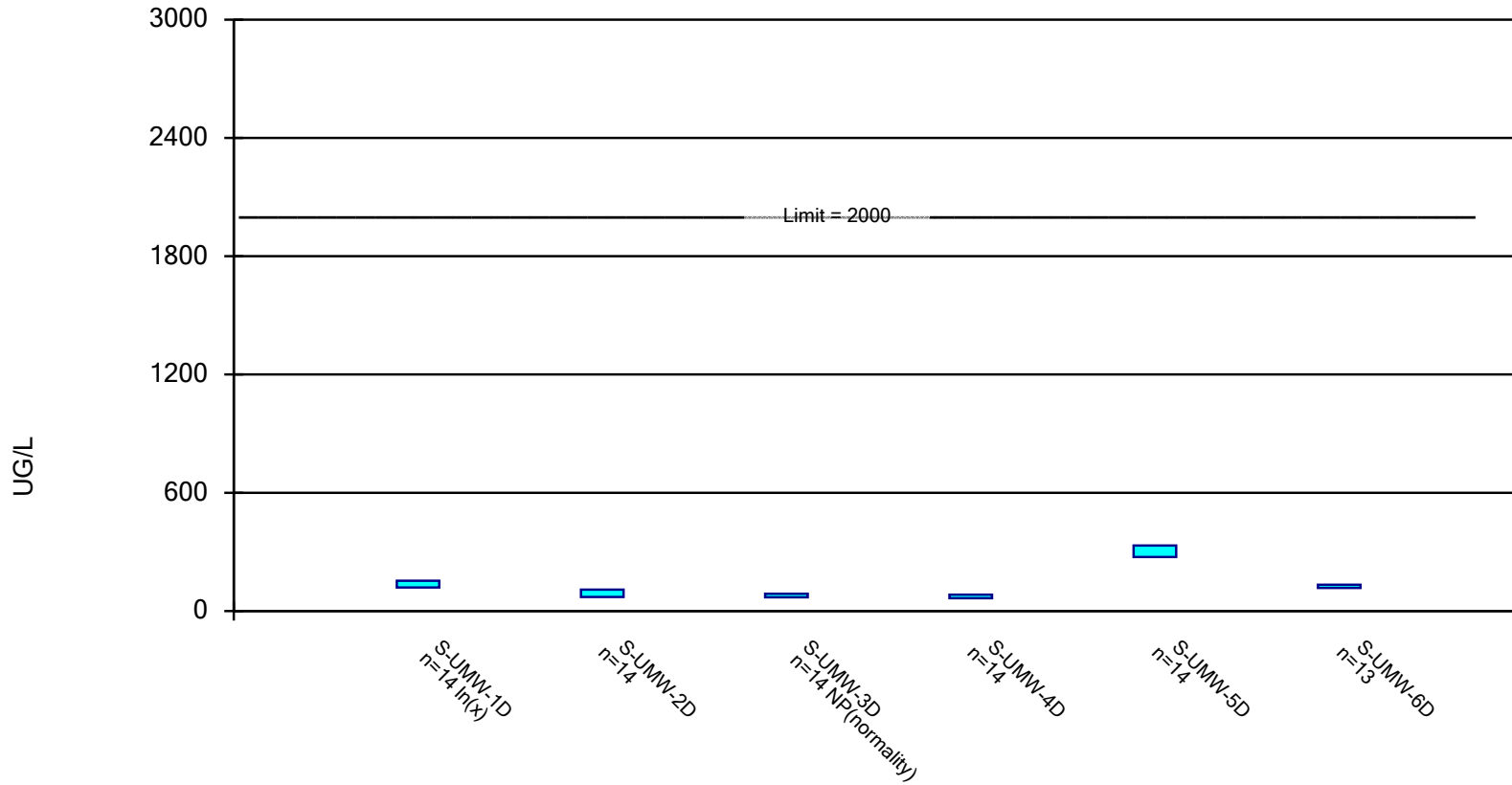


Constituent: ARSENIC, TOTAL Analysis Run 7/8/2020 4:34 PM

Sioux E.C. Client: Ameren Data: SEC 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.



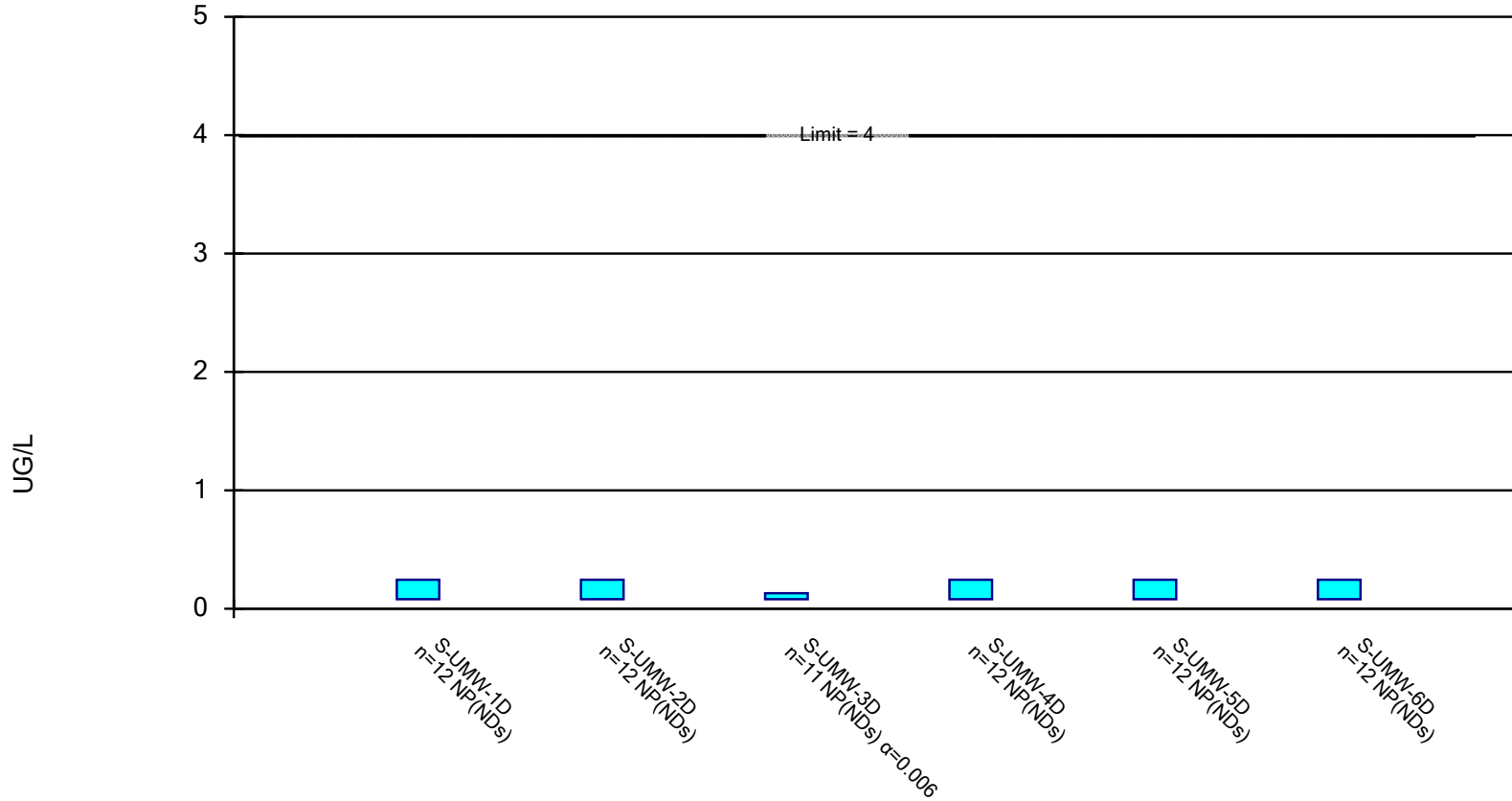
Constituent: BARIUM, TOTAL Analysis Run 7/8/2020 4:34 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_



### Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted.

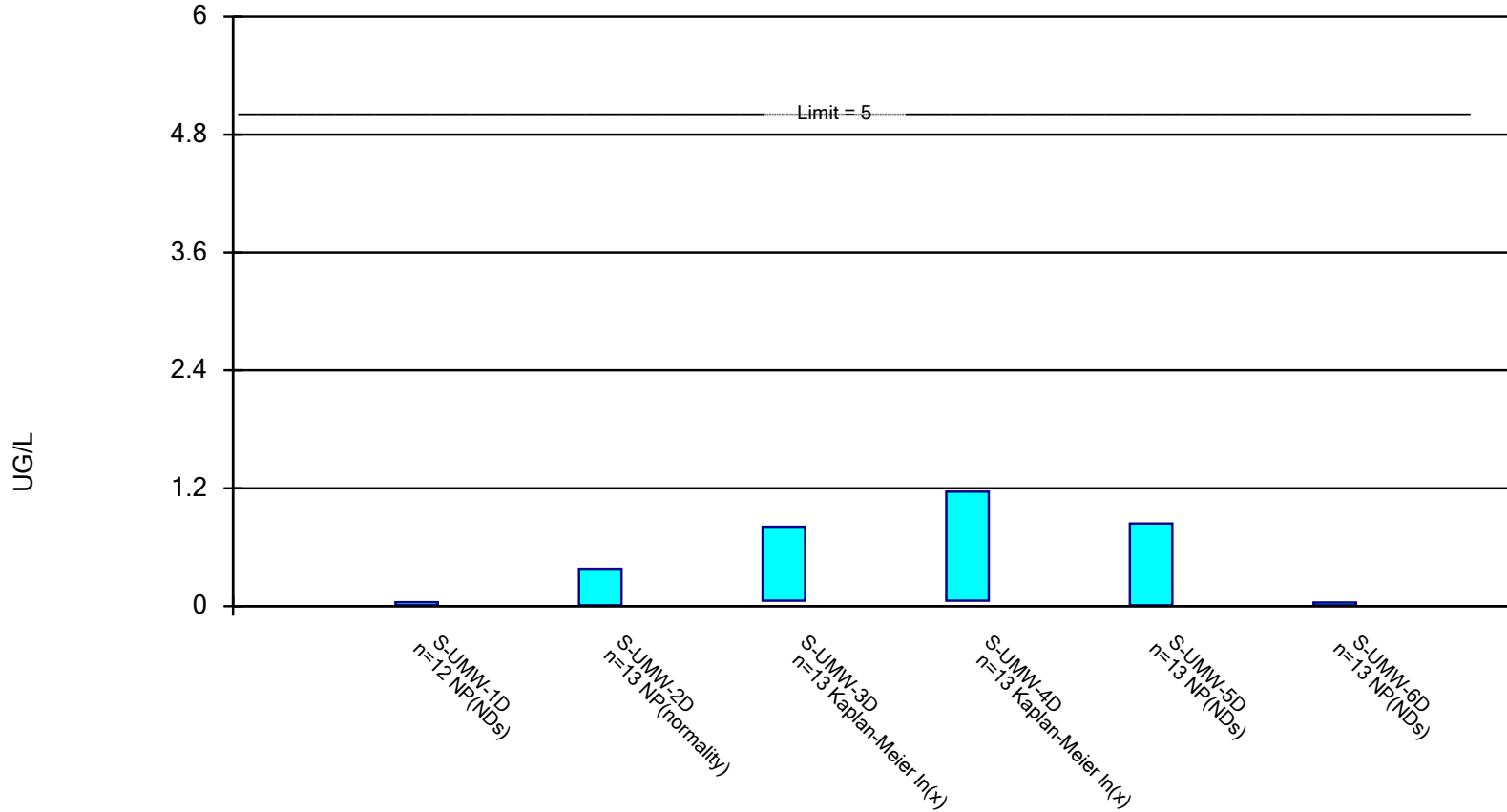


Constituent: BERYLLIUM, TOTAL Analysis Run 7/8/2020 4:34 PM

Sioux E.C. Client: Ameren Data: SEC 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.

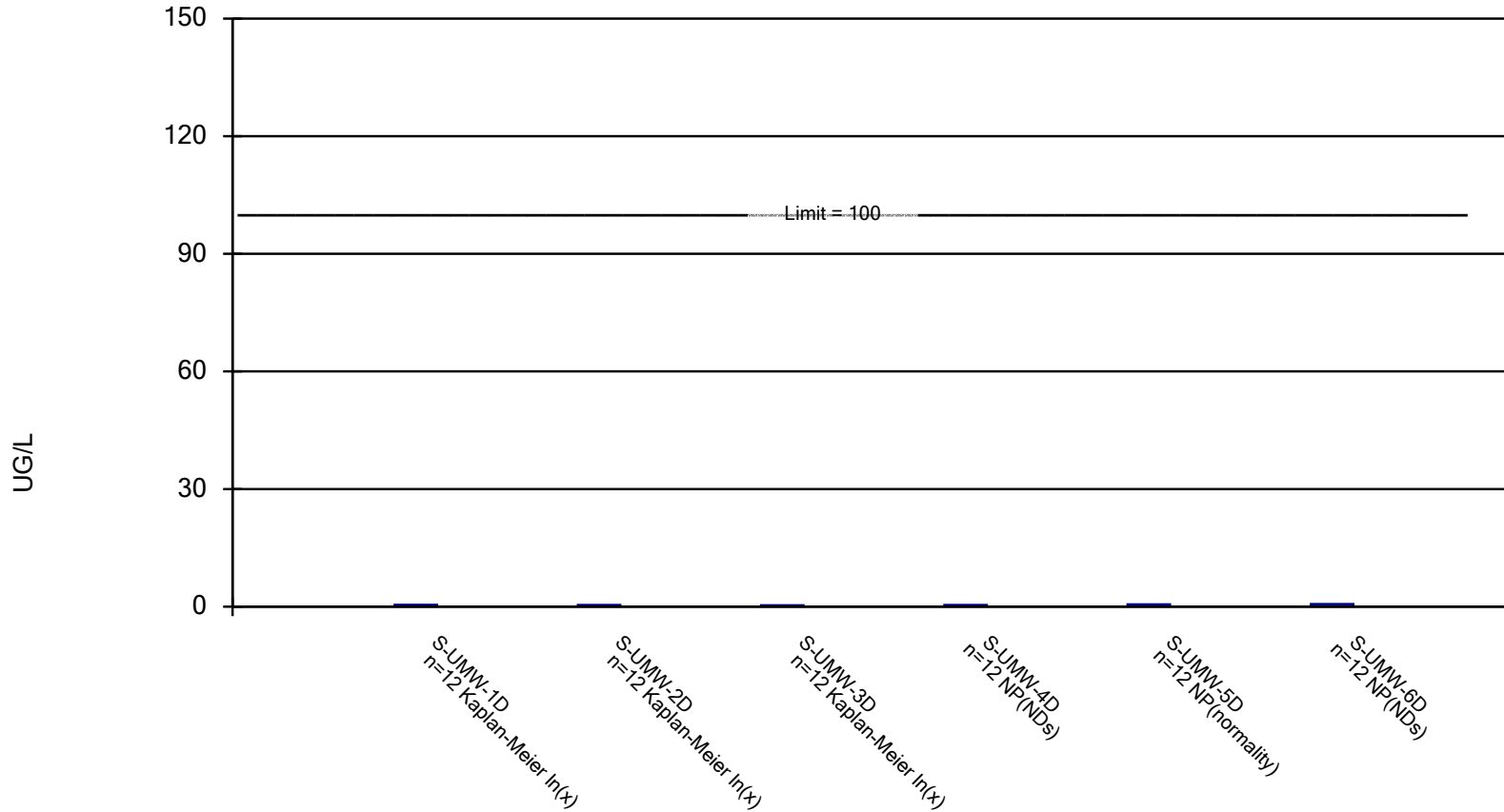


Constituent: CADMIUM, TOTAL Analysis Run 7/8/2020 4:34 PM

Sioux E.C. Client: Ameren Data: SEC 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.

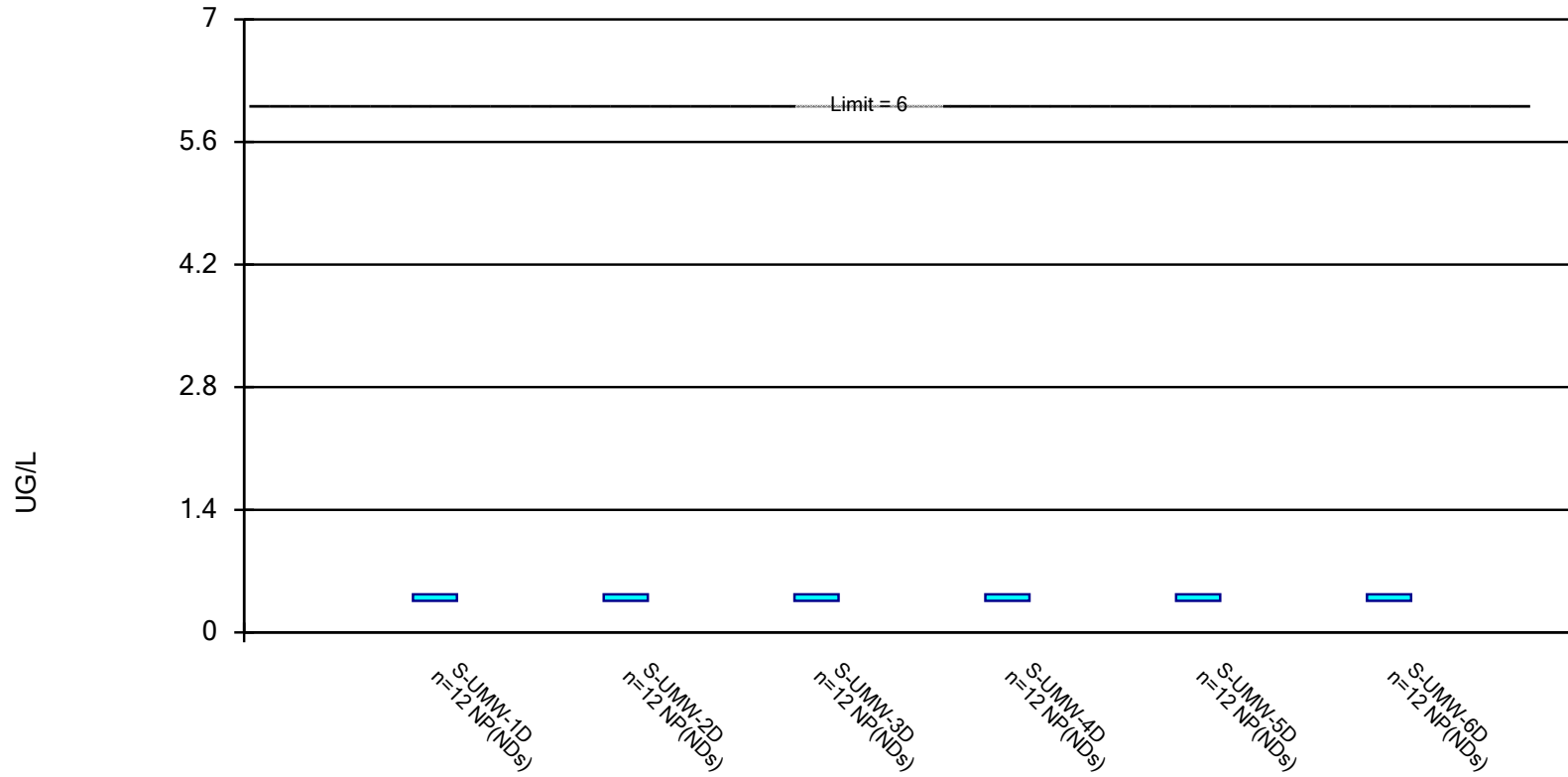


Constituent: CHROMIUM, TOTAL Analysis Run 7/8/2020 4:34 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_

## Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

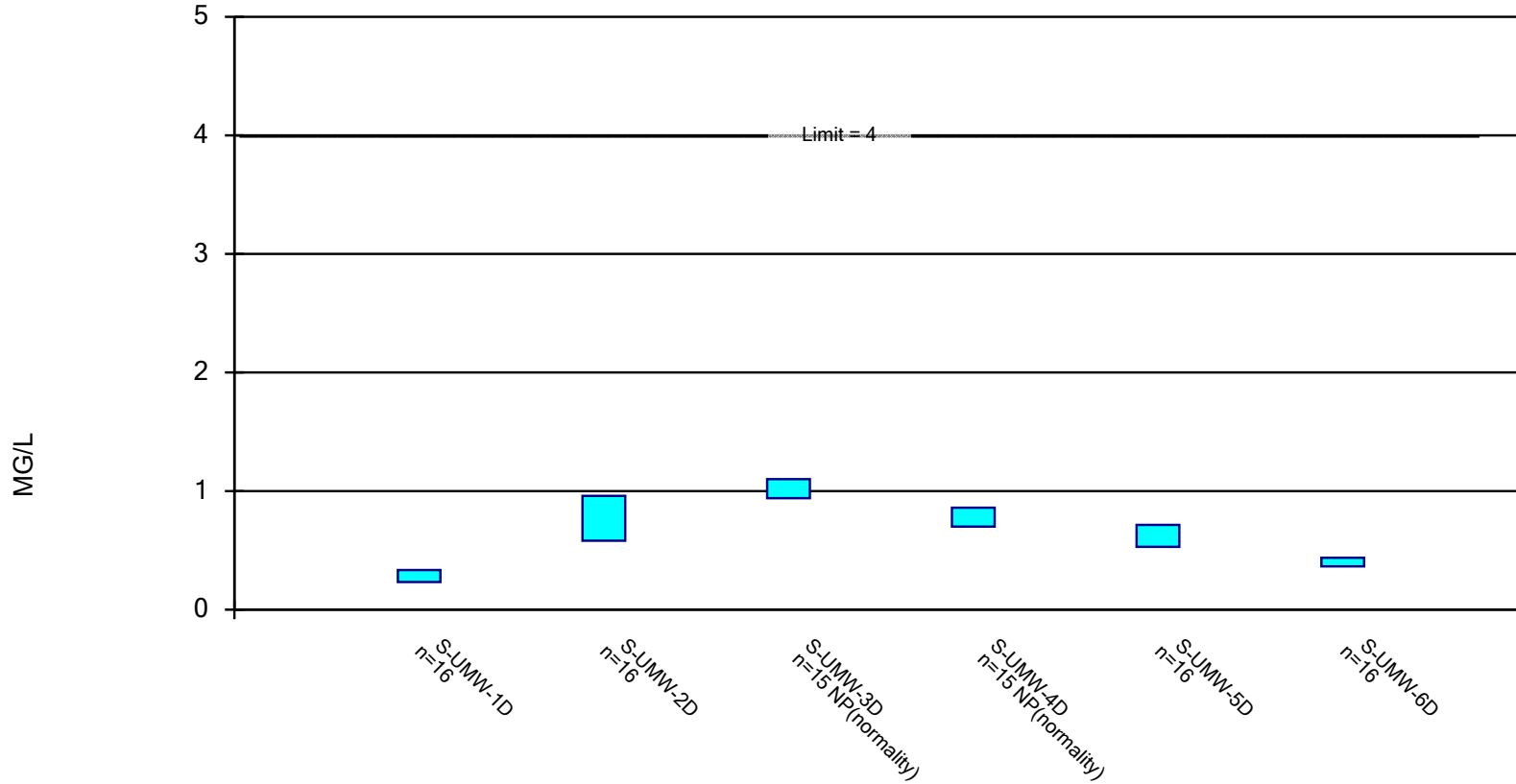


Constituent: COBALT, TOTAL Analysis Run 7/8/2020 4:34 PM

Sioux E.C. Client: Ameren Data: SEC 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.

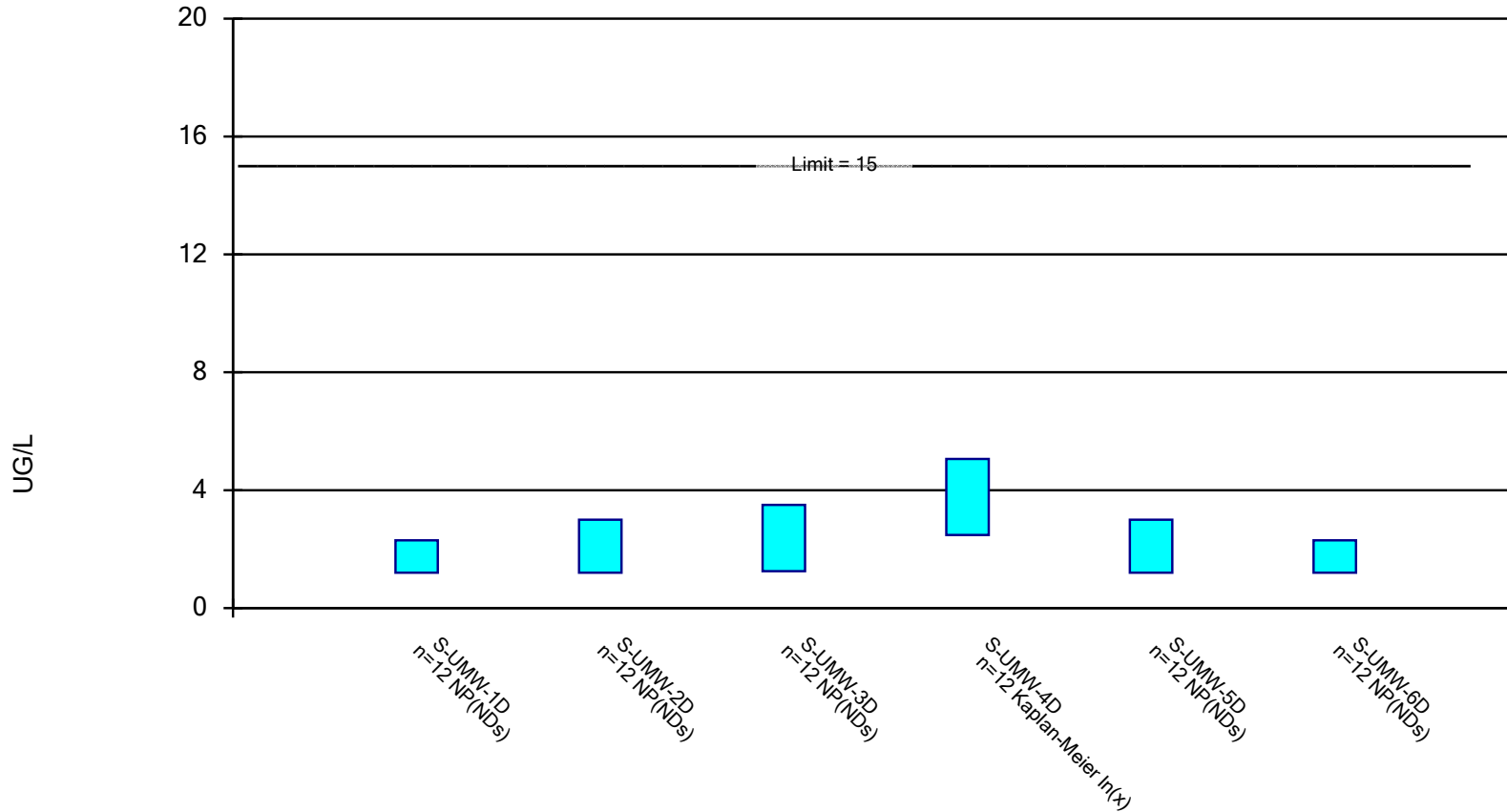


Constituent: FLUORIDE, TOTAL Analysis Run 7/8/2020 4:34 PM

Sioux E.C. Client: Ameren Data: SEC 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.

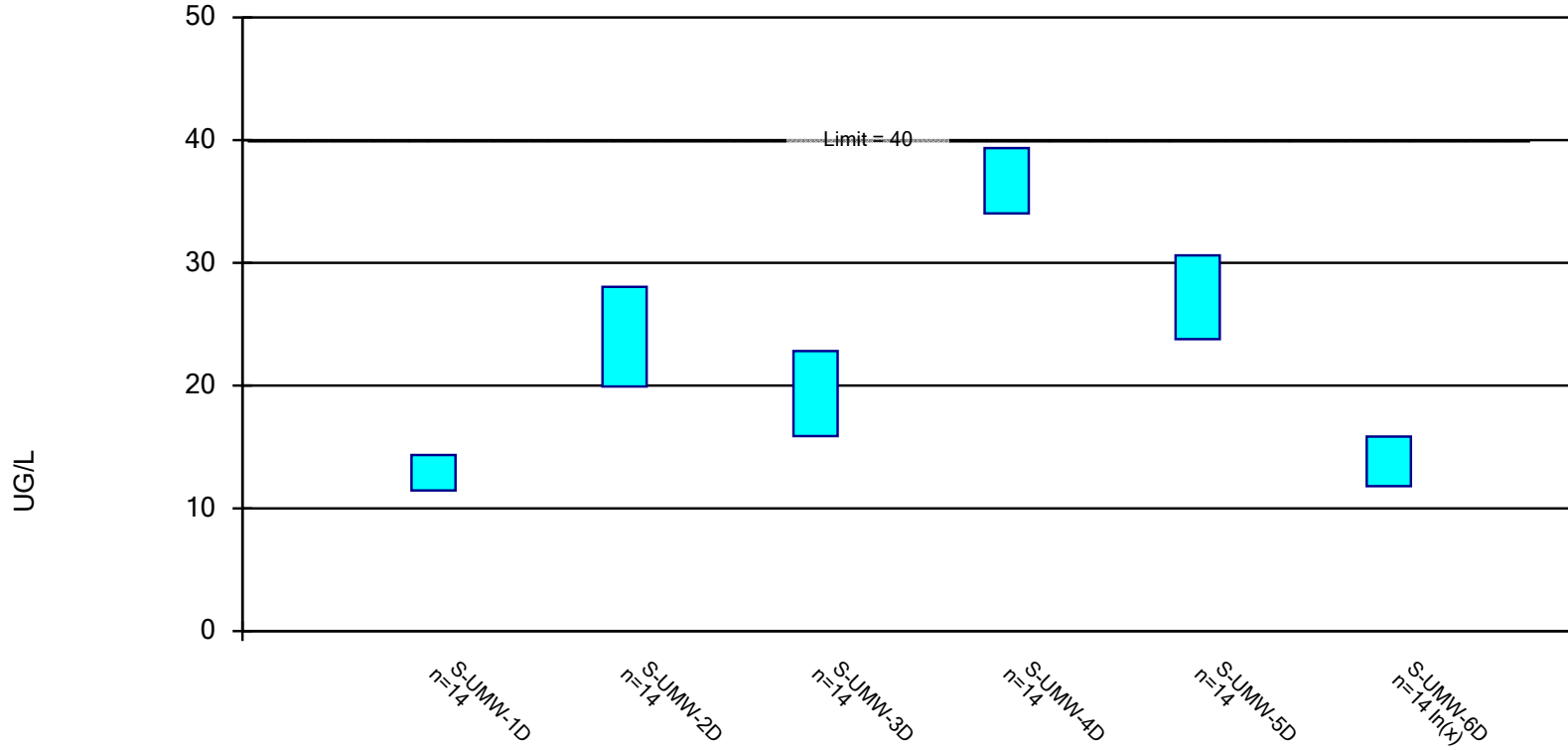


Constituent: LEAD, TOTAL Analysis Run 7/8/2020 4:34 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_

### Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

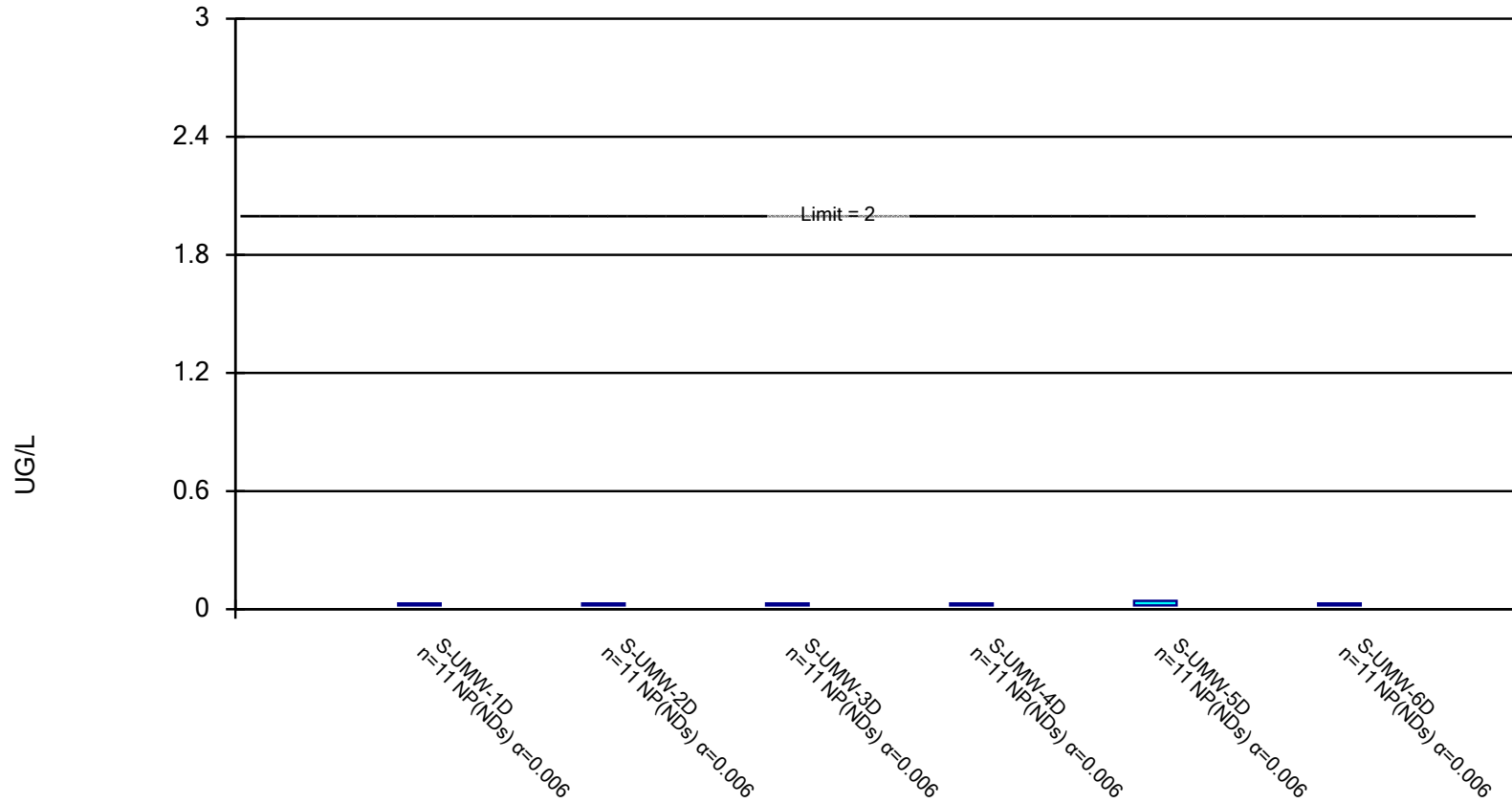


Constituent: LITHIUM, TOTAL Analysis Run 7/8/2020 4:34 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_

## Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



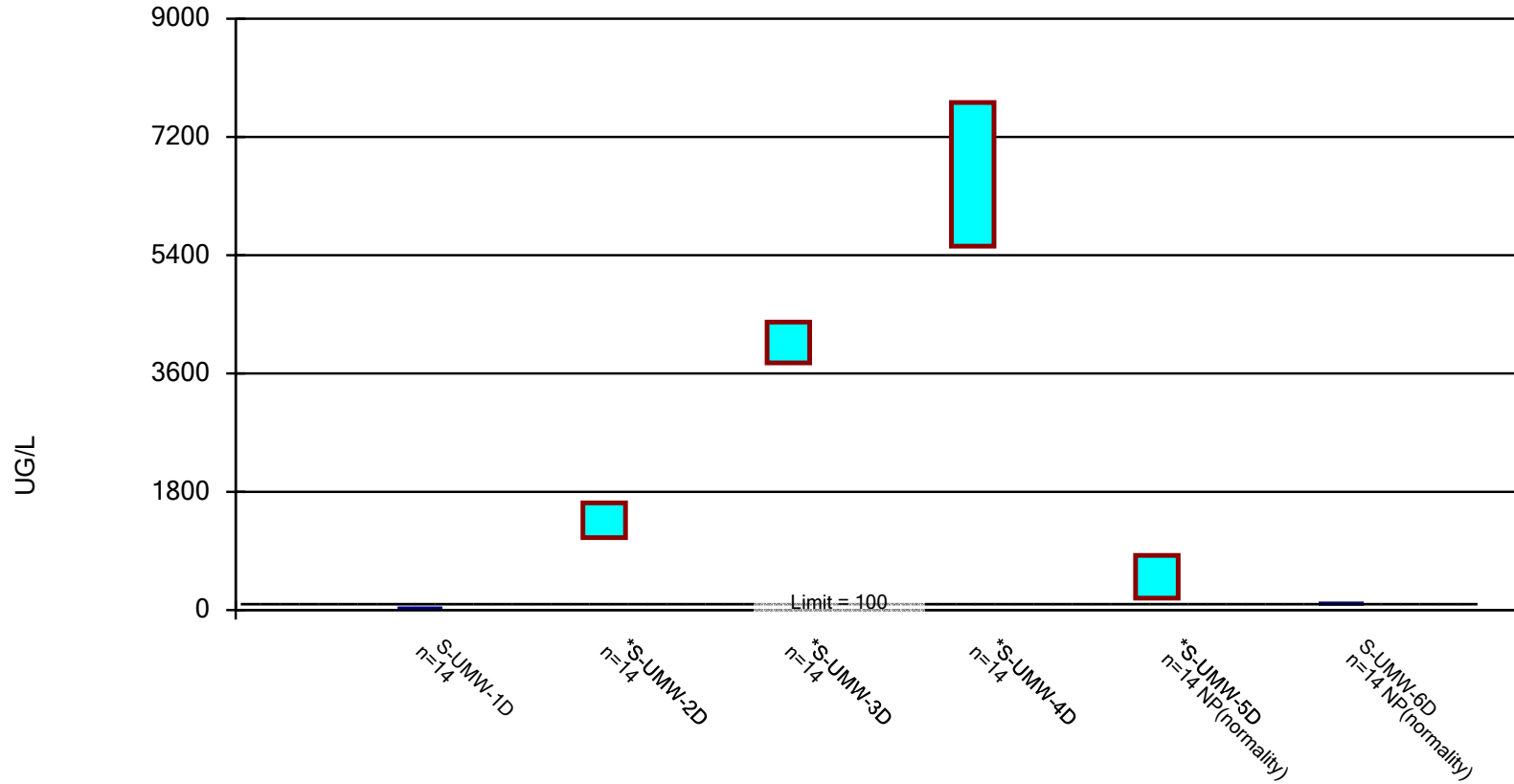
Constituent: MERCURY, TOTAL Analysis Run 7/8/2020 4:34 PM

Sioux E.C. Client: Ameren Data: SEC 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.

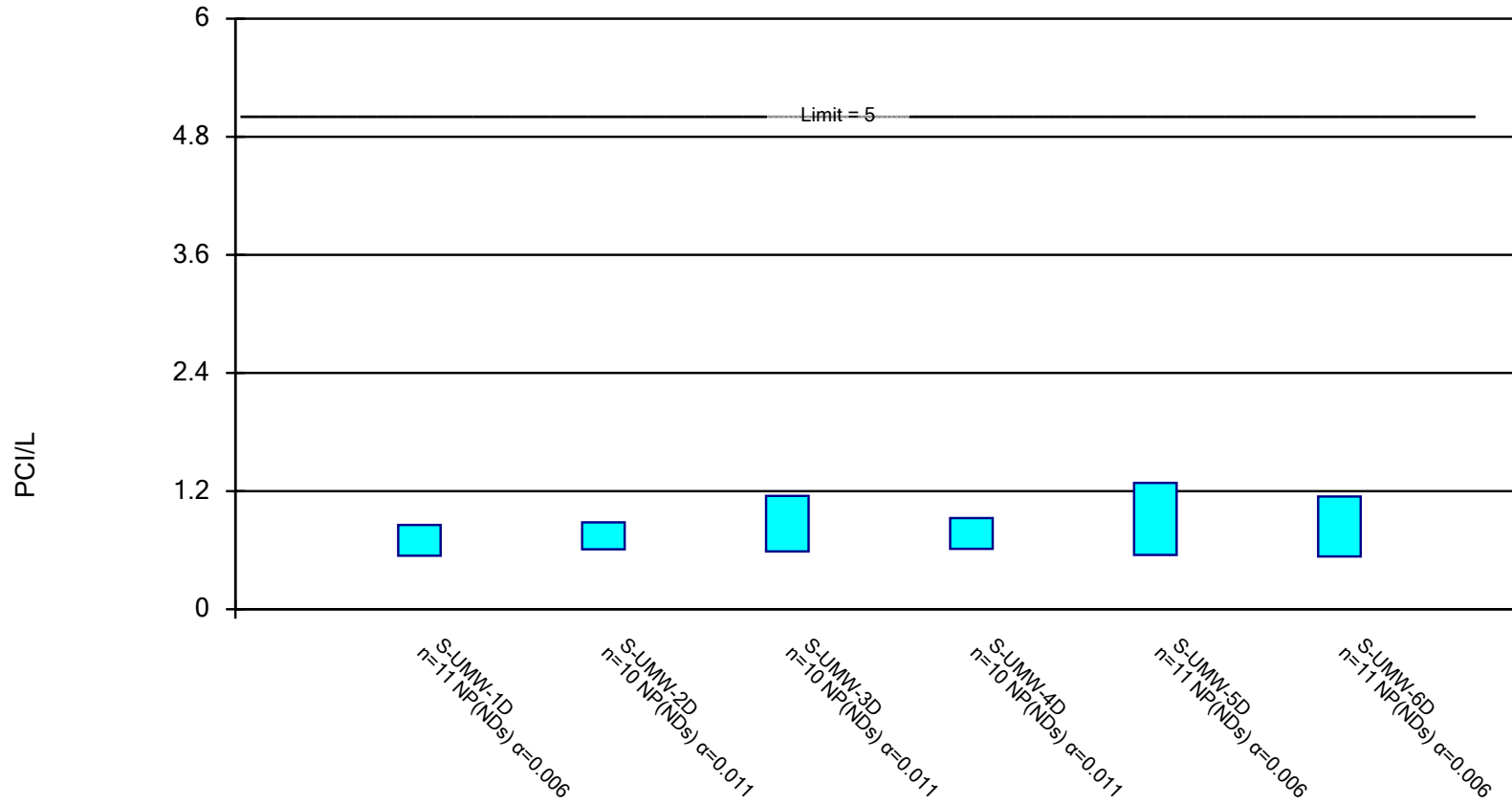


Constituent: MOLYBDENUM, TOTAL Analysis Run 7/8/2020 4:34 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_

## Non-Parametric Confidence Interval

Compliance Limit is not exceeded.

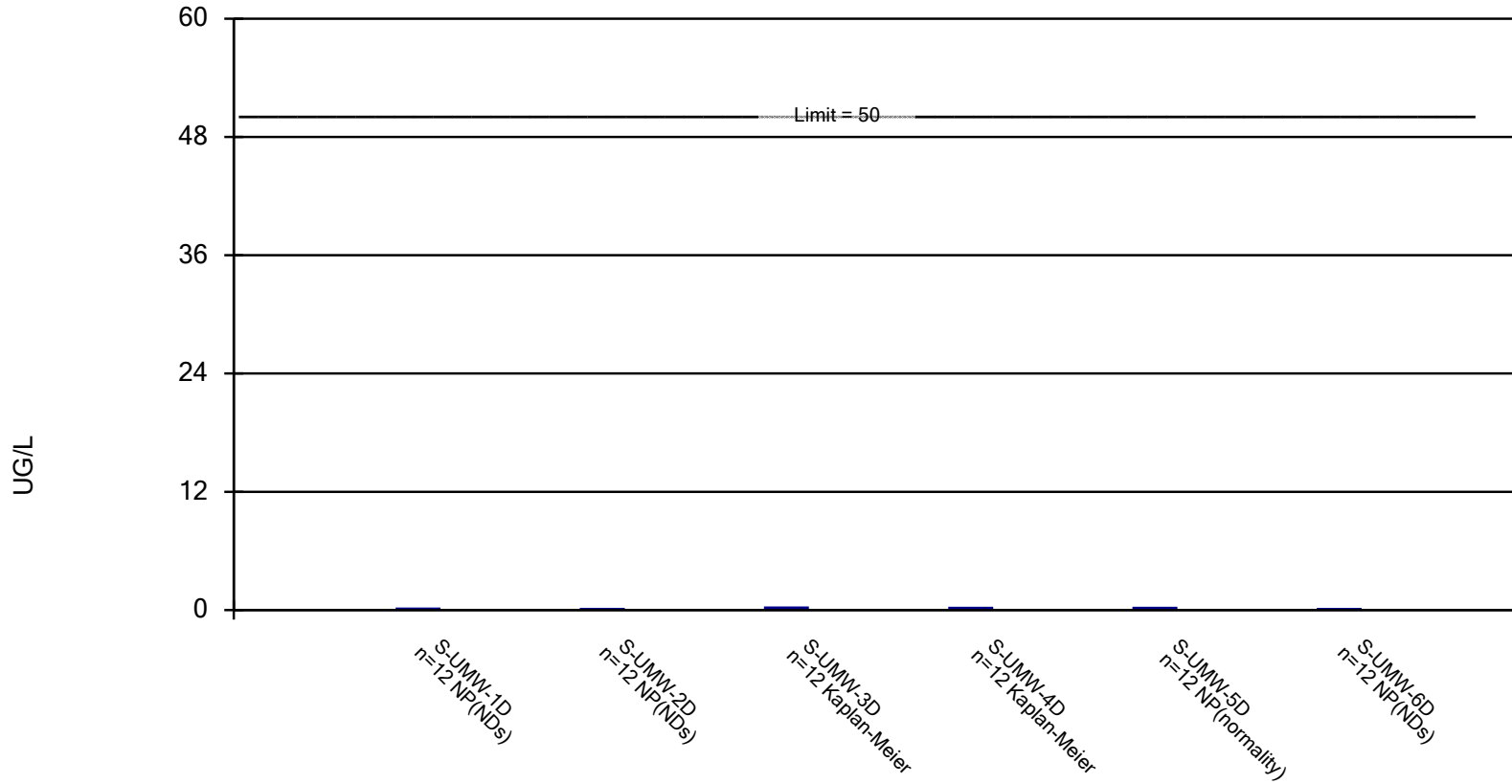


Constituent: RADIUM [226 + 228] Analysis Run 7/8/2020 4:34 PM

Sioux E.C. Client: Ameren Data: SEC 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.

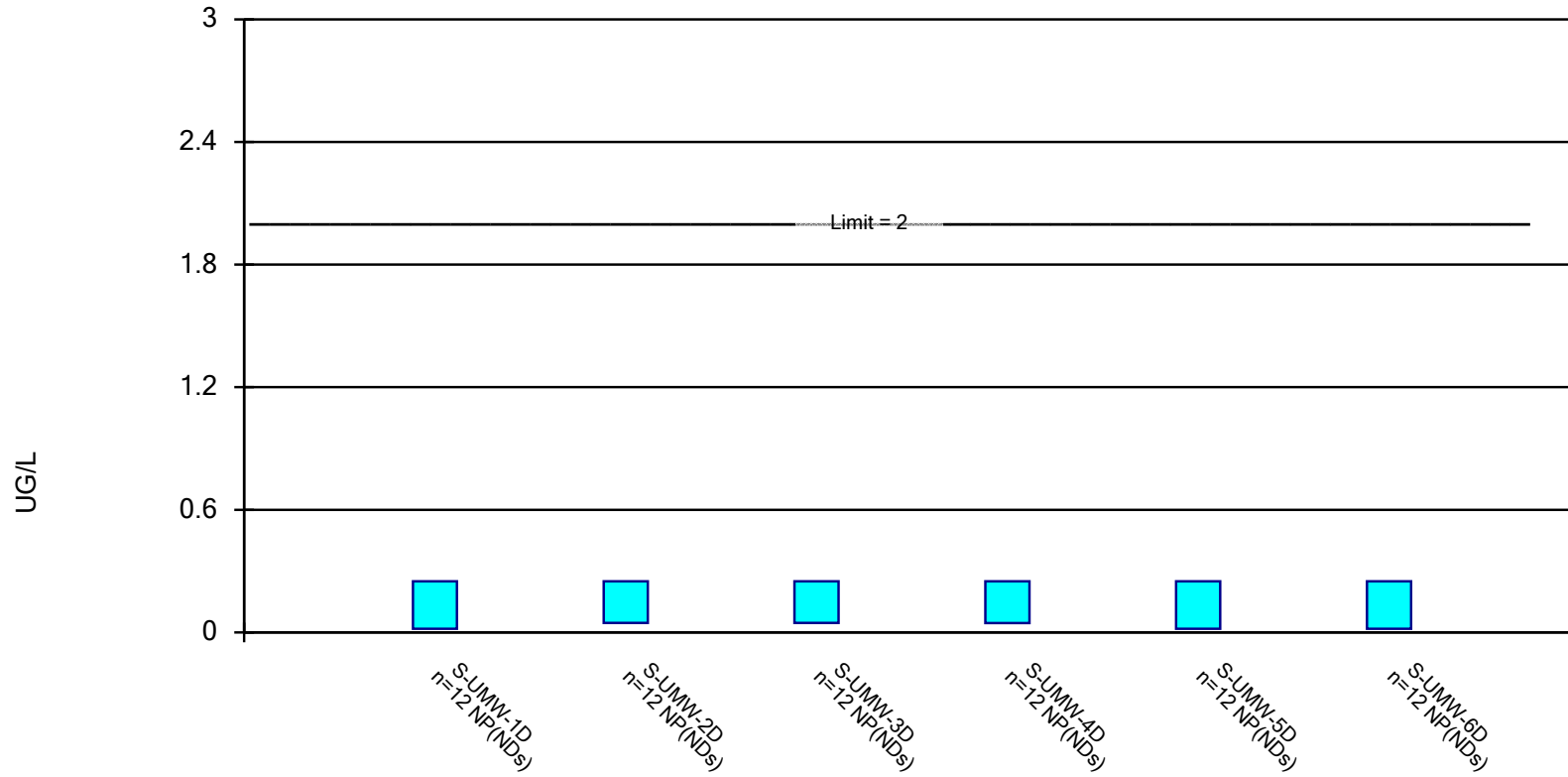


Constituent: SELENIUM, TOTAL Analysis Run 7/8/2020 4:34 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_

## Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: THALLIUM, TOTAL Analysis Run 7/8/2020 4:35 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_

# Confidence Interval

Sioux E.C. Client: Ameren Data: SEC DATA\_ Printed 7/8/2020, 4:39 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)	S-UMW-1D	0.08877	0.03573	6	No	12	41.67	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	S-UMW-2D	0.068	0.029	6	No	12	58.33	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-UMW-3D	0.083	0.013	6	No	12	75	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-UMW-4D	0.043	0.013	6	No	12	91.67	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-UMW-5D	0.039	0.013	6	No	12	100	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-UMW-6D	0.039	0.013	6	No	12	100	No	0.01	NP (NDs)
ARSENIC, TOTAL (UG/L)	S-UMW-1D	1.374	0.9889	10	No	14	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-UMW-2D	2.654	1.442	10	No	14	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-UMW-3D	0.6469	0.2571	10	No	13	7.692	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-UMW-4D	0.4217	0.1377	10	No	13	23.08	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-UMW-5D	0.6447	0.3304	10	No	14	7.143	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-UMW-6D	0.4385	0.223	10	No	13	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-UMW-1D	153.3	119.1	2000	No	14	0	ln(x)	0.01	Param.
BARIUM, TOTAL (UG/L)	S-UMW-2D	108.6	71.33	2000	No	14	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-UMW-3D	88	70.1	2000	No	14	0	No	0.01	NP (normality)
BARIUM, TOTAL (UG/L)	S-UMW-4D	82.58	65.36	2000	No	14	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-UMW-5D	332.1	274.2	2000	No	14	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-UMW-6D	133.2	116.9	2000	No	13	0	No	0.01	Param.
BERYLLIUM, TOTAL (UG/L)	S-UMW-1D	0.245	0.08	4	No	12	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-UMW-2D	0.245	0.08	4	No	12	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-UMW-3D	0.13	0.08	4	No	11	100	No	0.006	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-UMW-4D	0.245	0.08	4	No	12	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-UMW-5D	0.245	0.08	4	No	12	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-UMW-6D	0.245	0.08	4	No	12	100	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-UMW-1D	0.04	0.009	5	No	12	83.33	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-UMW-2D	0.38	0.009	5	No	13	46.15	No	0.01	NP (normality)
CADMIUM, TOTAL (UG/L)	S-UMW-3D	0.8076	0.05595	5	No	13	30.77	ln(x)	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-UMW-4D	1.165	0.05572	5	No	13	30.77	ln(x)	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-UMW-5D	0.84	0.009	5	No	13	53.85	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-UMW-6D	0.037	0.009	5	No	13	69.23	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	S-UMW-1D	0.462	0.08499	100	No	12	41.67	ln(x)	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-UMW-2D	0.4021	0.0786	100	No	12	41.67	ln(x)	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-UMW-3D	0.3399	0.07175	100	No	12	50	ln(x)	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-UMW-4D	0.4	0.027	100	No	12	58.33	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	S-UMW-5D	0.56	0.027	100	No	12	50	No	0.01	NP (normality)
CHROMIUM, TOTAL (UG/L)	S-UMW-6D	0.67	0.027	100	No	12	58.33	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	S-UMW-1D	0.435	0.36	6	No	12	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	S-UMW-2D	0.435	0.36	6	No	12	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	S-UMW-3D	0.435	0.36	6	No	12	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	S-UMW-4D	0.435	0.36	6	No	12	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	S-UMW-5D	0.435	0.36	6	No	12	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	S-UMW-6D	0.435	0.36	6	No	12	100	No	0.01	NP (NDs)
FLUORIDE, TOTAL (MG/L)	S-UMW-1D	0.3336	0.2327	4	No	16	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-UMW-2D	0.9592	0.5808	4	No	16	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-UMW-3D	1.1	0.94	4	No	15	0	No	0.01	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-UMW-4D	0.86	0.7	4	No	15	0	No	0.01	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-UMW-5D	0.7151	0.5299	4	No	16	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-UMW-6D	0.438	0.3645	4	No	16	0	No	0.01	Param.
LEAD, TOTAL (UG/L)	S-UMW-1D	2.3	1.2	15	No	12	91.67	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	S-UMW-2D	3	1.2	15	No	12	83.33	No	0.01	NP (NDs)

# Confidence Interval

Sioux E.C. Client: Ameren Data: SEC DATA\_ Printed 7/8/2020, 4:39 PM

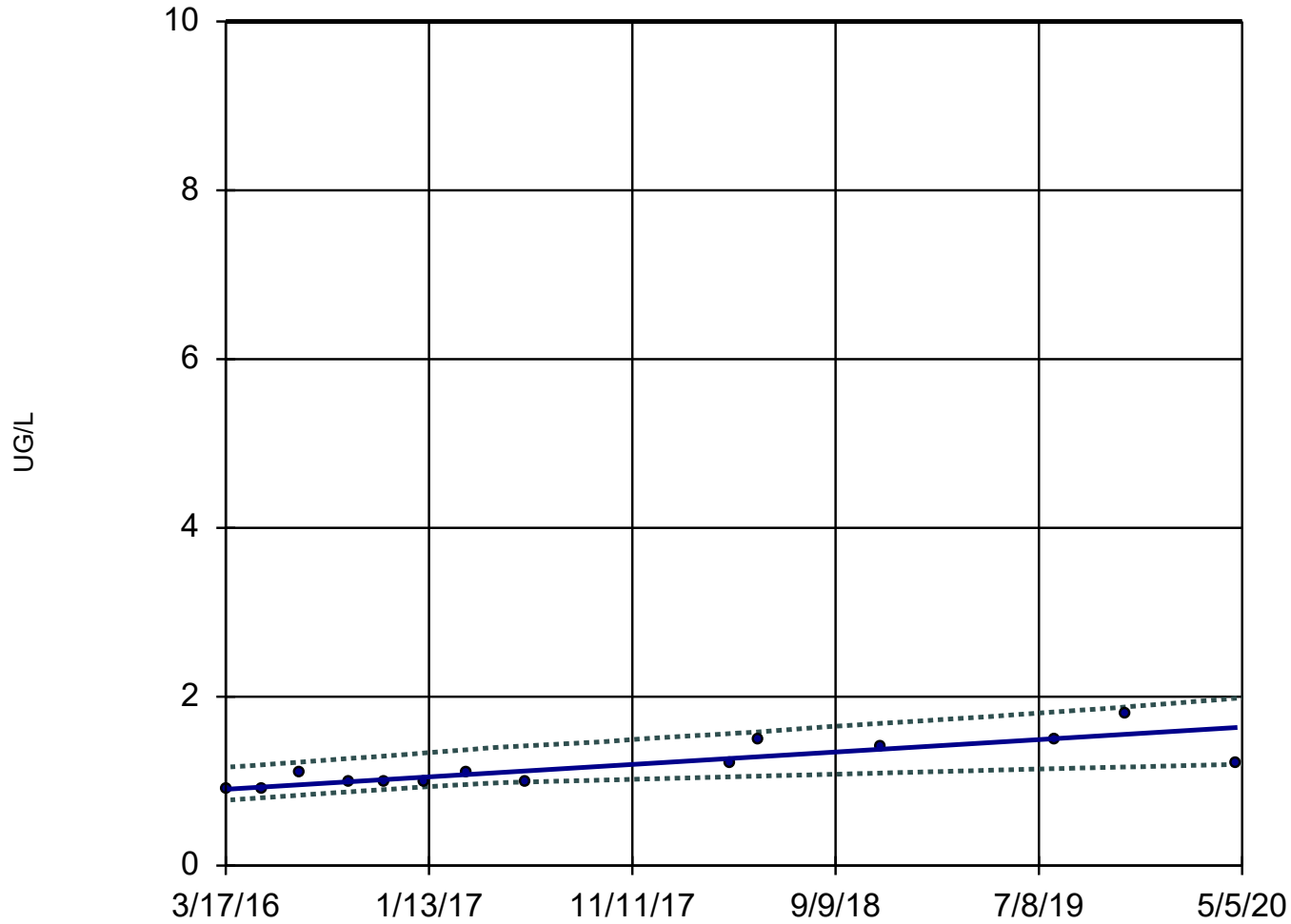
<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
LEAD, TOTAL (UG/L)	S-UMW-3D	3.5	1.25	15	No	12	58.33	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	S-UMW-4D	5.061	2.479	15	No	12	50	ln(x)	0.01	Param.
LEAD, TOTAL (UG/L)	S-UMW-5D	3	1.2	15	No	12	75	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	S-UMW-6D	2.3	1.2	15	No	12	91.67	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	S-UMW-1D	14.35	11.46	40	No	14	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UMW-2D	28.05	19.92	40	No	14	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UMW-3D	22.81	15.89	40	No	14	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UMW-4D	39.35	34.03	40	No	14	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UMW-5D	30.62	23.78	40	No	14	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UMW-6D	15.84	11.81	40	No	14	0	ln(x)	0.01	Param.
MERCURY, TOTAL (UG/L)	S-UMW-1D	0.029	0.0195	2	No	11	100	No	0.006	NP (NDs)
MERCURY, TOTAL (UG/L)	S-UMW-2D	0.029	0.0195	2	No	11	100	No	0.006	NP (NDs)
MERCURY, TOTAL (UG/L)	S-UMW-3D	0.029	0.0195	2	No	11	100	No	0.006	NP (NDs)
MERCURY, TOTAL (UG/L)	S-UMW-4D	0.029	0.0195	2	No	11	100	No	0.006	NP (NDs)
MERCURY, TOTAL (UG/L)	S-UMW-5D	0.0425	0.0195	2	No	11	100	No	0.006	NP (NDs)
MERCURY, TOTAL (UG/L)	S-UMW-6D	0.029	0.0195	2	No	11	100	No	0.006	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	S-UMW-1D	35.61	25.61	100	No	14	0	No	0.01	Param.
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>S-UMW-2D</b>	<b>1631</b>	<b>1102</b>	<b>100</b>	<b>Yes</b>	<b>14</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>S-UMW-3D</b>	<b>4381</b>	<b>3761</b>	<b>100</b>	<b>Yes</b>	<b>14</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>S-UMW-4D</b>	<b>7725</b>	<b>5538</b>	<b>100</b>	<b>Yes</b>	<b>14</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param.</b>
<b>MOLYBDENUM, TOTAL (UG/L)</b>	<b>S-UMW-5D</b>	<b>832</b>	<b>181</b>	<b>100</b>	<b>Yes</b>	<b>14</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>NP (normality)</b>
MOLYBDENUM, TOTAL (UG/L)	S-UMW-6D	112	82.3	100	No	14	0	No	0.01	NP (normality)
RADIUM [226 + 228] (PCI/L)	S-UMW-1D	0.8565	0.543	5	No	11	100	No	0.006	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-UMW-2D	0.8825	0.609	5	No	10	100	No	0.011	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-UMW-3D	1.151	0.5865	5	No	10	80	No	0.011	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-UMW-4D	0.9255	0.613	5	No	10	100	No	0.011	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-UMW-5D	1.283	0.552	5	No	11	72.73	No	0.006	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-UMW-6D	1.145	0.535	5	No	11	90.91	No	0.006	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-UMW-1D	0.13	0.0425	50	No	12	91.67	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-UMW-2D	0.11	0.043	50	No	12	66.67	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-UMW-3D	0.2407	0.1558	50	No	12	16.67	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	S-UMW-4D	0.2131	0.1344	50	No	12	25	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	S-UMW-5D	0.22	0.09	50	No	12	25	No	0.01	NP (normality)
SELENIUM, TOTAL (UG/L)	S-UMW-6D	0.09	0.0425	50	No	12	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-UMW-1D	0.25	0.018	2	No	12	91.67	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-UMW-2D	0.25	0.0465	2	No	12	83.33	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-UMW-3D	0.25	0.0465	2	No	12	83.33	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-UMW-4D	0.25	0.046	2	No	12	83.33	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-UMW-5D	0.25	0.018	2	No	12	91.67	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-UMW-6D	0.25	0.018	2	No	12	100	No	0.01	NP (NDs)

**APPENDIX B**

Sanitas Trending Confidence Band  
Statistical Output

## Sen's Slope and 95% Confidence Band

S-UMW-1D



n = 14

Slope = 0.1776  
units per year.

Mann-Kendall  
statistic = 60  
critical = 44

Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

GWPS = 10.

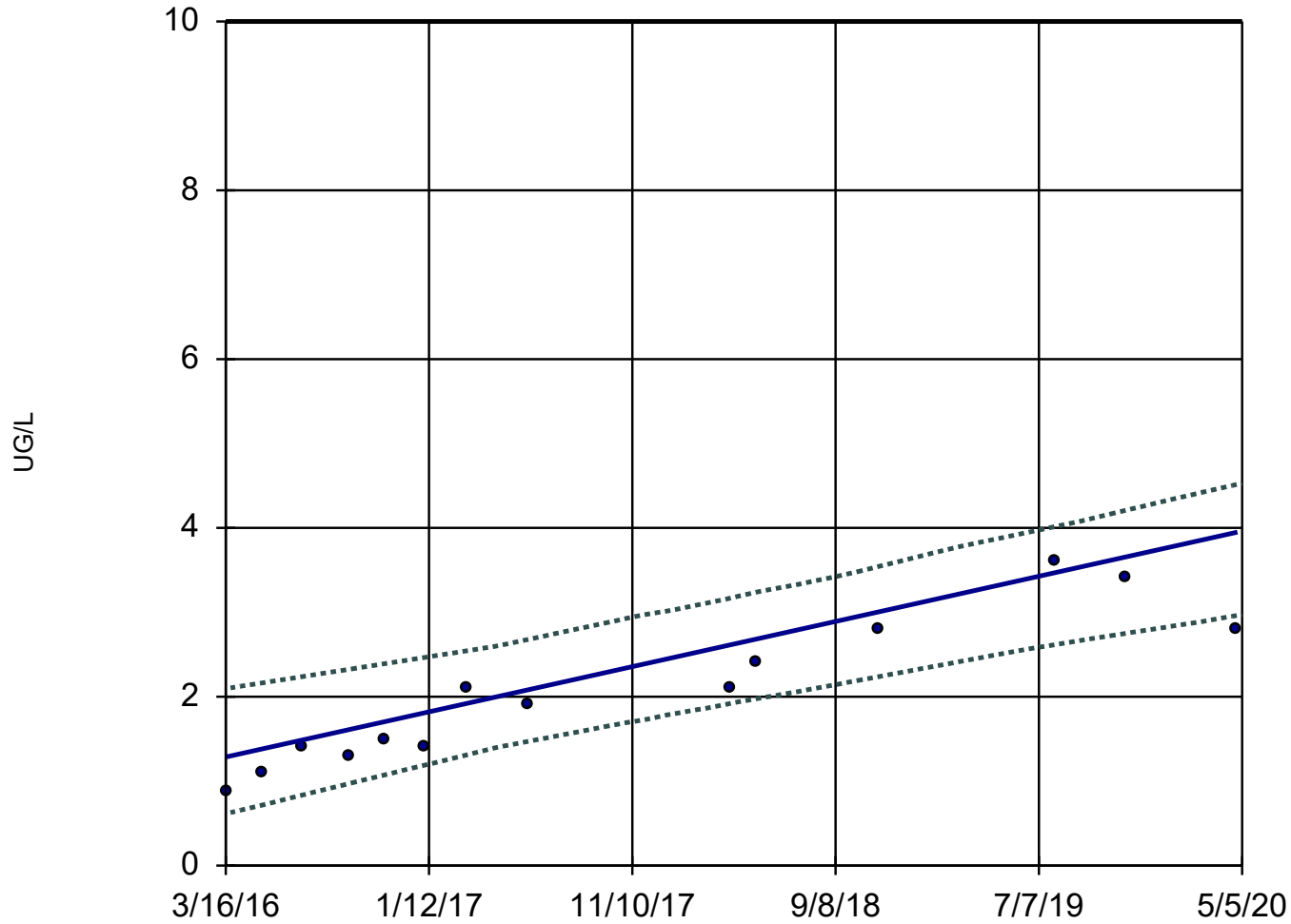
Constituent: ARSENIC, TOTAL Analysis Run 7/8/2020 4:45 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_



### Sen's Slope and 95% Confidence Band

S-UMW-2D



n = 14

Slope = 0.6465  
units per year.

Mann-Kendall  
statistic = 76  
critical = 44

Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

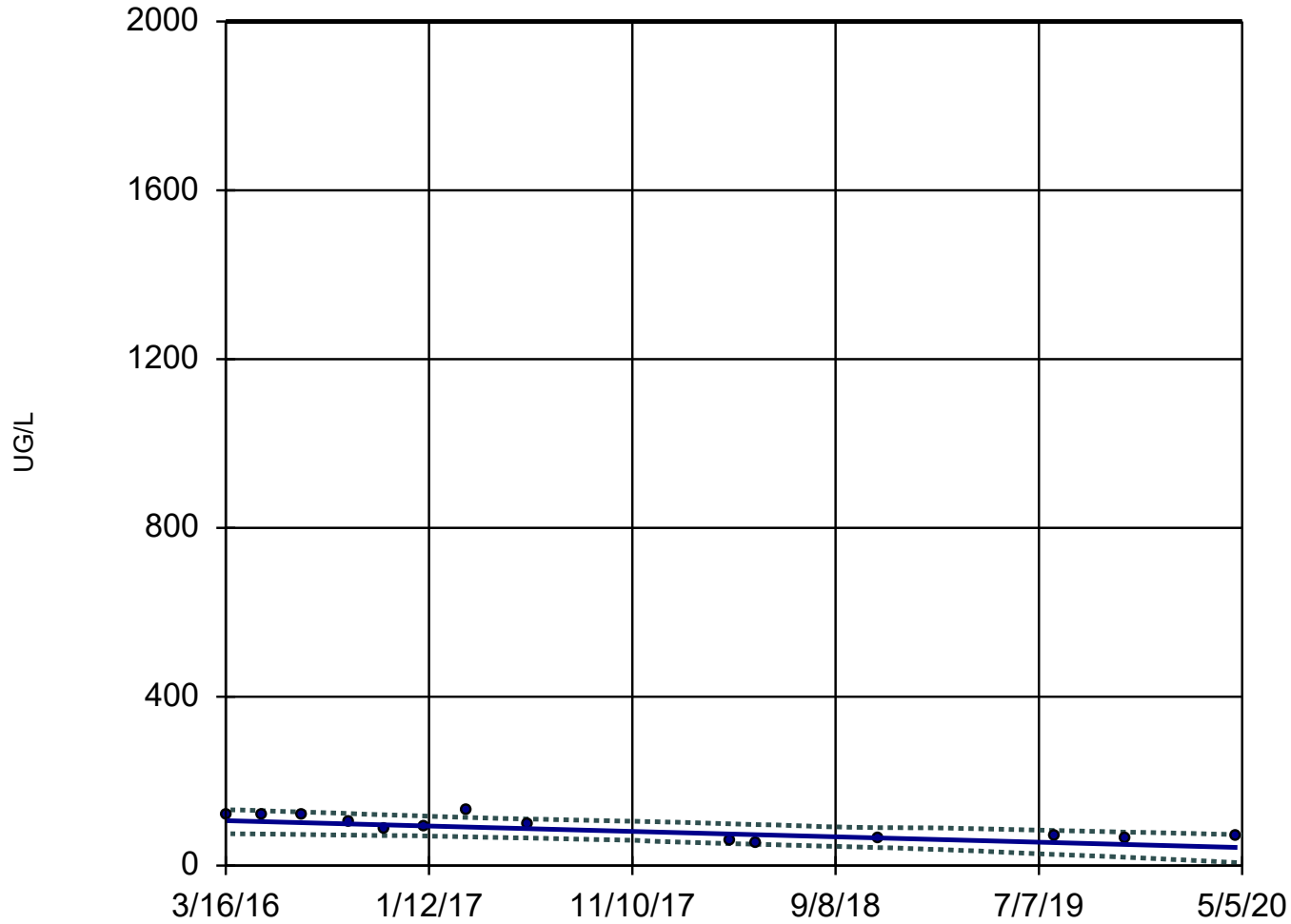
GWPS = 10.

Constituent: ARSENIC, TOTAL Analysis Run 7/8/2020 4:45 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_

## Sen's Slope and 95% Confidence Band

S-UMW-2D



n = 14

Slope = -15.4  
units per year.

Mann-Kendall  
statistic = -49  
critical = -44

Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

GWPS = 2000.

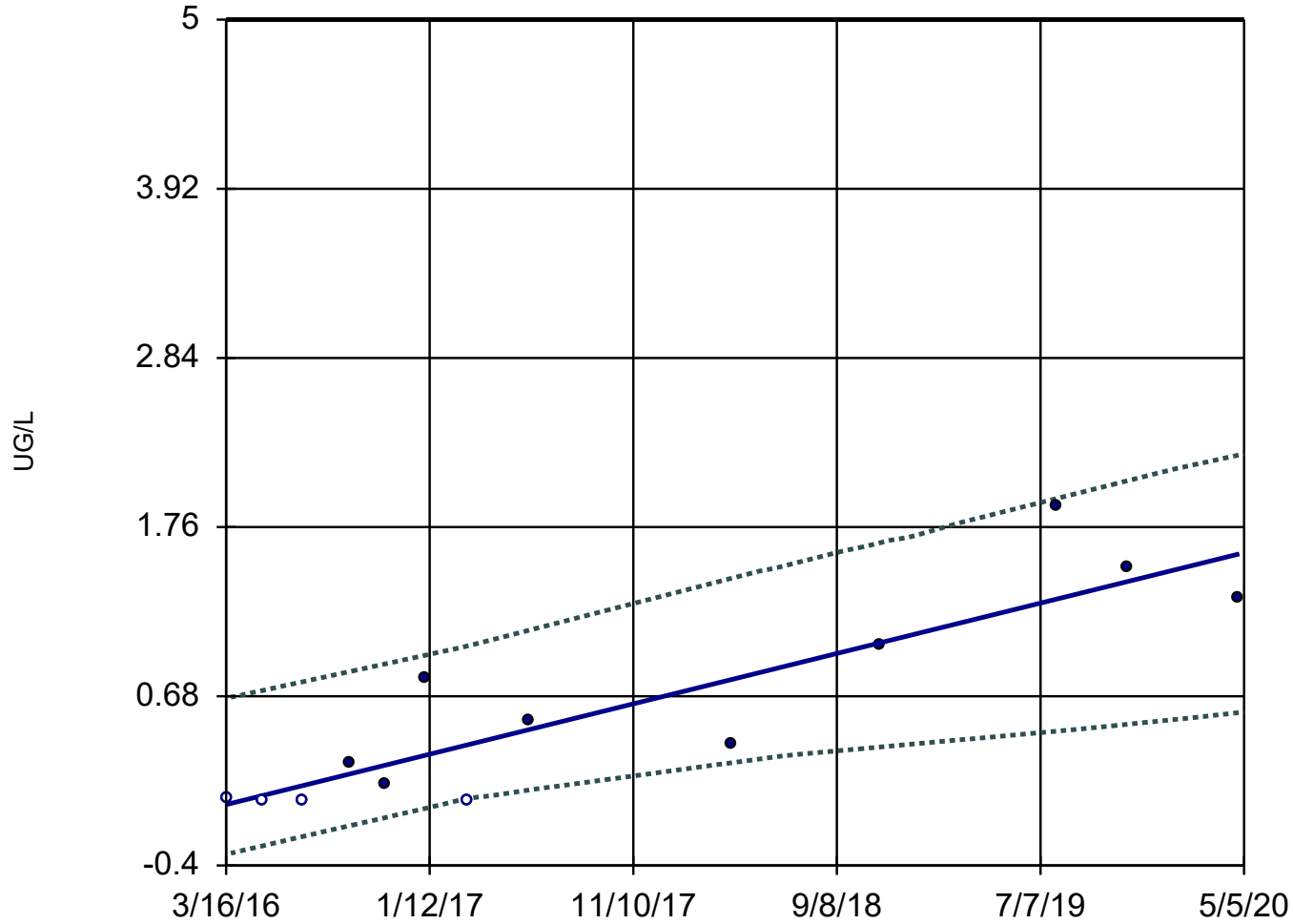
Constituent: BARIUM, TOTAL Analysis Run 7/8/2020 4:45 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_



### Sen's Slope and 95% Confidence Band

S-UMW-3D



n = 13

Slope = 0.3882  
units per year.

Mann-Kendall  
statistic = 47  
critical = 39

Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

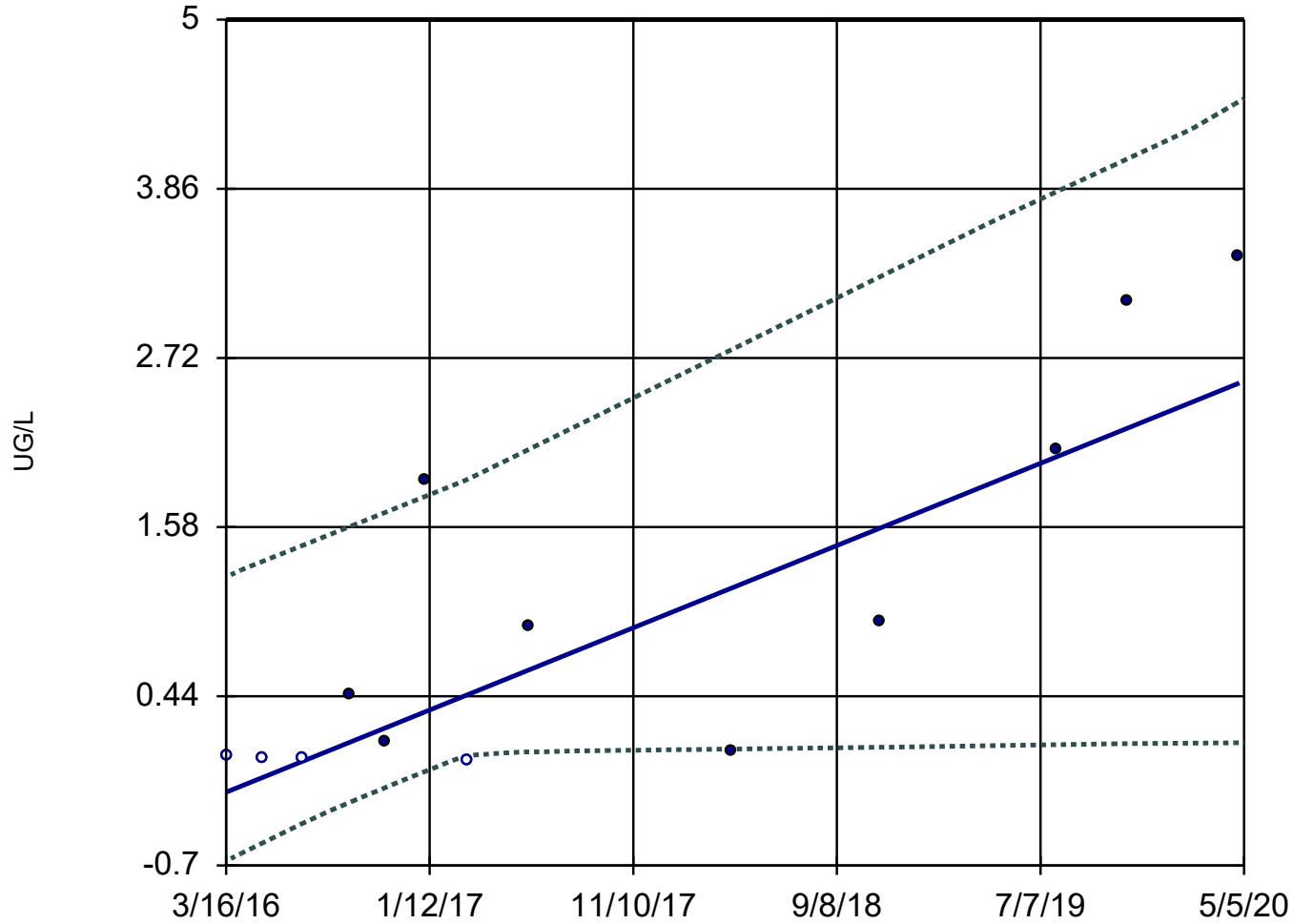
GWPS = 5.

Constituent: CADMIUM, TOTAL Analysis Run 7/8/2020 4:45 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_

### Sen's Slope and 95% Confidence Band

S-UMW-4D



n = 13

Slope = 0.669  
units per year.

Mann-Kendall  
statistic = 48  
critical = 39

Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

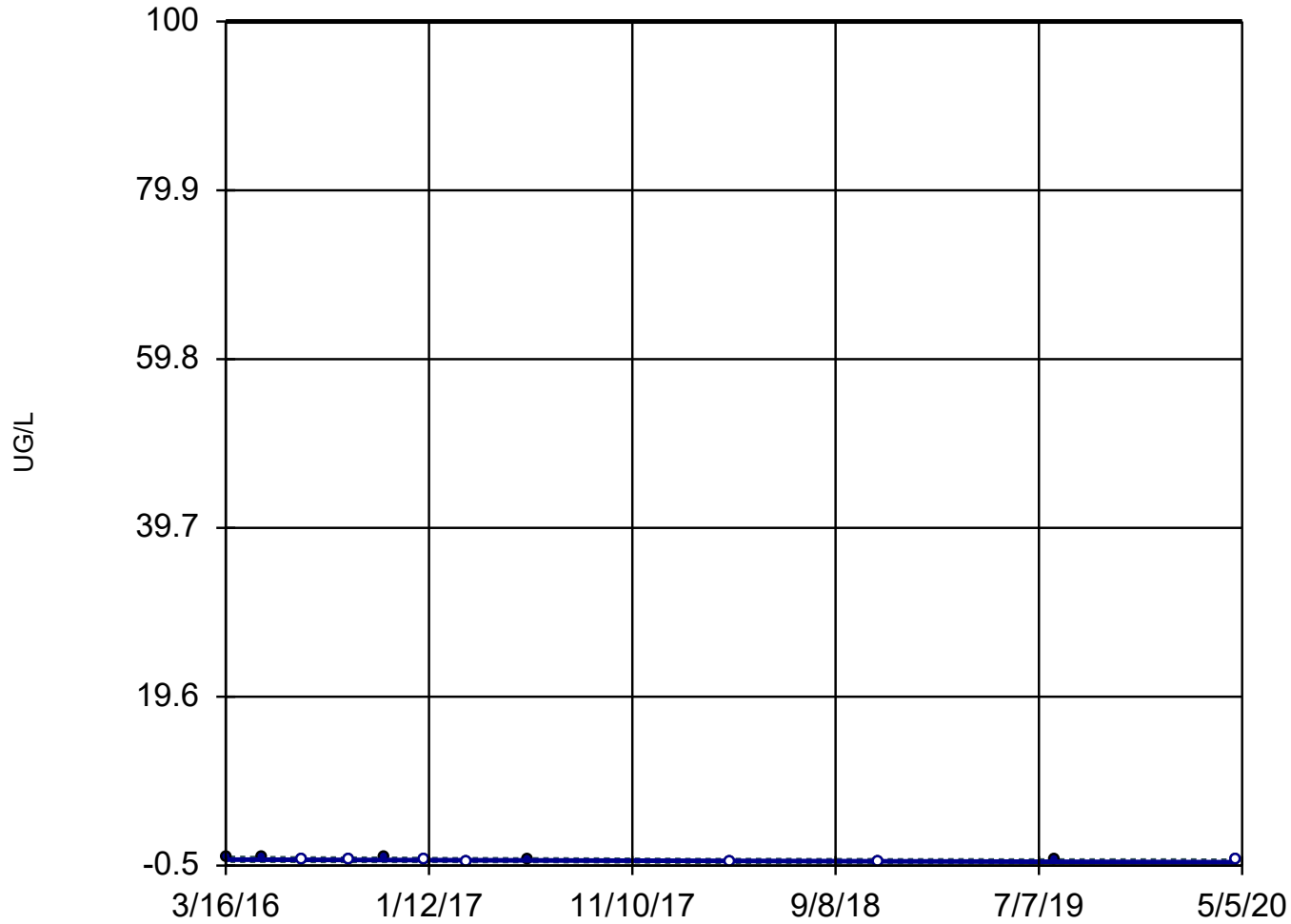
GWPS = 5.

Constituent: CADMIUM, TOTAL Analysis Run 7/8/2020 4:45 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_

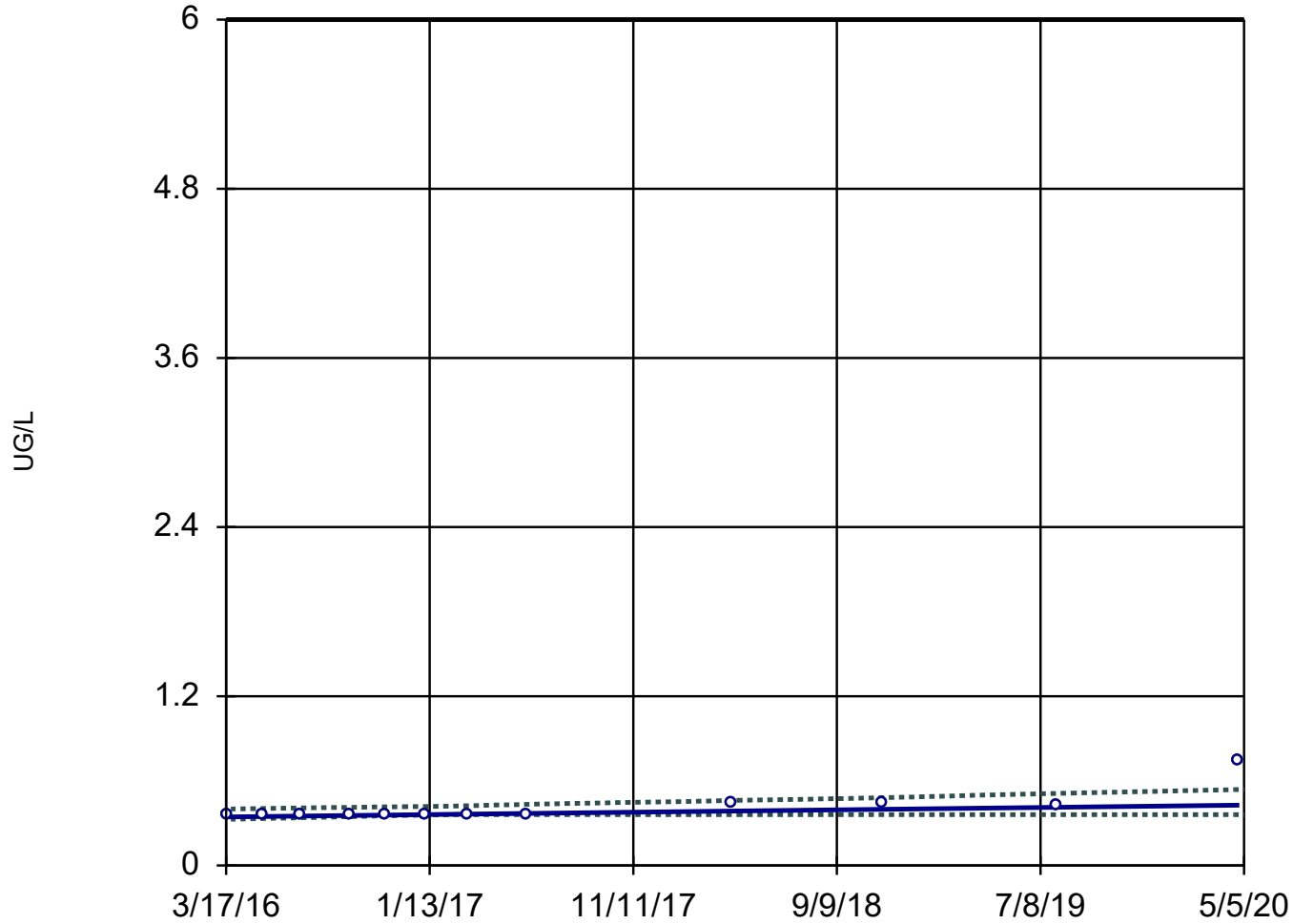
## Sen's Slope and 95% Confidence Band

S-UMW-4D



## Sen's Slope and 95% Confidence Band

S-UMW-1D



n = 12

Slope = 0.02017  
units per year.

Mann-Kendall  
statistic = 45  
critical = 35

Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

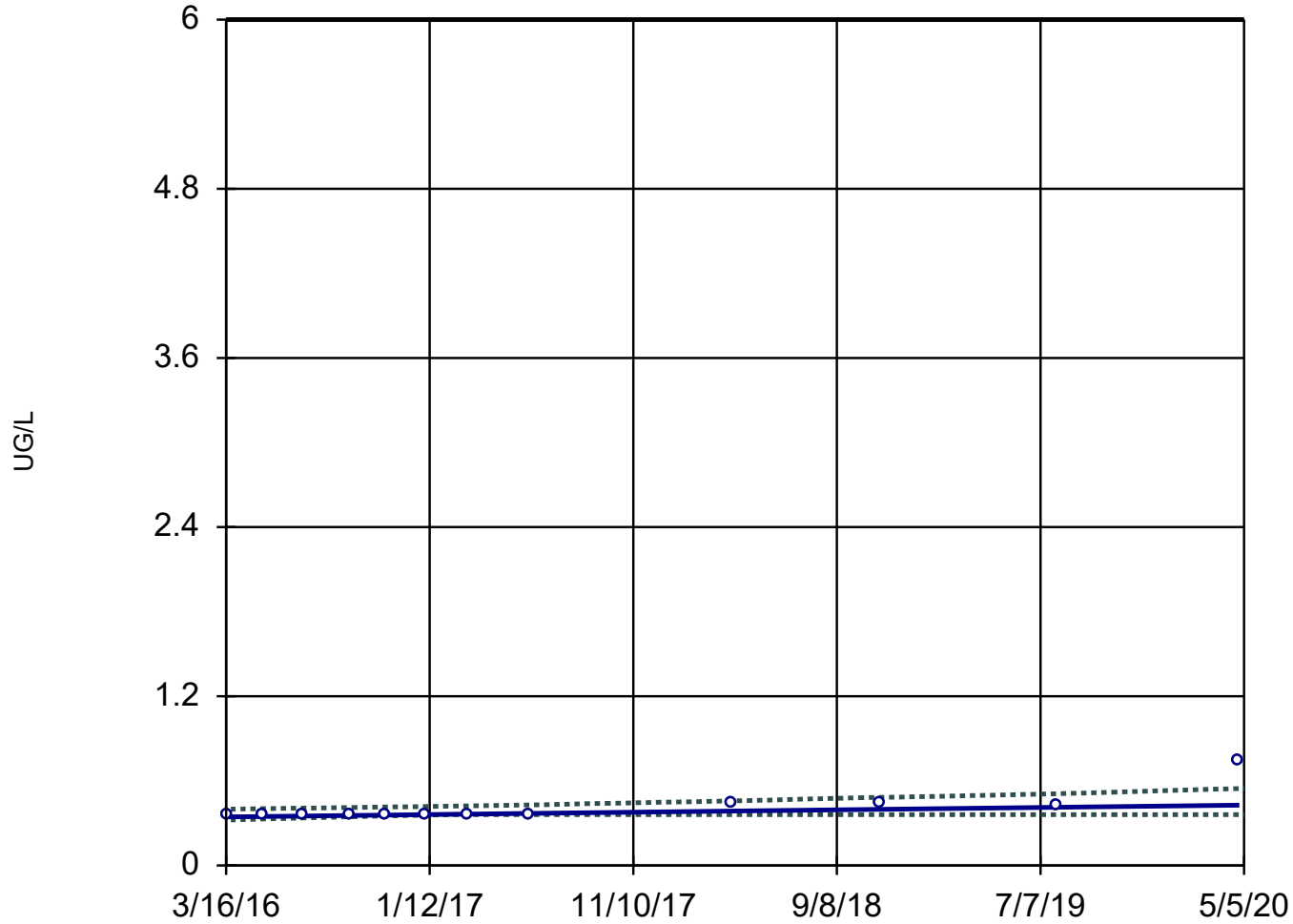
GWPS = 6.

Constituent: COBALT, TOTAL Analysis Run 7/8/2020 4:45 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_

## Sen's Slope and 95% Confidence Band

S-UMW-2D



n = 12

Slope = 0.02019  
units per year.

Mann-Kendall  
statistic = 45  
critical = 35

Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

GWPS = 6.

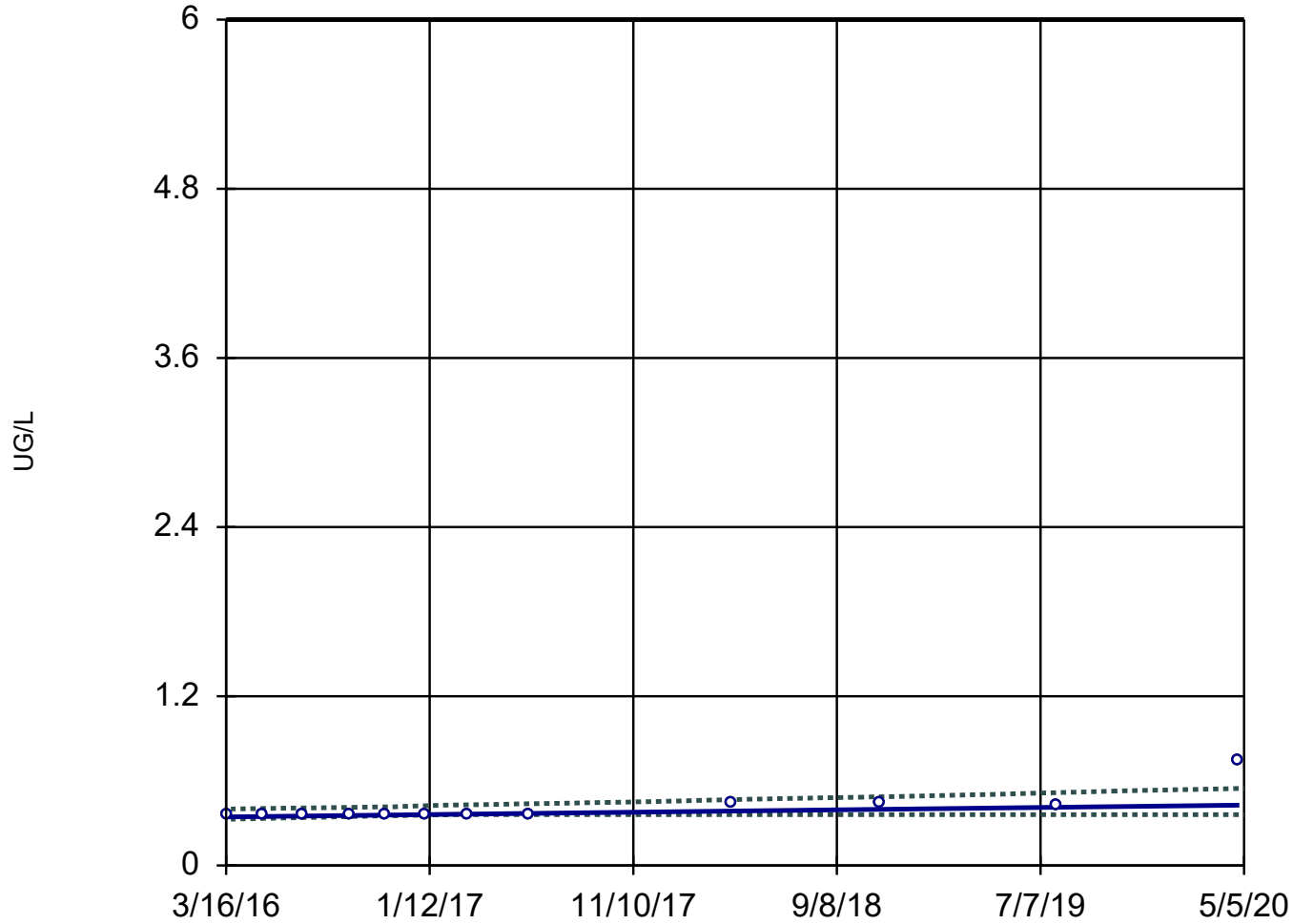
Constituent: COBALT, TOTAL Analysis Run 7/8/2020 4:45 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_



## Sen's Slope and 95% Confidence Band

S-UMW-3D



n = 12

Slope = 0.02019  
units per year.

Mann-Kendall  
statistic = 45  
critical = 35

Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

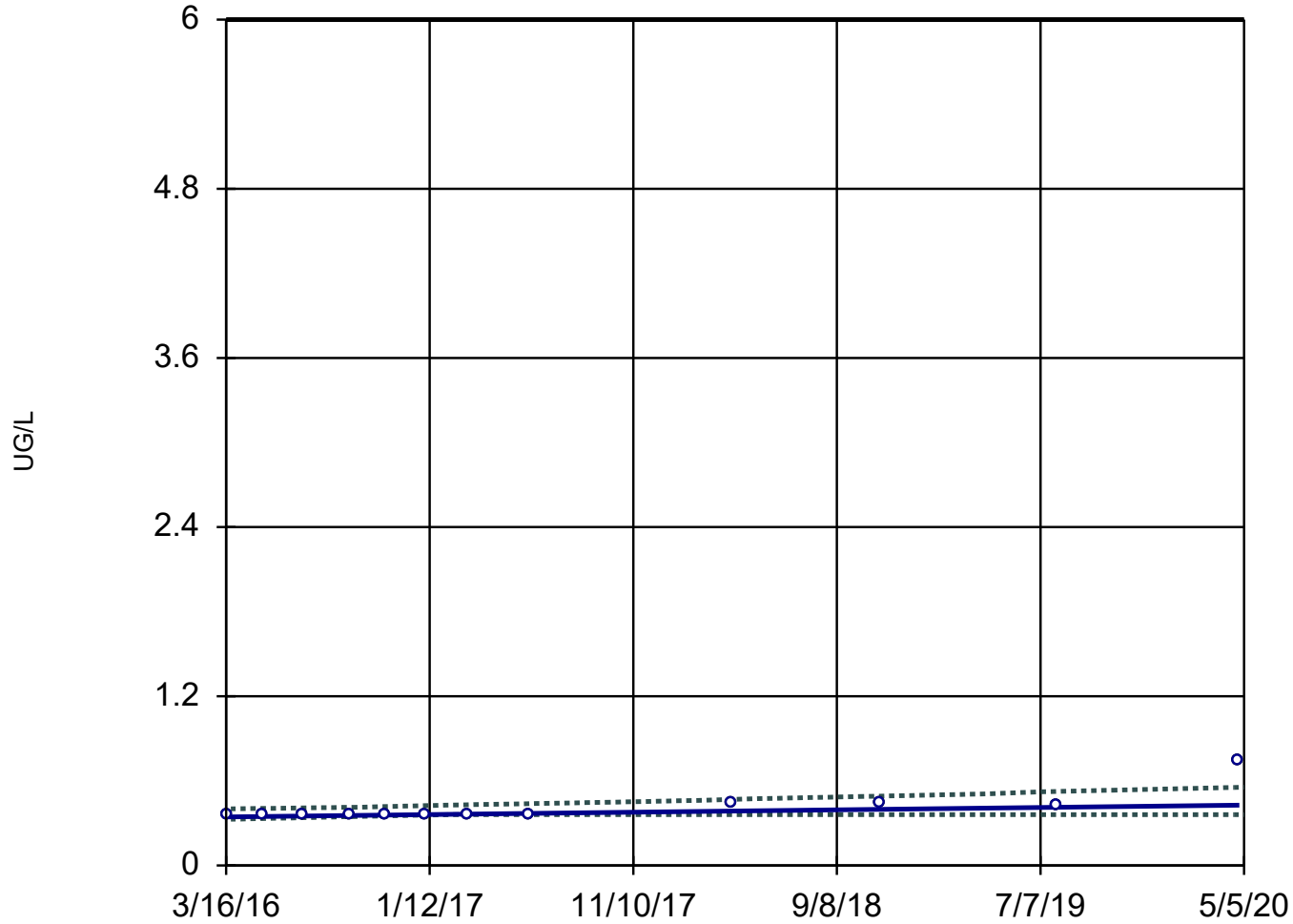
GWPS = 6.

Constituent: COBALT, TOTAL Analysis Run 7/8/2020 4:45 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_

## Sen's Slope and 95% Confidence Band

S-UMW-4D



n = 12

Slope = 0.02019  
units per year.

Mann-Kendall  
statistic = 45  
critical = 35

Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

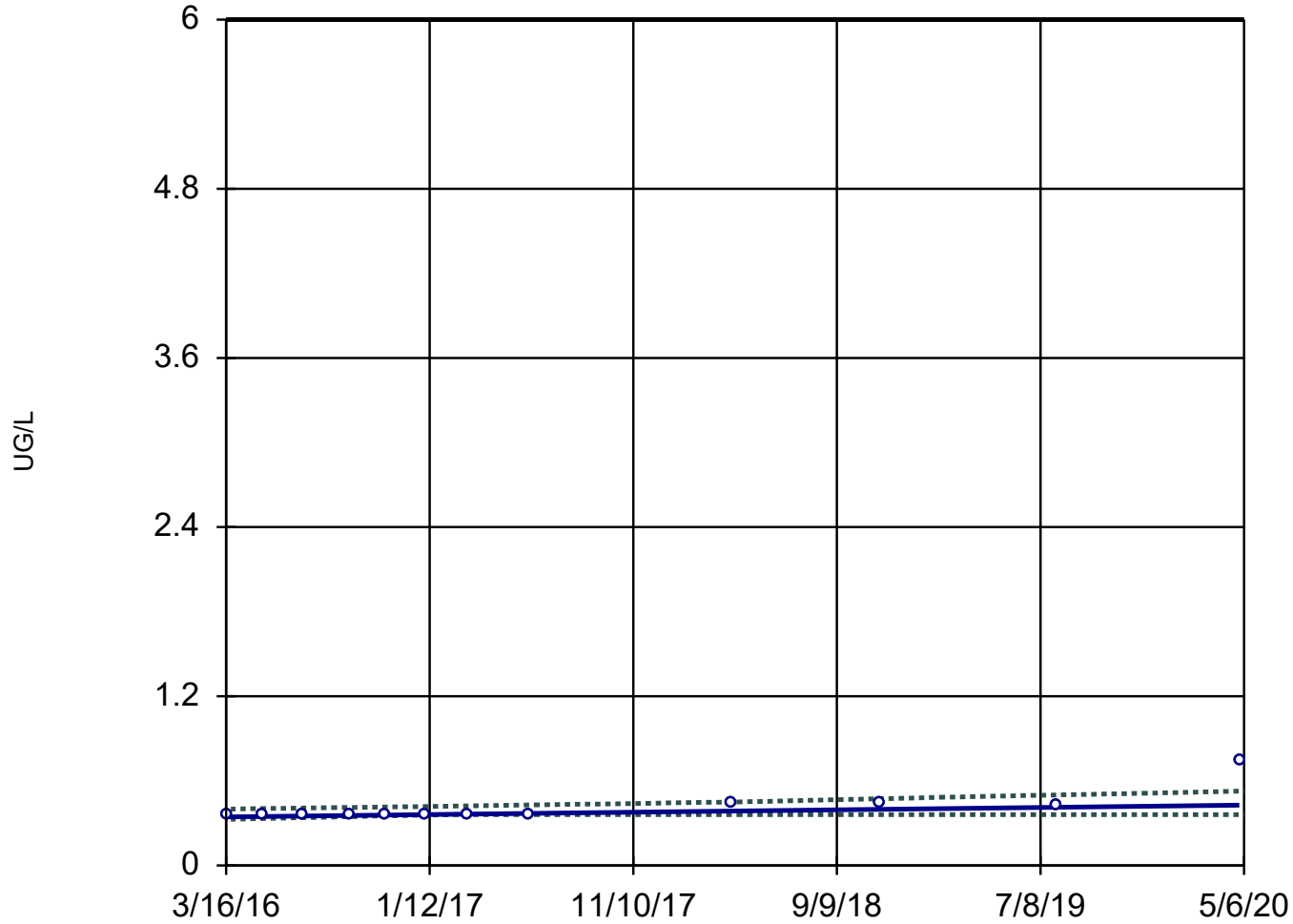
GWPS = 6.

Constituent: COBALT, TOTAL Analysis Run 7/8/2020 4:45 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_

## Sen's Slope and 95% Confidence Band

S-UMW-5D



n = 12

Slope = 0.0202  
units per year.

Mann-Kendall  
statistic = 45  
critical = 35

Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

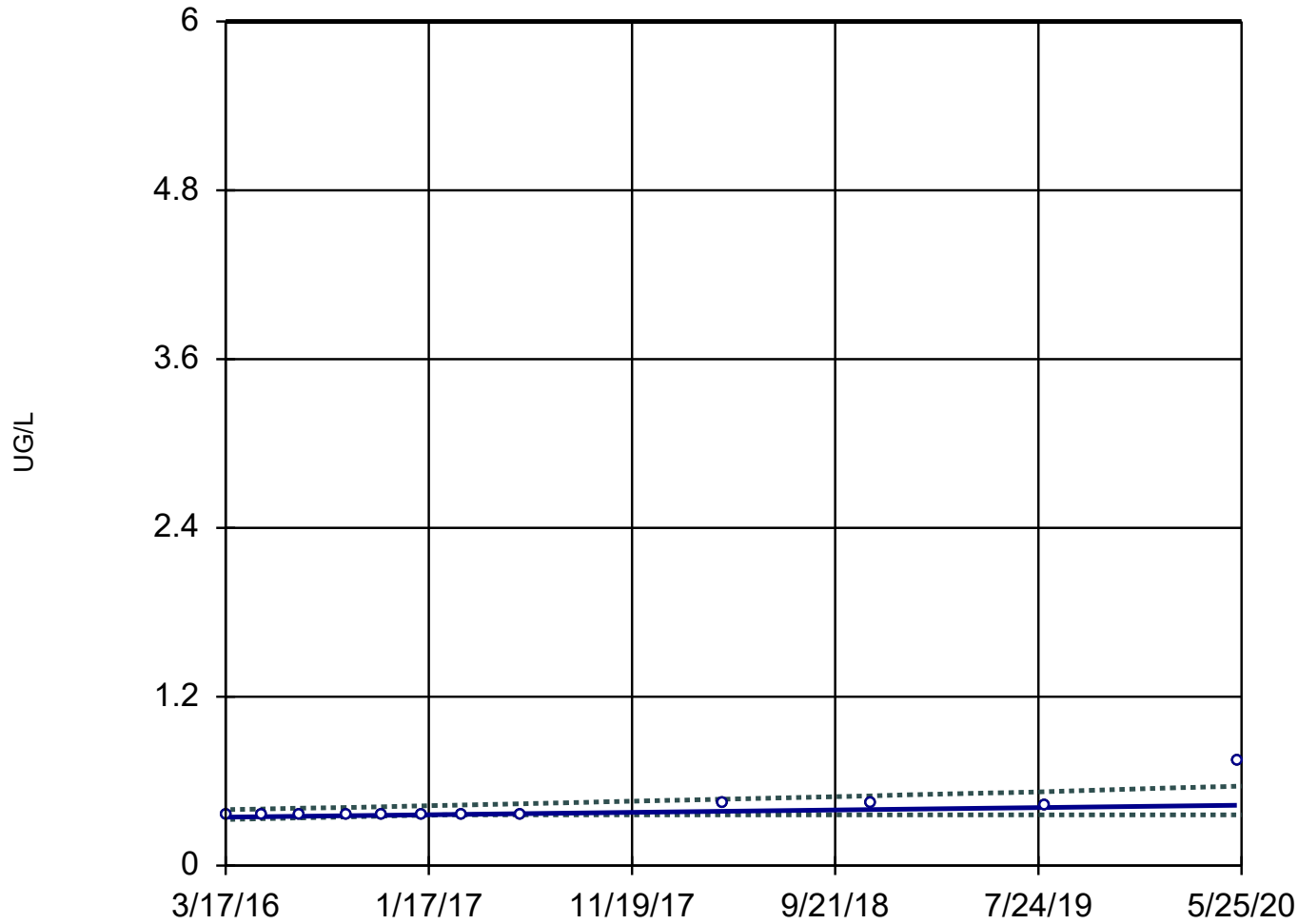
GWPS = 6.

Constituent: COBALT, TOTAL Analysis Run 7/8/2020 4:45 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_

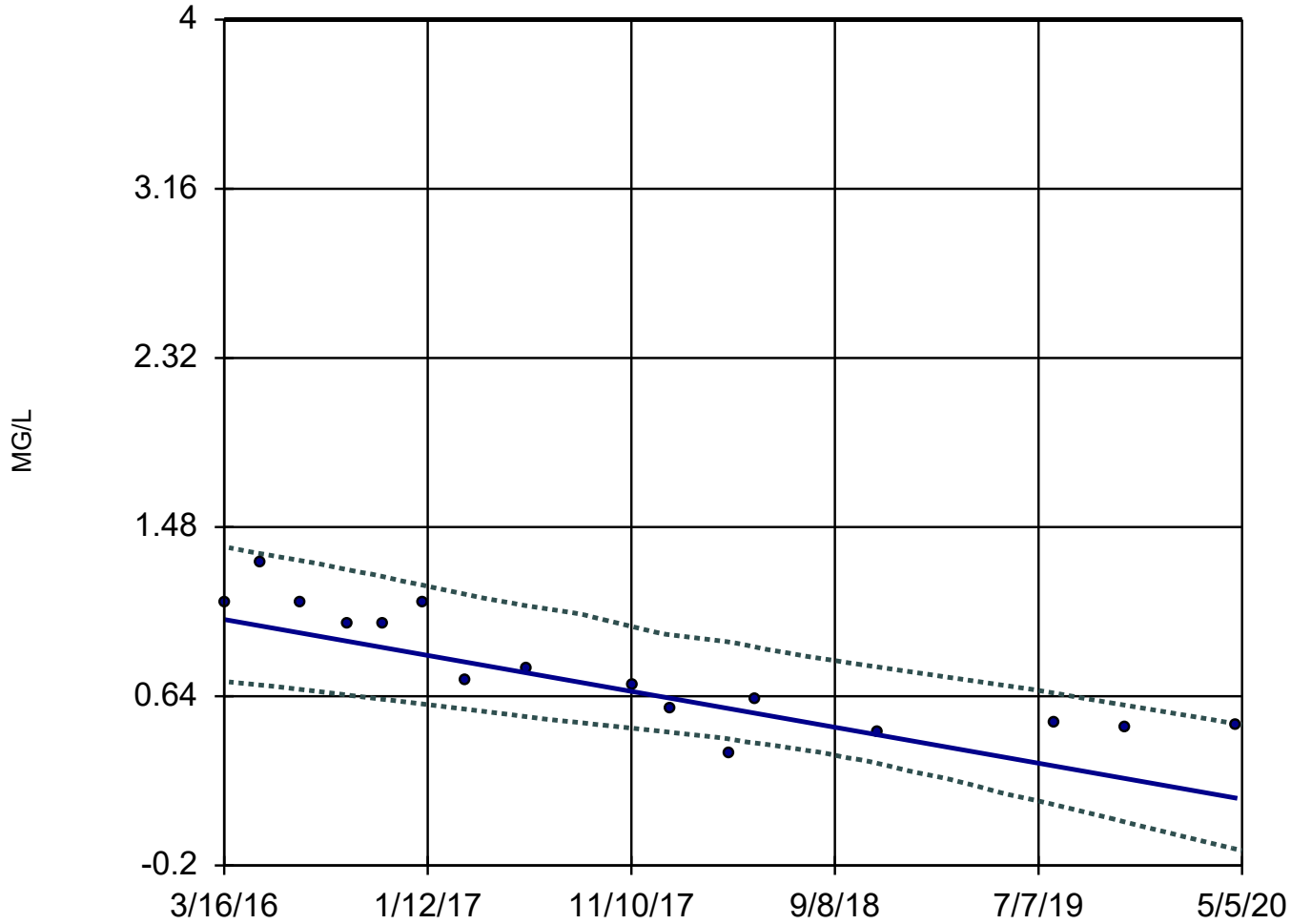
## Sen's Slope and 95% Confidence Band

S-UMW-6D



### Sen's Slope and 95% Confidence Band

S-UMW-2D



n = 16

Slope = -0.2153  
units per year.

Mann-Kendall  
statistic = -88  
critical = -53

Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

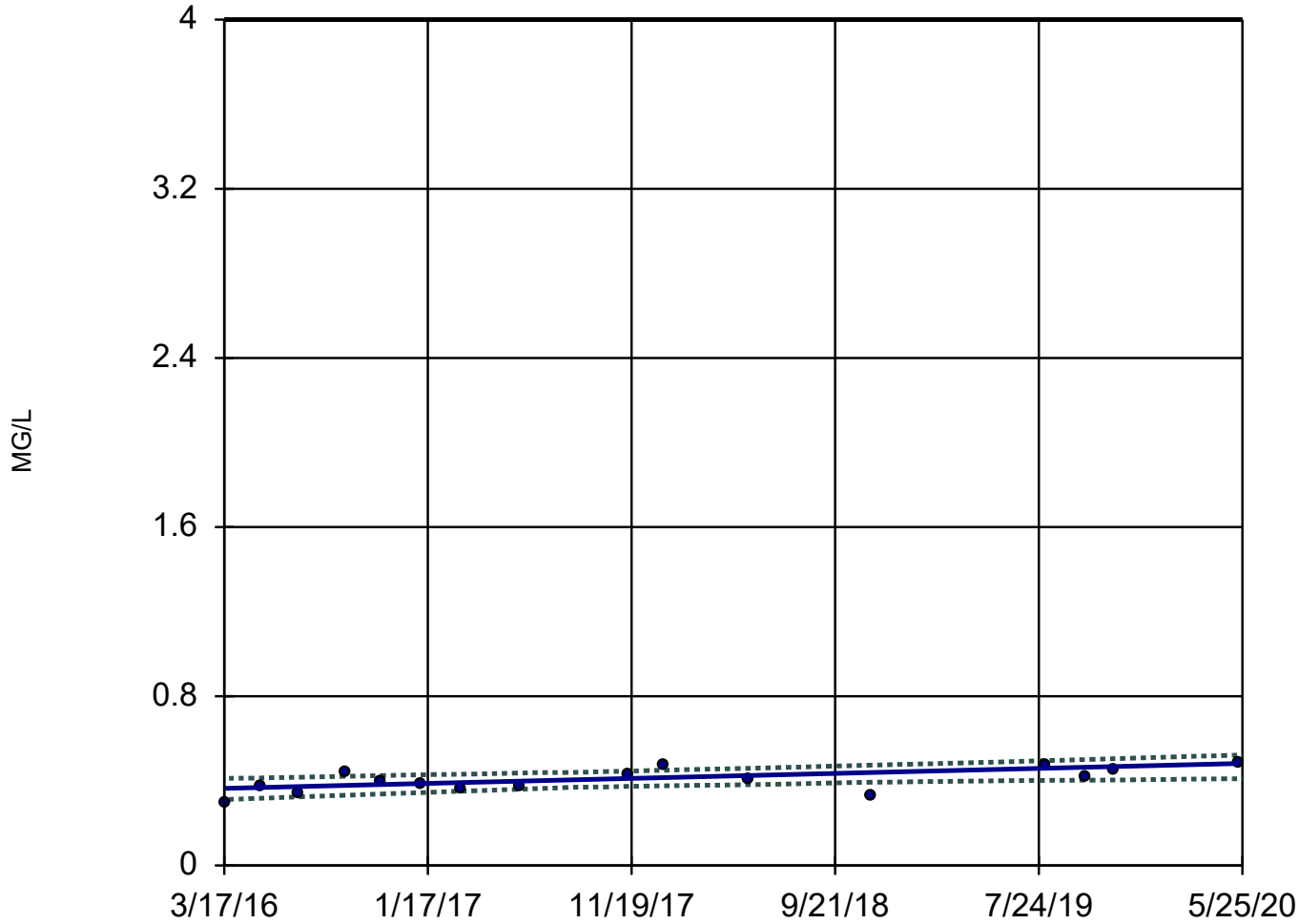
GWPS = 4.

Constituent: FLUORIDE, TOTAL Analysis Run 7/8/2020 4:45 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_

## Sen's Slope and 95% Confidence Band

S-UMW-6D



n = 16

Slope = 0.02812  
units per year.

Mann-Kendall  
statistic = 56  
critical = 53

Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

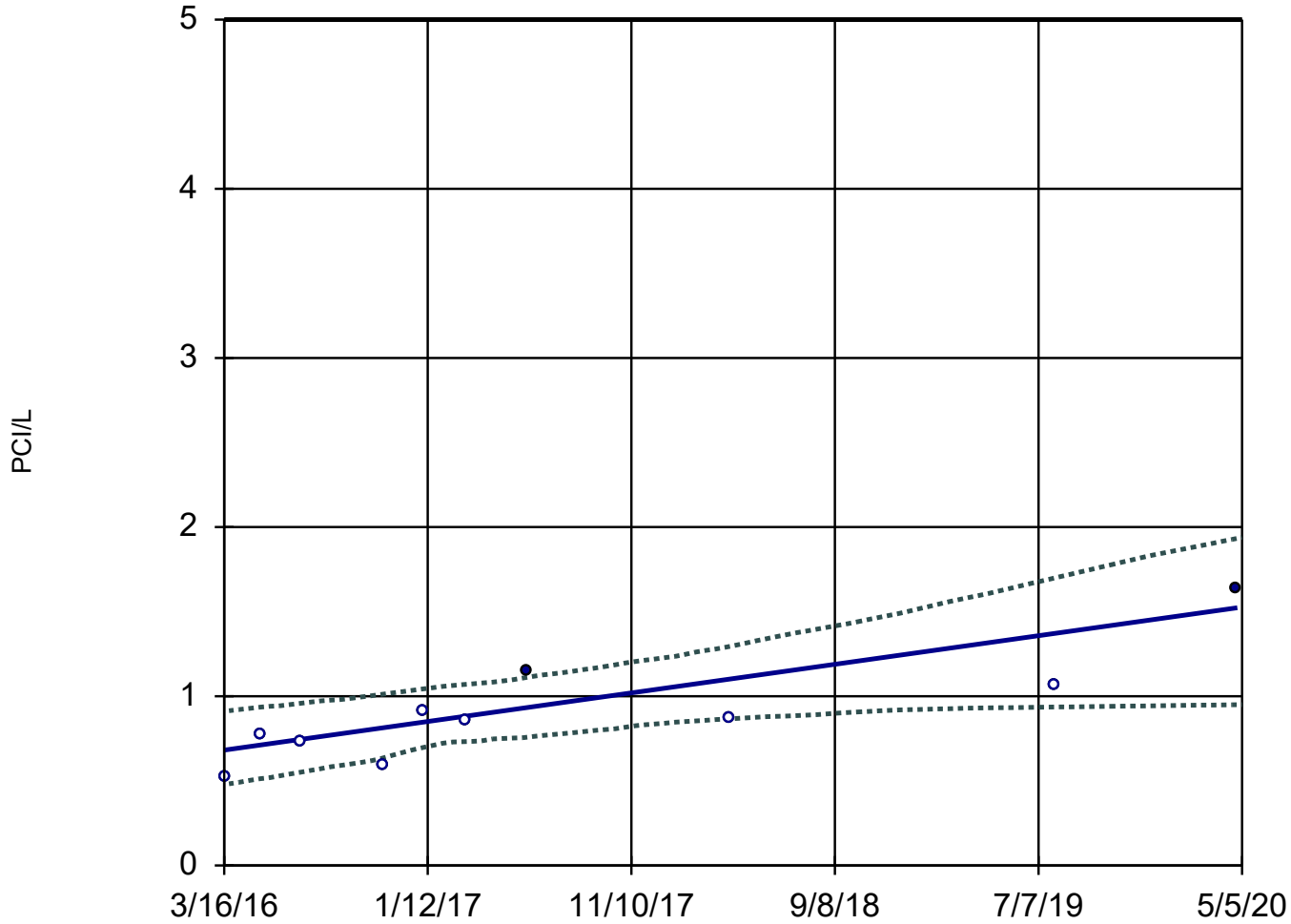
GWPS = 4.

Constituent: FLUORIDE, TOTAL Analysis Run 7/8/2020 4:45 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_

## Sen's Slope and 95% Confidence Band

S-UMW-3D



n = 10

Slope = 0.2041  
units per year.

Mann-Kendall  
statistic = 31  
critical = 27

Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

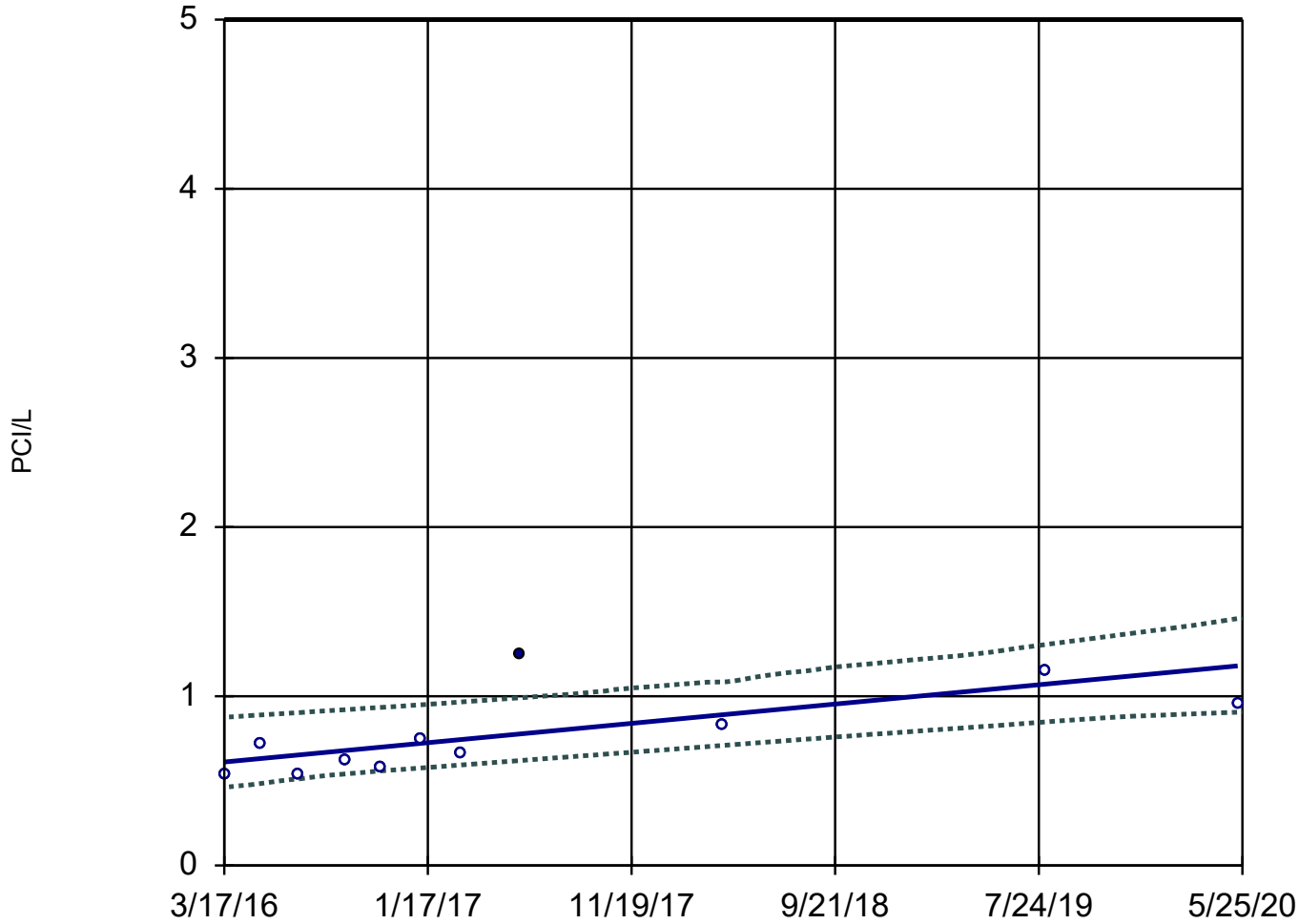
GWPS = 5.

Constituent: RADIUM [226 + 228] Analysis Run 7/8/2020 4:46 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_

## Sen's Slope and 95% Confidence Band

S-UMW-6D



n = 11

Slope = 0.1362  
units per year.

Mann-Kendall  
statistic = 34  
critical = 31

Increasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

GWPS = 5.

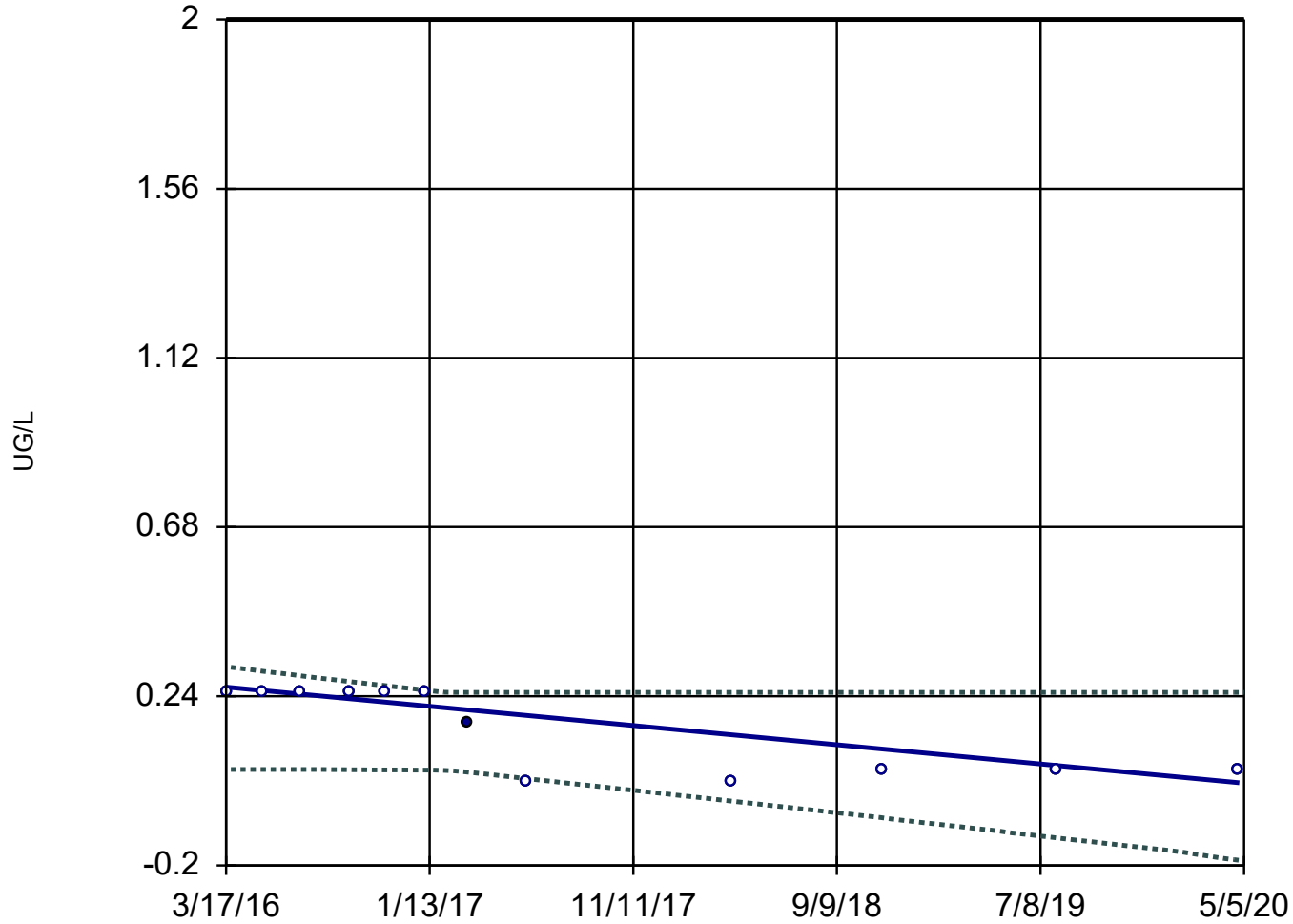
Constituent: RADIUM [226 + 228] Analysis Run 7/8/2020 4:46 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_



### Sen's Slope and 95% Confidence Band

S-UMW-1D



n = 12

Slope = -0.0604  
units per year.

Mann-Kendall  
statistic = -37  
critical = -35

Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

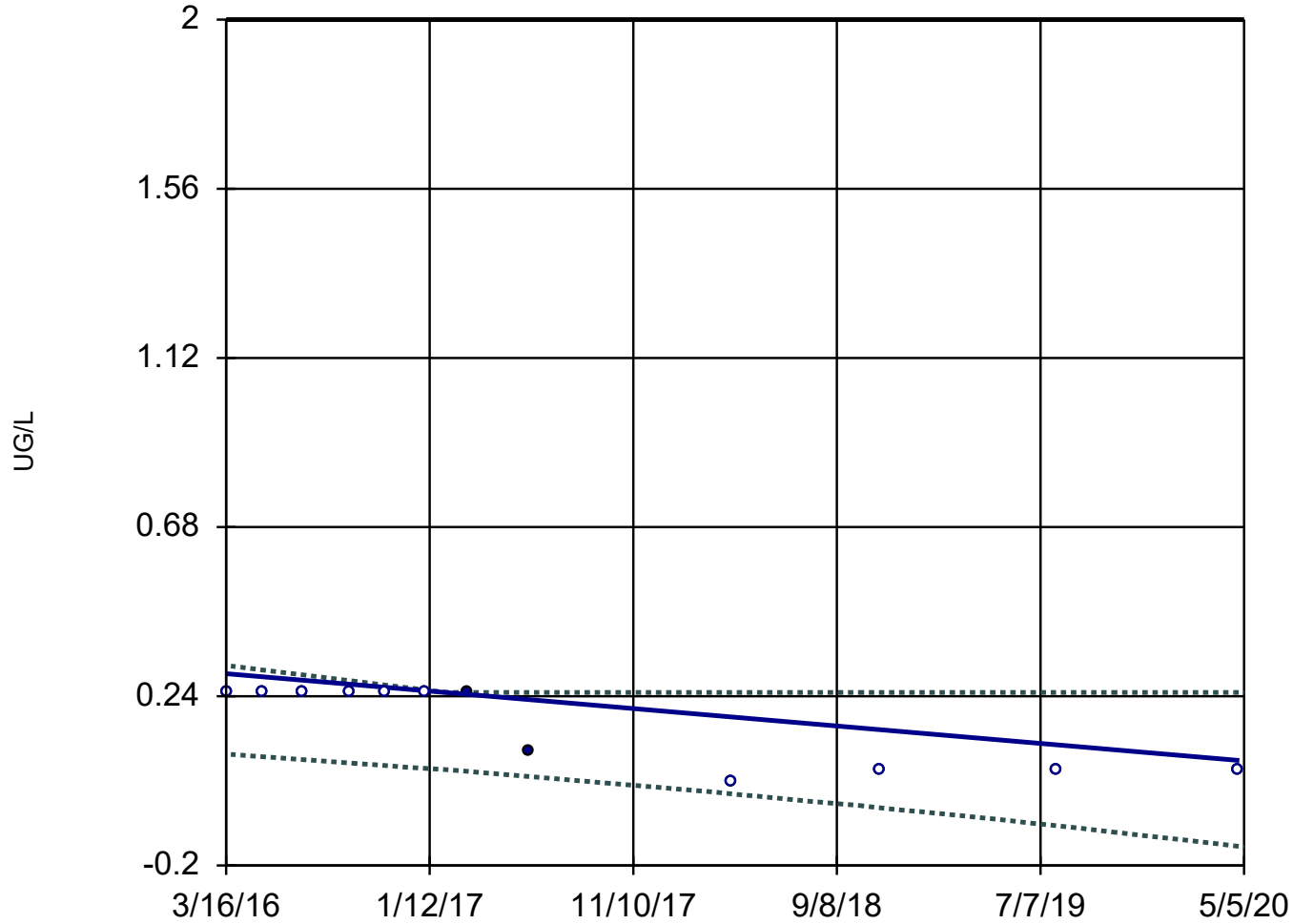
GWPS = 2.

Constituent: THALLIUM, TOTAL Analysis Run 7/8/2020 4:46 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_

### Sen's Slope and 95% Confidence Band

S-UMW-2D



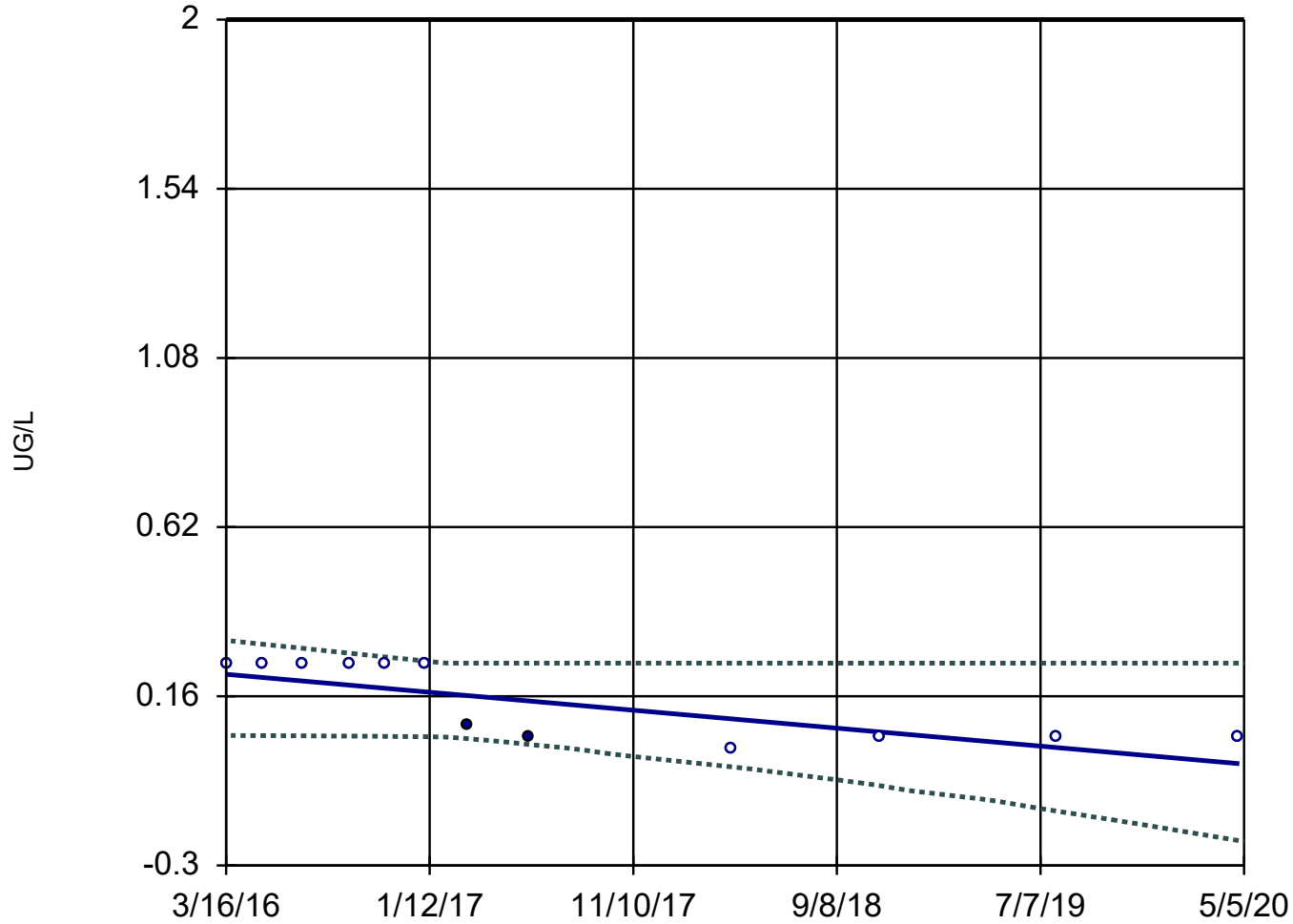
n = 12  
Slope = -0.05477  
units per year.  
Mann-Kendall  
statistic = -38  
critical = -35  
Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).  
GWPS = 2.

Constituent: THALLIUM, TOTAL Analysis Run 7/8/2020 4:46 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_

### Sen's Slope and 95% Confidence Band

S-UMW-3D



n = 12

Slope = -0.05897  
units per year.

Mann-Kendall  
statistic = -44  
critical = -35

Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

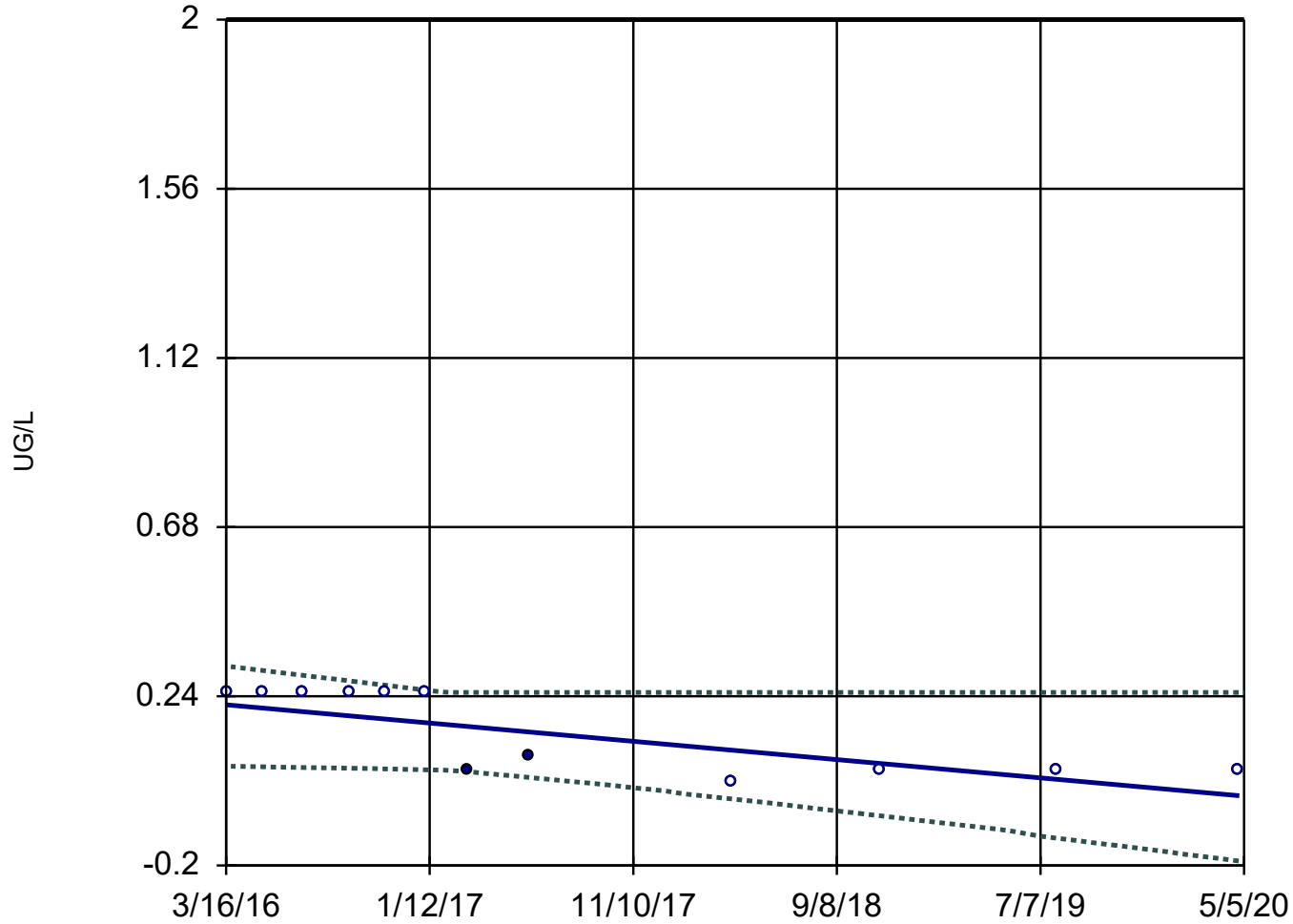
GWPS = 2.

Constituent: THALLIUM, TOTAL Analysis Run 7/8/2020 4:46 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_

### Sen's Slope and 95% Confidence Band

S-UMW-4D



n = 12

Slope = -0.05738  
units per year.

Mann-Kendall  
statistic = -36  
critical = -35

Decreasing trend  
significant at 98%  
confidence level  
( $\alpha = 0.01$  per  
tail).

GWPS = 2.

Constituent: THALLIUM, TOTAL Analysis Run 7/8/2020 4:46 PM

Sioux E.C. Client: Ameren Data: SEC DATA\_

# Trend Test

Sioux E.C. Client: Ameren Data: SEC DATA\_ Printed 7/8/2020, 4:47 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
ANTIMONY, TOTAL (UG/L)	S-UMW-1D	-0.01759	-19	-35	No	12	41.67	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	S-UMW-2D	0	5	35	No	12	58.33	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	S-UMW-3D	0	0	35	No	12	75	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	S-UMW-4D	0.002431	19	35	No	12	91.67	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	S-UMW-5D	0	11	35	No	12	100	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	S-UMW-6D	0	11	35	No	12	100	n/a	n/a	0.02	NP
<b>ARSENIC, TOTAL (UG/L)</b>	<b>S-UMW-1D</b>	<b>0.1776</b>	<b>60</b>	<b>44</b>	<b>Yes</b>	<b>14</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>ARSENIC, TOTAL (UG/L)</b>	<b>S-UMW-2D</b>	<b>0.6465</b>	<b>76</b>	<b>44</b>	<b>Yes</b>	<b>14</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
ARSENIC, TOTAL (UG/L)	S-UMW-3D	-0.08532	-13	-39	No	13	7.692	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-UMW-4D	-0.04129	-5	-39	No	13	23.08	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-UMW-5D	-0.0819	-33	-44	No	14	7.143	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-UMW-6D	0.03264	20	39	No	13	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-UMW-1D	-9.057	-35	-44	No	14	0	n/a	n/a	0.02	NP
<b>BARIUM, TOTAL (UG/L)</b>	<b>S-UMW-2D</b>	<b>-15.4</b>	<b>-49</b>	<b>-44</b>	<b>Yes</b>	<b>14</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
BARIUM, TOTAL (UG/L)	S-UMW-3D	-0.5931	-15	-44	No	14	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-UMW-4D	-7.258	-41	-44	No	14	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-UMW-5D	-13.23	-12	-44	No	14	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-UMW-6D	1.42	5	39	No	13	0	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	S-UMW-1D	0	-15	-35	No	12	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	S-UMW-2D	0	-15	-35	No	12	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	S-UMW-3D	0	-11	-31	No	11	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	S-UMW-4D	0	-15	-35	No	12	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	S-UMW-5D	0	-15	-35	No	12	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	S-UMW-6D	0	-15	-35	No	12	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-UMW-1D	0.000821	20	35	No	12	83.33	n/a	n/a	0.02	NP
<b>CADMIUM, TOTAL (UG/L)</b>	<b>S-UMW-2D</b>	<b>0.0962</b>	<b>50</b>	<b>39</b>	<b>Yes</b>	<b>13</b>	<b>46.15</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>CADMIUM, TOTAL (UG/L)</b>	<b>S-UMW-3D</b>	<b>0.3882</b>	<b>47</b>	<b>39</b>	<b>Yes</b>	<b>13</b>	<b>30.77</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>CADMIUM, TOTAL (UG/L)</b>	<b>S-UMW-4D</b>	<b>0.669</b>	<b>48</b>	<b>39</b>	<b>Yes</b>	<b>13</b>	<b>30.77</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
CADMIUM, TOTAL (UG/L)	S-UMW-5D	0.02975	37	39	No	13	53.85	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-UMW-6D	0.0033	27	39	No	13	69.23	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	S-UMW-1D	-0.03811	-13	-35	No	12	41.67	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	S-UMW-2D	-0.06279	-33	-35	No	12	41.67	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	S-UMW-3D	-0.06109	-19	-35	No	12	50	n/a	n/a	0.02	NP
<b>CHROMIUM, TOTAL (UG/L)</b>	<b>S-UMW-4D</b>	<b>-0.07616</b>	<b>-36</b>	<b>-35</b>	<b>Yes</b>	<b>12</b>	<b>58.33</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
CHROMIUM, TOTAL (UG/L)	S-UMW-5D	-0.1341	-27	-35	No	12	50	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	S-UMW-6D	-0.06946	-24	-35	No	12	58.33	n/a	n/a	0.02	NP
<b>COBALT, TOTAL (UG/L)</b>	<b>S-UMW-1D</b>	<b>0.02017</b>	<b>45</b>	<b>35</b>	<b>Yes</b>	<b>12</b>	<b>100</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>COBALT, TOTAL (UG/L)</b>	<b>S-UMW-2D</b>	<b>0.02019</b>	<b>45</b>	<b>35</b>	<b>Yes</b>	<b>12</b>	<b>100</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>COBALT, TOTAL (UG/L)</b>	<b>S-UMW-3D</b>	<b>0.02019</b>	<b>45</b>	<b>35</b>	<b>Yes</b>	<b>12</b>	<b>100</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>COBALT, TOTAL (UG/L)</b>	<b>S-UMW-4D</b>	<b>0.02019</b>	<b>45</b>	<b>35</b>	<b>Yes</b>	<b>12</b>	<b>100</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>COBALT, TOTAL (UG/L)</b>	<b>S-UMW-5D</b>	<b>0.0202</b>	<b>45</b>	<b>35</b>	<b>Yes</b>	<b>12</b>	<b>100</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>COBALT, TOTAL (UG/L)</b>	<b>S-UMW-6D</b>	<b>0.0202</b>	<b>45</b>	<b>35</b>	<b>Yes</b>	<b>12</b>	<b>100</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
FLUORIDE, TOTAL (MG/L)	S-UMW-1D	-0.00231	-8	-53	No	16	0	n/a	n/a	0.02	NP
<b>FLUORIDE, TOTAL (MG/L)</b>	<b>S-UMW-2D</b>	<b>-0.2153</b>	<b>-88</b>	<b>-53</b>	<b>Yes</b>	<b>16</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
FLUORIDE, TOTAL (MG/L)	S-UMW-3D	-0.01484	-20	-48	No	15	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-UMW-4D	-0.0265	-23	-48	No	15	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-UMW-5D	0.03214	14	53	No	16	0	n/a	n/a	0.02	NP
<b>FLUORIDE, TOTAL (MG/L)</b>	<b>S-UMW-6D</b>	<b>0.02812</b>	<b>56</b>	<b>53</b>	<b>Yes</b>	<b>16</b>	<b>0</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
LEAD, TOTAL (UG/L)	S-UMW-1D	0.09987	14	35	No	12	91.67	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	S-UMW-2D	0.1108	15	35	No	12	83.33	n/a	n/a	0.02	NP

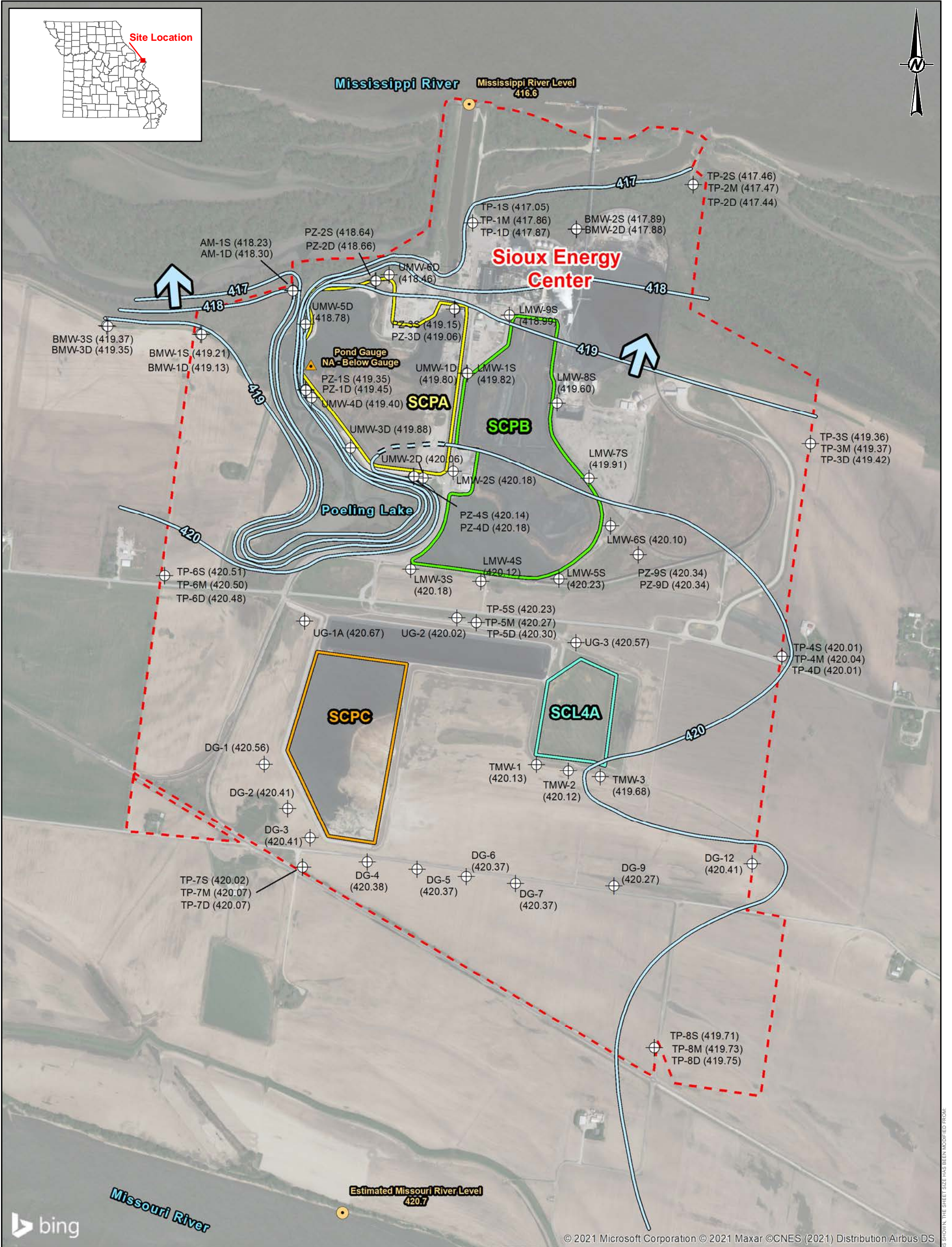
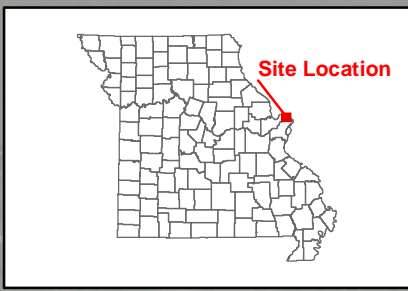
## Trend Test

Sioux E.C. Client: Ameren Data: SEC DATA\_ Printed 7/8/2020, 4:47 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>
LEAD, TOTAL (UG/L)	S-UMW-3D	-0.2732	-12	-35	No	12	58.33	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	S-UMW-4D	0.1028	4	35	No	12	50	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	S-UMW-5D	-0.07761	-9	-35	No	12	75	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	S-UMW-6D	0.09999	14	35	No	12	91.67	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-1D	-0.5185	-19	-44	No	14	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-2D	-2.673	-34	-44	No	14	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-3D	-0.08469	-5	-44	No	14	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-4D	-1.488	-34	-44	No	14	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-5D	-1.326	-26	-44	No	14	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-6D	0.6577	18	44	No	14	0	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	S-UMW-1D	0.002393	20	31	No	11	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	S-UMW-2D	0.002393	20	31	No	11	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	S-UMW-3D	0.002393	20	31	No	11	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	S-UMW-4D	0.002393	20	31	No	11	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	S-UMW-5D	0.00423	20	31	No	11	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	S-UMW-6D	0.00236	20	31	No	11	100	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-UMW-1D	-3.369	-42	-44	No	14	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-UMW-2D	-80.22	-12	-44	No	14	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-UMW-3D	-176.2	-32	-44	No	14	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-UMW-4D	-905.8	-31	-44	No	14	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-UMW-5D	4.888	3	44	No	14	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-UMW-6D	-6.138	-27	-44	No	14	0	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-UMW-1D	-0.00...	-1	-31	No	11	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-UMW-2D	0.03004	9	27	No	10	100	n/a	n/a	0.02	NP
<b>RADIUM [226 + 228] (PCI/L)</b>	<b>S-UMW-3D</b>	<b>0.2041</b>	<b>31</b>	<b>27</b>	<b>Yes</b>	<b>10</b>	<b>80</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
RADIUM [226 + 228] (PCI/L)	S-UMW-4D	0.04685	13	27	No	10	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-UMW-5D	0.01659	1	31	No	11	72.73	n/a	n/a	0.02	NP
<b>RADIUM [226 + 228] (PCI/L)</b>	<b>S-UMW-6D</b>	<b>0.1362</b>	<b>34</b>	<b>31</b>	<b>Yes</b>	<b>11</b>	<b>90.91</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
SELENIUM, TOTAL (UG/L)	S-UMW-1D	0	-14	-35	No	12	91.67	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-UMW-2D	0	15	35	No	12	66.67	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-UMW-3D	-0.01118	-13	-35	No	12	16.67	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-UMW-4D	-0.01863	-12	-35	No	12	25	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-UMW-5D	-0.00...	-8	-35	No	12	25	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-UMW-6D	-0.00...	-31	-35	No	12	100	n/a	n/a	0.02	NP
<b>THALLIUM, TOTAL (UG/L)</b>	<b>S-UMW-1D</b>	<b>-0.0604</b>	<b>-37</b>	<b>-35</b>	<b>Yes</b>	<b>12</b>	<b>91.67</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>THALLIUM, TOTAL (UG/L)</b>	<b>S-UMW-2D</b>	<b>-0.05477</b>	<b>-38</b>	<b>-35</b>	<b>Yes</b>	<b>12</b>	<b>83.33</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>THALLIUM, TOTAL (UG/L)</b>	<b>S-UMW-3D</b>	<b>-0.05897</b>	<b>-44</b>	<b>-35</b>	<b>Yes</b>	<b>12</b>	<b>83.33</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
<b>THALLIUM, TOTAL (UG/L)</b>	<b>S-UMW-4D</b>	<b>-0.05738</b>	<b>-36</b>	<b>-35</b>	<b>Yes</b>	<b>12</b>	<b>83.33</b>	<b>n/a</b>	<b>n/a</b>	<b>0.02</b>	<b>NP</b>
THALLIUM, TOTAL (UG/L)	S-UMW-5D	-0.05479	-29	-35	No	12	91.67	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	S-UMW-6D	-0.05404	-29	-35	No	12	100	n/a	n/a	0.02	NP

**APPENDIX D**

# 2020 Potentiometric Surface Maps



**LEGEND**

**Sioux Energy Center Property Boundary**

**CCR Units**

- SCPA - Bottom Ash Surface Impoundment
- SCPB - Fly Ash Surface Impoundment
- SCPC - WFGD Surface Impoundment
- SCL4A - Dry CCR Disposal Area

**Groundwater Flow Direction**

**Groundwater Elevation Contour (FT MSL)**

- Groundwater Elevation Contour (FT MSL)
- Inferred Groundwater
- Elevation Contour (FT MSL)

**Ground/Surface Water Measurement Locations**

- SCPA Bottom Ash Surface Impoundment Gauge
- River Gauge Location
- Monitoring Well or Piezometer

**NOTES**

- 1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
- 2.) GROUNDWATER AND SURFACE WATER ELEVATIONS DISPLAYED IN FEET ABOVE MEAN SEA LEVEL (FT MSL).
- 3.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDER.
- 4.) MISSOURI RIVER ELEVATION ESTIMATED BASED ON NEARBY UNITED STATES GEOLOGICAL SURVEY (USGS) RIVER GAUGING LOCATIONS.
- 5.) MISSISSIPPI RIVER ELEVATION PROVIDED BY AMEREN MISSOURI.

**REFERENCE**

- 1.) AMEREN MISSOURI SIOUX ENERGY CENTER, SIOUX PROPERTY CONTROL MAP, FEBRUARY 2011.
- 2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2,401 FEET.
- 3.) USGS NATIONAL WATER INFORMATION SYSTEM, USGS GAUGES 06935965 (ST. CHARLES), 07010000 (ST. LOUIS), 05587498 (ALTON), GRAFTON (05587450).

**Scale:** 0 500 1,000 1,500 2,000 Feet

**CLIENT**  
 AMEREN MISSOURI  
 SIOUX ENERGY CENTER

**PROJECT**  
 CCR GROUNDWATER MONITORING PROGRAM

**TITLE**  
 JANUARY 02, 2020 POTENTIOMETRIC SURFACE MAP

**CONSULTANT**

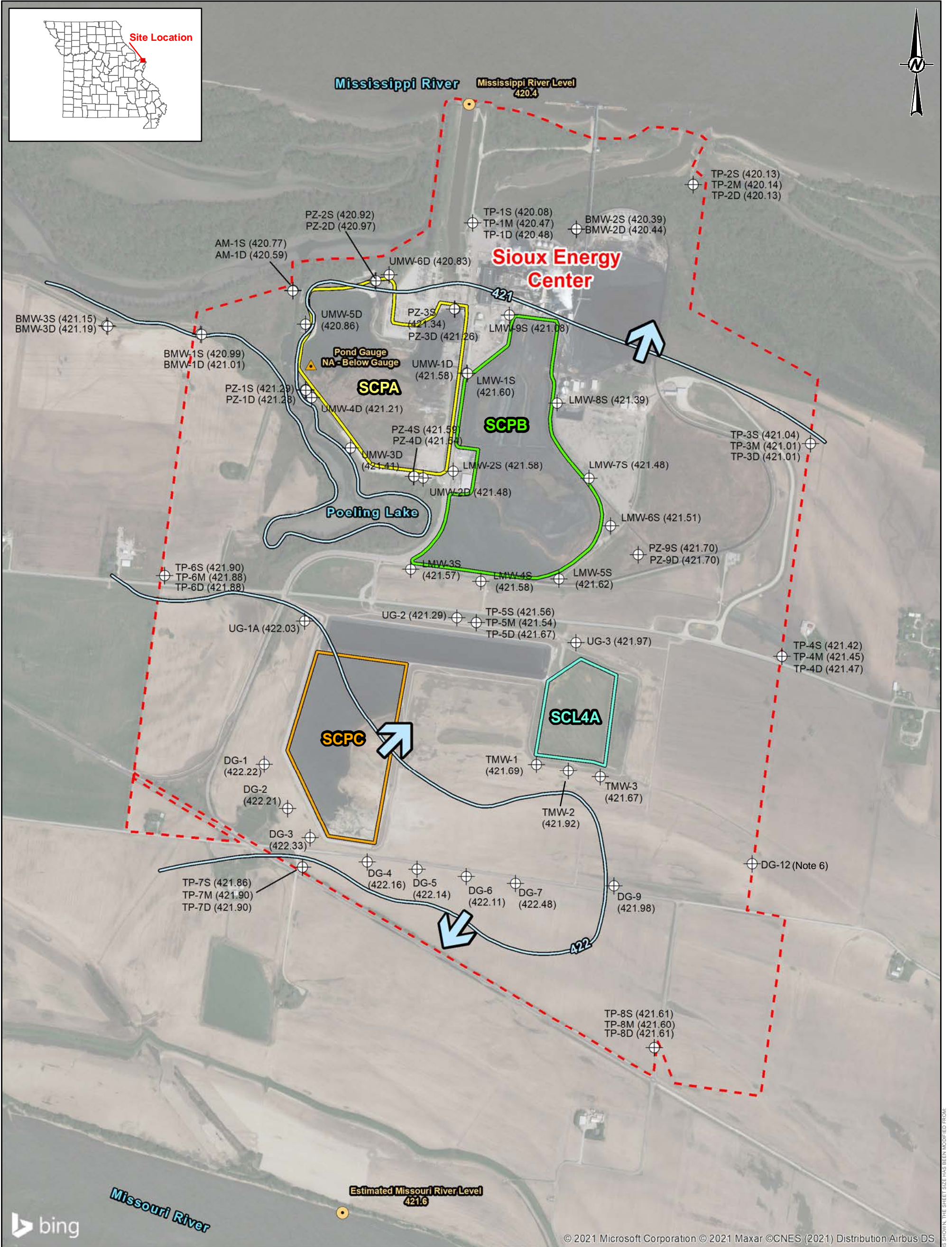
YYYY-MM-DD	2020-02-10
PREPARED	BTT
DESIGN	JSI
REVIEW	EMS
APPROVED	MNH

**PROJECT No.** 153-140602      **PHASE** 0003

**FIGURE D1**

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





**LEGEND**

**Sioux Energy Center Property Boundary**

**CCR Units**

- SCPA - Bottom Ash Surface Impoundment
- SCPB - Fly Ash Surface Impoundment
- SCPC - WFGD Surface Impoundment
- SCL4A - Dry CCR Disposal Area

**Groundwater Flow Direction**

**Groundwater Elevation Contour (FT MSL)**

- Groundwater Elevation Contour (FT MSL)
- Inferred Groundwater
- Elevation Contour (FT MSL)

**Ground/Surface Water Measurement Locations**

- SCPA Bottom Ash Surface Impoundment Gauge
- River Gauge Location
- Monitoring Well or Piezometer

**NOTES**

- 1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
- 2.) GROUNDWATER AND SURFACE WATER ELEVATIONS DISPLAYED IN FEET ABOVE MEAN SEA LEVEL (FT MSL).
- 3.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDER.
- 4.) MISSOURI RIVER ELEVATION ESTIMATED BASED ON NEARBY UNITED STATES GEOLOGICAL SURVEY (USGS) RIVER GAUGING LOCATIONS.
- 5.) MISSISSIPPI RIVER ELEVATION PROVIDED BY AMEREN MISSOURI.
- 6.) DG-12 WAS NOT USED FOR POTENTIOMETRIC SURFACE MAP CONTOURING DUE TO WATER LEVEL MEASUREMENT ERROR.

**REFERENCE**

- 1.) AMEREN MISSOURI SIOUX ENERGY CENTER, SIOUX PROPERTY CONTROL MAP, FEBRUARY 2011.
- 2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2,401 FEET.
- 3.) USGS NATIONAL WATER INFORMATION SYSTEM, USGS GAUGES 06935965 (ST. CHARLES), 07010000 (ST. LOUIS), 05587498 (ALTON), GRAFTON (05587450).

**Scale:** 0 500 1,000 1,500 2,000 Feet

**CLIENT**  
 AMEREN MISSOURI  
 SIOUX ENERGY CENTER

**PROJECT**  
 CCR GROUNDWATER MONITORING PROGRAM

**TITLE**  
 APRIL 22, 2020 POTENTIOMETRIC SURFACE MAP

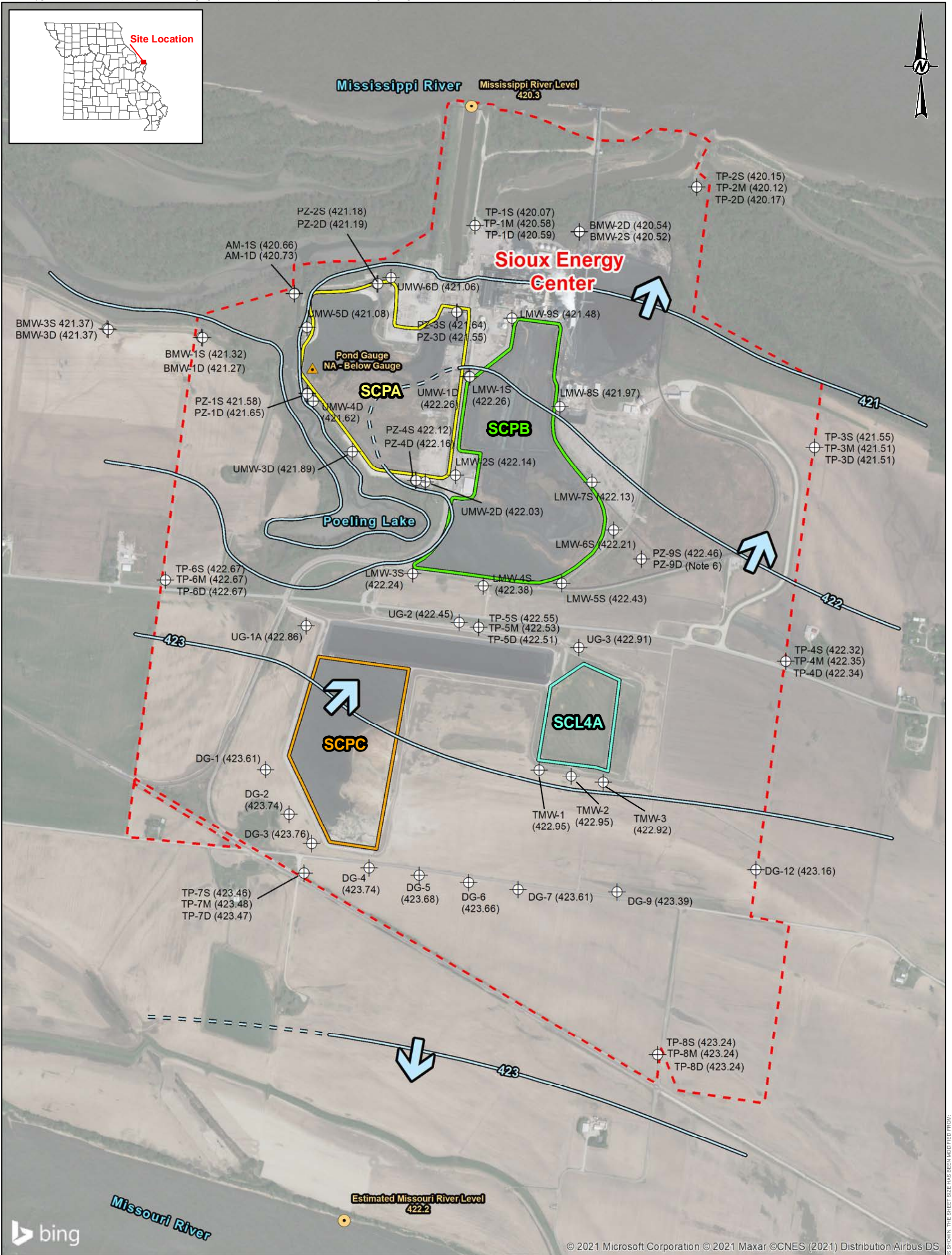
**CONSULTANT**

YYYY-MM-DD	2020-05-14
PREPARED	BTT
DESIGN	JSI
REVIEW	KAB
APPROVED	MNH

**PROJECT No.** 153-140602      **PHASE** 0003

**FIGURE** D2

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



© 2021 Microsoft Corporation © 2021 Maxar ©CNES (2021) Distribution Airbus DS

LEGEND	
	Sioux Energy Center Property Boundary
	SCPA - Bottom Ash Surface Impoundment
	SCPB - Fly Ash Surface Impoundment
	SCPC - WFGD Surface Impoundment
	SCL4A - Dry CCR Disposal Area
	Groundwater Flow Direction
	Groundwater Elevation Contour (FT MSL)
	Inferred Groundwater Elevation Contour (FT MSL)
	SCPA Bottom Ash Surface Impoundment Gauge
	River Gauge Location
	Monitoring Well or Piezometer

**NOTES**

- 1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
- 2.) GROUNDWATER AND SURFACE WATER ELEVATIONS DISPLAYED IN FEET ABOVE MEAN SEA LEVEL (FT MSL).
- 3.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDER.
- 4.) MISSOURI RIVER ELEVATION ESTIMATED BASED ON NEARBY UNITED STATES GEOLOGICAL SURVEY (USGS) RIVER GAUGING LOCATIONS.
- 5.) MISSISSIPPI RIVER ELEVATION PROVIDED BY AMEREN MISSOURI.
- 6.) PZ-9D WAS NOT USED FOR POTENTIOMETRIC SURFACE MAP CONTOURING DUE TO WATER LEVEL MEASUREMENT ERROR.

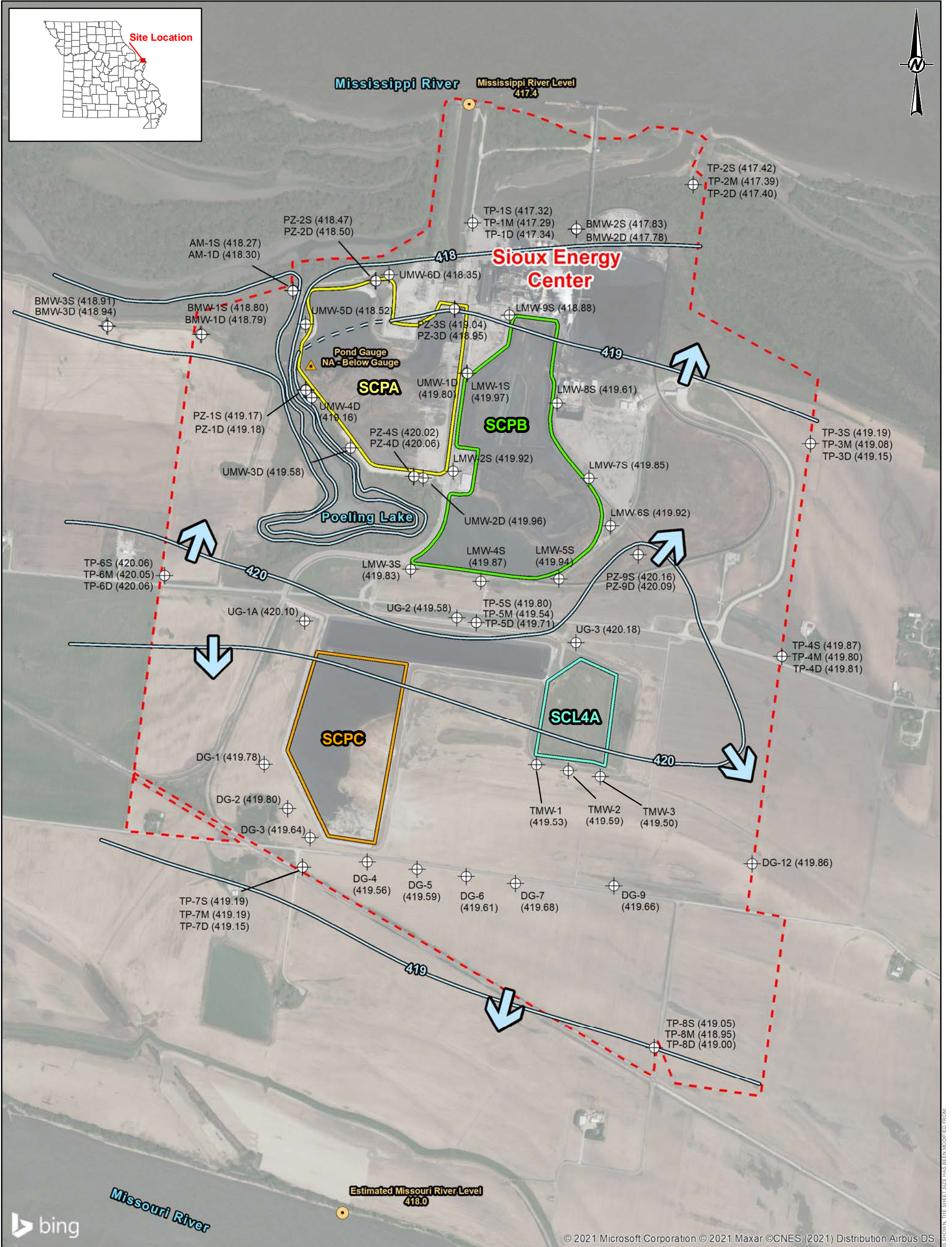
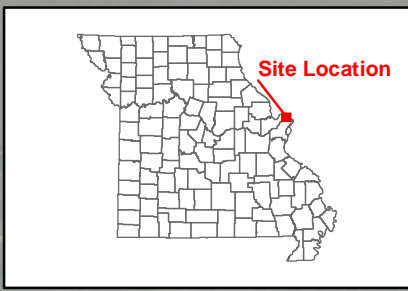
**REFERENCE**

- 1.) AMEREN MISSOURI SIOUX ENERGY CENTER, SIOUX PROPERTY CONTROL MAP, FEBRUARY 2011.
- 2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2,401 FEET.
- 3.) USGS NATIONAL WATER INFORMATION SYSTEM, USGS GAUGES 06935965 (ST. CHARLES), 07010000 (ST. LOUIS), 05587498 (ALTON), GRAFTON (05587450).

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

CLIENT <b>AMEREN MISSOURI SIOUX ENERGY CENTER</b>		
PROJECT <b>CCR GROUNDWATER MONITORING PROGRAM</b>		
TITLE <b>JUNE 15, 2020 POTENTIOMETRIC SURFACE MAP</b>		
CONSULTANT		YYYY-MM-DD 2020-06-24
PROJECT No.	PHASE	PREPARED BTT
153-140602	0003	DESIGN JSI
		REVIEW EMS
		APPROVED MNH
		FIGURE D3

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



**LEGEND**

	Sioux Energy Center Property Boundary
	SCPA - Bottom Ash Surface Impoundment
	SCPB - Fly Ash Surface Impoundment
	SCPC - WFGD Surface Impoundment
	SCL4A - Dry CCR Disposal Area
	Groundwater Flow Direction

	Groundwater Elevation Contour (FT MSL)
	Inferred Groundwater
	Elevation Contour (FT MSL)
	SCPA Bottom Ash Surface Impoundment Gauge
	River Gauge Location
	Monitoring Well or Piezometer

**NOTES**

- 1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
- 2.) GROUNDWATER AND SURFACE WATER ELEVATIONS DISPLAYED IN FEET ABOVE MEAN SEA LEVEL (FT MSL).
- 3.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDER.
- 4.) MISSOURI RIVER ELEVATION ESTIMATED BASED ON NEARBY UNITED STATES GEOLOGICAL SURVEY (USGS) RIVER GAUGING LOCATIONS.
- 5.) MISSISSIPPI RIVER ELEVATION PROVIDED BY AMEREN MISSOURI.

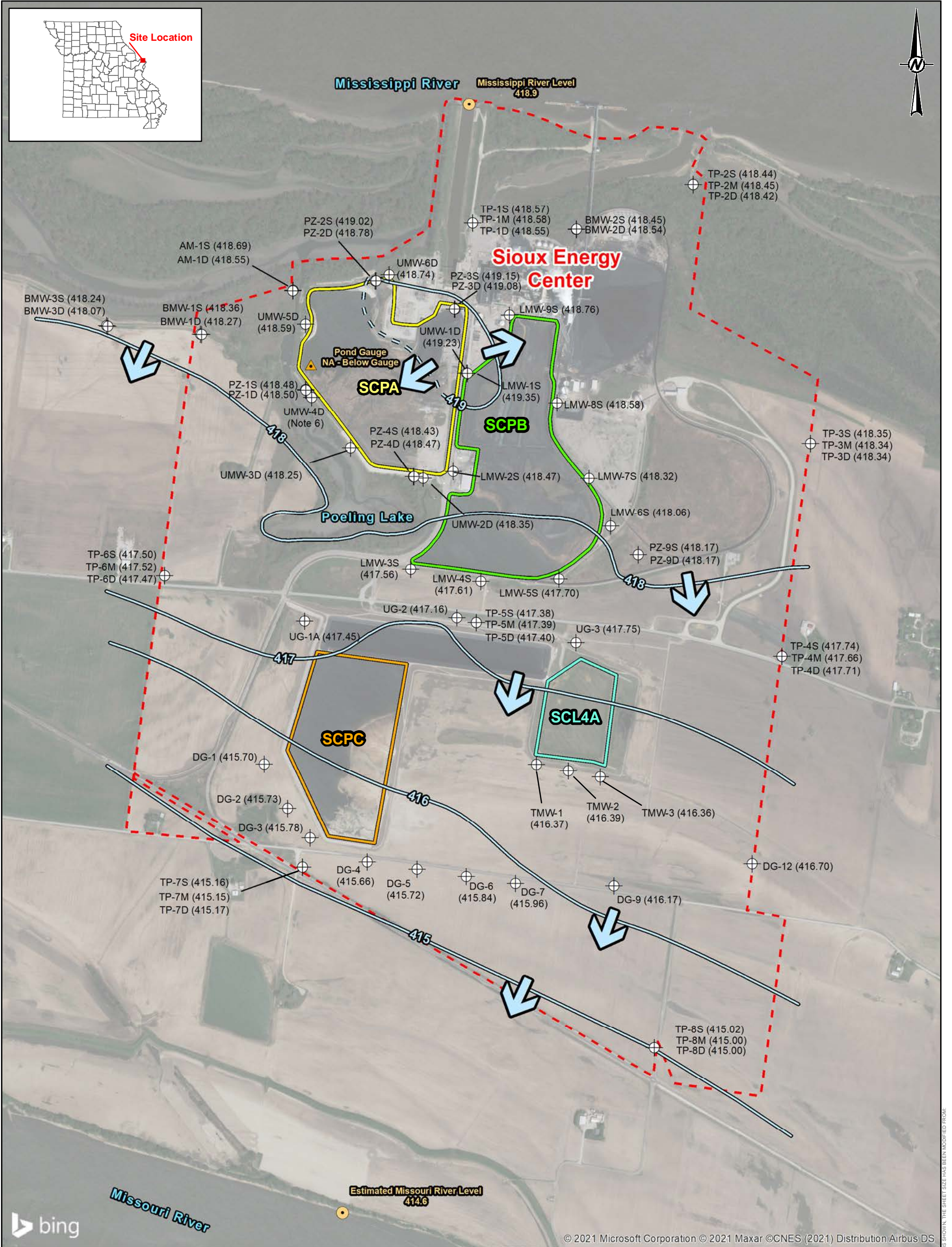
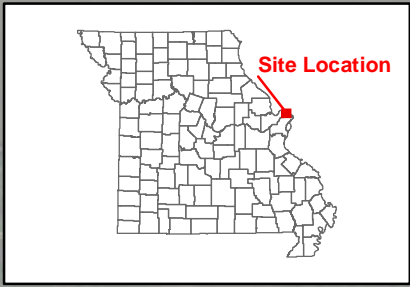
**REFERENCE**

- 1.) AMEREN MISSOURI SIOUX ENERGY CENTER, SIOUX PROPERTY CONTROL MAP, FEBRUARY 2011.
- 2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2,401 FEET.
- 3.) USGS NATIONAL WATER INFORMATION SYSTEM, USGS GAUGES 06935965 (ST. CHARLES), 07010000 (ST. LOUIS), 05587498 (ALTON), GRAFTON (05587450).

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

CLIENT <b>AMEREN MISSOURI SIOUX ENERGY CENTER</b>	
PROJECT <b>CCR GROUNDWATER MONITORING PROGRAM</b>	
TITLE <b>JULY 21, 2020 POTENTIOMETRIC SURFACE MAP</b>	
CONSULTANT 	YYYY-MM-DD 2020-08-10
	PREPARED BTT
	DESIGN JSI
	REVIEW KAB
	APPROVED MNH
PROJECT No. 153-140602	PHASE 0003
	FIGURE <b>D4</b>

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



**LEGEND**

**CCR Units**

- SCPA - Bottom Ash Surface Impoundment
- SCPB - Fly Ash Surface Impoundment
- SCPC - WFGD Surface Impoundment
- SCL4A - Dry CCR Disposal Area

**Groundwater Elevation Contour (FT MSL)**

- Groundwater Elevation Contour (FT MSL)
- Inferred Groundwater
- Elevation Contour (FT MSL)

**Ground/Surface Water Measurement Locations**

- SCPA Bottom Ash Surface Impoundment Gauge
- River Gauge Location
- Monitoring Well or Piezometer

**Groundwater Flow Direction**

**NOTES**

- 1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
- 2.) GROUNDWATER AND SURFACE WATER ELEVATIONS DISPLAYED IN FEET ABOVE MEAN SEA LEVEL (FT MSL).
- 3.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDER.
- 4.) MISSOURI RIVER ELEVATION ESTIMATED BASED ON NEARBY UNITED STATES GEOLOGICAL SURVEY (USGS) RIVER GAUGING LOCATIONS.
- 5.) MISSISSIPPI RIVER ELEVATION PROVIDED BY AMEREN MISSOURI.
- 6.) UMW-4D WAS NOT USED IN POTENTIOMETRIC SURFACE CONTOURING DUE TO WATER LEVEL MEASUREMENT ERROR.

**REFERENCE**

- 1.) AMEREN MISSOURI SIOUX ENERGY CENTER, SIOUX PROPERTY CONTROL MAP, FEBRUARY 2011.
- 2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2,401 FEET.
- 3.) USGS NATIONAL WATER INFORMATION SYSTEM, USGS GAUGES 06935965 (ST. CHARLES), 07010000 (ST. LOUIS), 05587498 (ALTON), 05587450 (GRAFTON).

**CLIENT**  
AMEREN MISSOURI  
SIOUX ENERGY CENTER

**PROJECT**  
CCR GROUNDWATER MONITORING PROGRAM

**TITLE**  
SEPTEMBER 28, 2020 POTENTIOMETRIC SURFACE MAP

**CONSULTANT**  
GOLDER

**DATE**  
2020-10-12

**PREPARED**  
BTT

**DESIGN**  
JSI

**REVIEW**  
EMS

**APPROVED**  
MNH

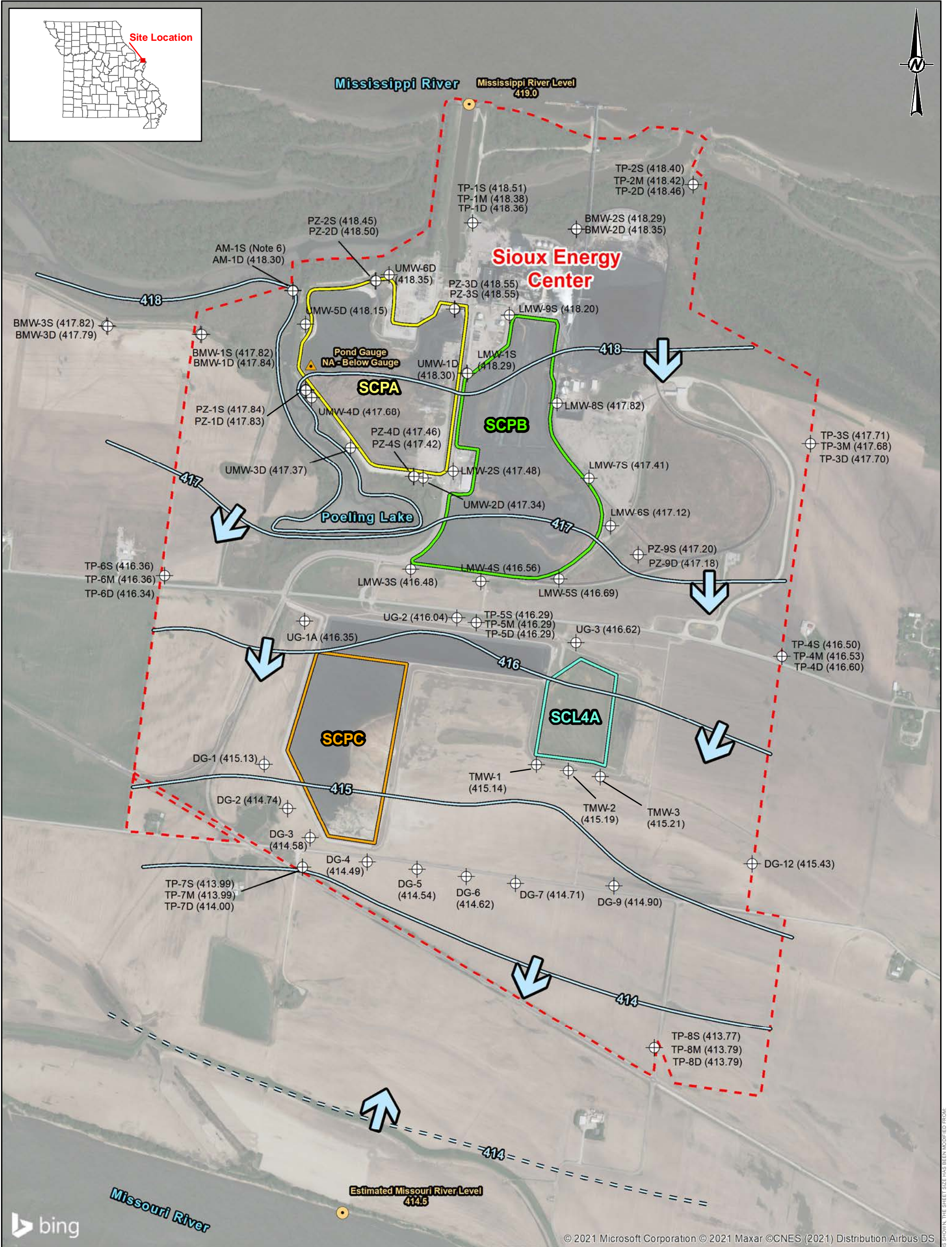
**PROJECT No.**  
153-140602

**PHASE**  
0003

**FIGURE**  
D5



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



**LEGEND**

- Sioux Energy Center Property Boundary
- CCR Units**
  - SCPA - Bottom Ash Surface Impoundment
  - SCPB - Fly Ash Surface Impoundment
  - SCPC - WFGD Surface Impoundment
  - SCL4A - Dry Ash Disposal Area
- Groundwater Flow Direction

**Groundwater Elevation Contour (FT MSL)**

- Groundwater Elevation Contour (FT MSL)
- Inferred Groundwater
- Elevation Contour (FT MSL)

**Ground/Surface Water Measurement Locations**

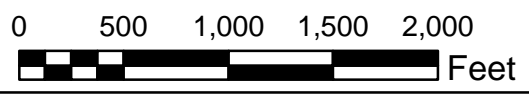
- SCPA Bottom Ash Surface Impoundment Gauge
- River Gauge Location
- Monitoring Well or Piezometer

**NOTES**

- 1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
- 2.) GROUNDWATER AND SURFACE WATER ELEVATIONS DISPLAYED IN FEET ABOVE MEAN SEA LEVEL (FT MSL).
- 3.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDER.
- 4.) MISSOURI RIVER ELEVATION ESTIMATED BASED ON NEARBY UNITED STATES GEOLOGICAL SURVEY (USGS) RIVER GAUGING LOCATIONS.
- 5.) MISSISSIPPI RIVER ELEVATION PROVIDED BY AMEREN MISSOURI.
- 6.) AM-1S WAS NOT USED IN POTENTIOMETRIC SURFACE CONTOURING DUE TO WATER LEVEL MEASUREMENT ERROR.

**REFERENCE**

- 1.) AMEREN MISSOURI SIOUX ENERGY CENTER, SIOUX PROPERTY CONTROL MAP, FEBRUARY 2011.
- 2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2,401 FEET.
- 3.) USGS NATIONAL WATER INFORMATION SYSTEM, USGS GAUGES 06935965 (ST. CHARLES), 07010000 (ST. LOUIS), 05587498 (ALTON), GRAFTON (05587450).



**CLIENT**  
AMEREN MISSOURI  
SIOUX ENERGY CENTER

**PROJECT**  
CCR GROUNDWATER MONITORING PROGRAM

**TITLE**  
NOVEMBER 11, 2020 POTENTIOMETRIC SURFACE MAP

**CONSULTANT**  
GOLDER

YYYY-MM-DD	2020-11-25
PREPARED	BTT
DESIGN	JSI
REVIEW	BTT
APPROVED	MNH

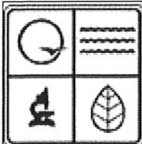
**PROJECT No.** 153-140602      **PHASE** 0003

**FIGURE D6**

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

**APPENDIX E**

# Well Modification Records



MISSOURI DEPARTMENT OF  
NATURAL RESOURCES  
MISSOURI GEOLOGICAL SURVEY  
RECONSTRUCTION RECORD

OFFICE USE ONLY

REF NO 00549238

DATE RECEIVED 06/04/2020

ROUTE PCD4

APPROVED NRSMTK4

DATE 07/08/2020

ENTERED NRSMTK4

STATE CERT NO RO10540

CHECK NO. 2099

REVENUE NO. 060420

INFORMATION SUPPLIED BY WELL OR PUMP INSTALLATION CONTRACTOR

OWNER NAME AMEREN MISSOURI SIOUX ENERGY CENTER

TELEPHONE 314-957-3264

OWNER ADDRESS 11149 LINDBERGH BUSINESS COURT

CITY ST LOUIS

STATE MO ZIP CODE 63123

ADDRESS OF WELL SITE (IF DIFFERENT THAN ABOVE) 8501 N STATE ROUTE 94

CITY WEST ALTON

STATE MO ZIP CODE

SITE NAME SIOUX ENERGY CENTER

WELL NUMBER UMW 1 D

ORIGINAL DRILLER

DATE ORIGINALLY DRILLED

TYPE OF REPAIR  
 RAISED CASING  LINING OF WELL  
 DEEPENING OF WELL  MONITORING

DATE WELL WAS RECONSTRUCTED 04/29/2020

WELL CERTIFICATION NUMBER OR REFERENCE NUMBER

VARIANCE NUMBER

LOCATION OF WELL

LAT. 38° 54' 46.33" AREA AREA 5

LONG 90° 17' 30.84" ELEV 0

LEGAL LOCATION 1/4 1/4 1/4 SEC. LG001838 TWN. RNG.

COUNTY ST CHARLES

DRILLER NOTES

RECONSTRUCTION INFORMATION

USE OF WELL  
 DOMESTIC  IRRIGATION BEDROCK  IRRIGATION UNCONSOLIDATED  
 MONITORING  MULTI-FAMILY  PUBLIC WATER SUPPLY  
 OPEN LOOP WATER

CASING DIAMETER 0.0

STATIC WATER LEVEL

WELL CHLORINATED AFTER RECONSTRUCTION  
 YES  NO

MONITORING WELL INFORMATION

TYPE OF REPAIR  
 OVER-DRILL AND RECONSTRUCTED\*  
 INSTALL OR REPLACE SURFACE COMPLETION  
 RAISE OR LOWER SURFACE ELEVATION

LENGTH OF RISER ADDED 2.21 FT.

RISER MATERIAL  
 PLASTIC  
 STAINLESS STEEL

ORIGINAL RISER MATERIAL  
 PLASTIC  
 STAINLESS STEEL

METHOD OF ATTACHMENT  
 THREADED  WELD  
 COUPLE  FUSE  
 GLUE  OTHER

TYPE OF SURFACE COMPLETION  
 ABOVE GROUND  
 FLUSH MOUNT

LINER INFORMATION

PURPOSE OF LINER  
 USED ONLY TO HOLD BACK THE FORMATION  
 USED TO SEAL OUT CONTAMINATION OR OTHER CONDITIONS  
 USED TO SEAL OUT RUST

LENGTH FT. DEPTH TO TOP OF LINER FT.

OUTSIDE DIAMETER IN. PACKER USED ON PVC LINER  
 NONE  RUBBER BOOT

WEIGHT OR SDR # DEPTH PACKERS SET

MATERIAL  
 STEEL  
 PLASTIC

DEEPENING OF WELL INFORMATION

DEPTH FROM TO

FORMATION AND YIELD DESCRIPTION

POSITION OF SEAL  
 FULL LENGTH  
 BOTTOM

GROUT TYPE  
CEMENT  TYPE 1  HI-EARLY  
BENTONITE  CHIPS  GRANULAR  
 PELLETS  SLURRY

NUMBER OF SACKS USED LBS PER SACK

METHOD OF GROUT INSTALLATION  
 AS LINER IS INSTALLED  
 TREMIE

RAISED CASING INFORMATION

LENGTH ADDED FT.

CASING MATERIAL  
 PLASTIC  
 STEEL

ORIGINAL CASING MATERIAL  
 PLASTIC  
 STEEL

METHOD OF ATTACHMENT  
 THREADED  WELD  
 COUPLE  GLUE

I HEREBY CERTIFY THAT THE WELL HEREIN DESCRIBED WAS RECONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE RECONSTRUCTION OF WELLS.

PRIMARY CONTRACTOR SIGNATURE x CHAD DUTTON

PERMIT NUMBER 003652

DATE

CONTRACTOR SIGNATURE x CHAD DUTTON

PERMIT NUMBER 003652

DATE

APPRENTICE SIGNATURE x

PERMIT NUMBER

DATE



MISSOURI DEPARTMENT OF NATURAL RESOURCES  
GEOLOGICAL SURVEY PROGRAM  
RECONSTRUCTION REGISTRATION REPORT

FOR OFFICE USE ONLY

REF. NO. 547238 DATE RECEIVED JUN 04 2020

ROUTE <u>PCD, 4</u>	APPROVED <u>CS</u>	DATE <u>7-8-20</u>	ENTERED <u>KKH</u>	STATE CERT. NO. <u>RO10530</u>	CHECK NO. <u>CR/C/2019</u>	REVENUE NO. <u>032920</u>
---------------------	--------------------	--------------------	--------------------	--------------------------------	----------------------------	---------------------------

WELL OWNER INFORMATION

NAME <b>AMEREN Missouri Sioux Energy Center</b>		TELEPHONE NUMBER WITH AREA CODE <b>(314) 957-3264</b>	
MAILING ADDRESS <b>11149 Lindbergh Business Court</b>		CITY <b>St. Louis</b>	STATE <b>MO</b>
PHYSICAL ADDRESS OF PROPERTY WHERE WELL IS LOCATED (IF DIFFERENT THAN MAILING ADDRESS) <b>8501 N State Route 94</b>		CITY <b>West Alton</b>	ZIP CODE <b>63123</b>
		EMAIL ADDRESS	

GENERAL WELL INFORMATION

DATE WELL WAS RECONSTRUCTED <b>4/29/2020</b>	WELL CERTIFICATION OR REFERENCE NUMBER (IF KNOWN) <b>00512897</b>	WELL NUMBER <b>UMW-1D</b>	VARIANCE NUMBER (IF ISSUED) <b>n/a</b>	ORIGINAL DRILLER (If known) <b>Drabek / 004484-M</b>	DATE ORIGINALLY DRILLED (IF KNOWN) <b>12/15/2015</b>
TYPE OF REPAIR <input type="checkbox"/> Raised casing <input type="checkbox"/> Deepening of well <input type="checkbox"/> Well conversion		NAME OF SITE, BUSINESS, OR CLEANUP PROJECT <b>Sioux Energy Center</b>		REGULATORY SITE ID NUMBER OF DNR/EPA PROJECT (IF APPLICABLE) <b>n/a</b>	
		<input type="checkbox"/> Lining of well <input checked="" type="checkbox"/> Monitoring well			

LOCATION INFORMATION

Lat. <u>38</u> <u>54</u> <u>46.33</u>	COUNTY <u>LG01838</u>	_____ % _____ % _____ %		DRILL AREA (OFFICE USE ONLY)
Long. <u>90</u> <u>17</u> <u>30.84</u>	<u>St Charles</u>	Section <u>19</u>	Township <u>48</u>	N Range <u>6</u> <input checked="" type="checkbox"/> E <input type="checkbox"/> W
		<u>Area 5</u>		

WATER WELL INFORMATION

TYPE OF WELL <input type="checkbox"/> Domestic <input type="checkbox"/> High yield bedrock <input type="checkbox"/> High yield unconsolidated <input type="checkbox"/> Multi-family <input type="checkbox"/> Public water supply <input type="checkbox"/> Open loop water <input type="checkbox"/> Oil/gas well conversion to water well					
CASING DIAMETER <b>In.</b>	CASING LENGTH (IF KNOWN) <b>ft.</b>	WELL CASING SEAL OR CONNECTION <input type="checkbox"/> Well seal <input type="checkbox"/> Pilless unit <input type="checkbox"/> Pilless adaptor	STATIC WATER LEVEL (IF KNOWN) <b>ft.</b>	WELL CHLORINATED AFTER RECONSTRUCTION <input type="checkbox"/> Yes <input type="checkbox"/> No	DRILLER NOTES

MONITORING WELL INFORMATION

TYPE OF REPAIR <input type="checkbox"/> Over-drill and reconstructed* <input type="checkbox"/> Install or replace surface completion <input checked="" type="checkbox"/> Raise or lower surface elevation *Attach diagram showing well reconstruction details	LENGTH OF RISER ADDED <b>-2.21 ft.</b>	RISER MATERIAL <input checked="" type="checkbox"/> Plastic <input type="checkbox"/> Stainless steel	ORIGINAL RISER MATERIAL <input checked="" type="checkbox"/> Plastic <input type="checkbox"/> Stainless steel	METHOD OF ATTACHMENT <input type="checkbox"/> Thread <input type="checkbox"/> Weld <input type="checkbox"/> Couple <input type="checkbox"/> Fuse <input type="checkbox"/> Glue <input checked="" type="checkbox"/> Other <u>CUT</u>	TYPE OF SURFACE COMPLETION <input type="checkbox"/> Above ground <input checked="" type="checkbox"/> Flush mount
---	---	---	--	--	--

LINER INFORMATION

USE (Choose one) <input type="checkbox"/> Hold back formation <input type="checkbox"/> Prevent rust <input type="checkbox"/> Seal out undesirable conditions	LENGTH <b>ft.</b>	OUTSIDE DIAMETER <b>In.</b>	WEIGHT (LB.) OR SDR#, SCH#	MATERIAL <input type="checkbox"/> Plastic <input type="checkbox"/> Steel	DEPTH TO FROM		FORMATION AND YIELD DESCRIPTION** <b>N/A</b>
	DEPTH TO TOP OF LINER <b>ft.</b>	PACKER USED ON PVC LINER <input type="checkbox"/> Yes <input type="checkbox"/> No	DEPTH PACKERS SET <b>ft.</b>				
POSITION OF SEAL <input type="checkbox"/> Full length <input type="checkbox"/> Bottom	GROUT TYPE (CHOOSE ONE) CEMENT <input type="checkbox"/> Type I <input type="checkbox"/> Type III BENTONITE <input type="checkbox"/> Chips <input type="checkbox"/> Granular <input type="checkbox"/> Pellets <input type="checkbox"/> Slurry		NUMBER OF SACKS USED <b>_____</b>	METHOD OF GROUT INSTALLATION <input type="checkbox"/> Gravity <input type="checkbox"/> Pressure tremie <input type="checkbox"/> As liner is installed			

RAISED CASING INFORMATION

LENGTH ADDED <b>ft.</b>	CASING MATERIAL <input type="checkbox"/> Plastic <input type="checkbox"/> Steel	ORIGINAL CASING MATERIAL <input type="checkbox"/> Plastic <input type="checkbox"/> Steel	METHOD OF ATTACHMENT <input type="checkbox"/> Thread <input type="checkbox"/> Weld <input type="checkbox"/> Couple <input type="checkbox"/> Glue
----------------------------	---	--	--

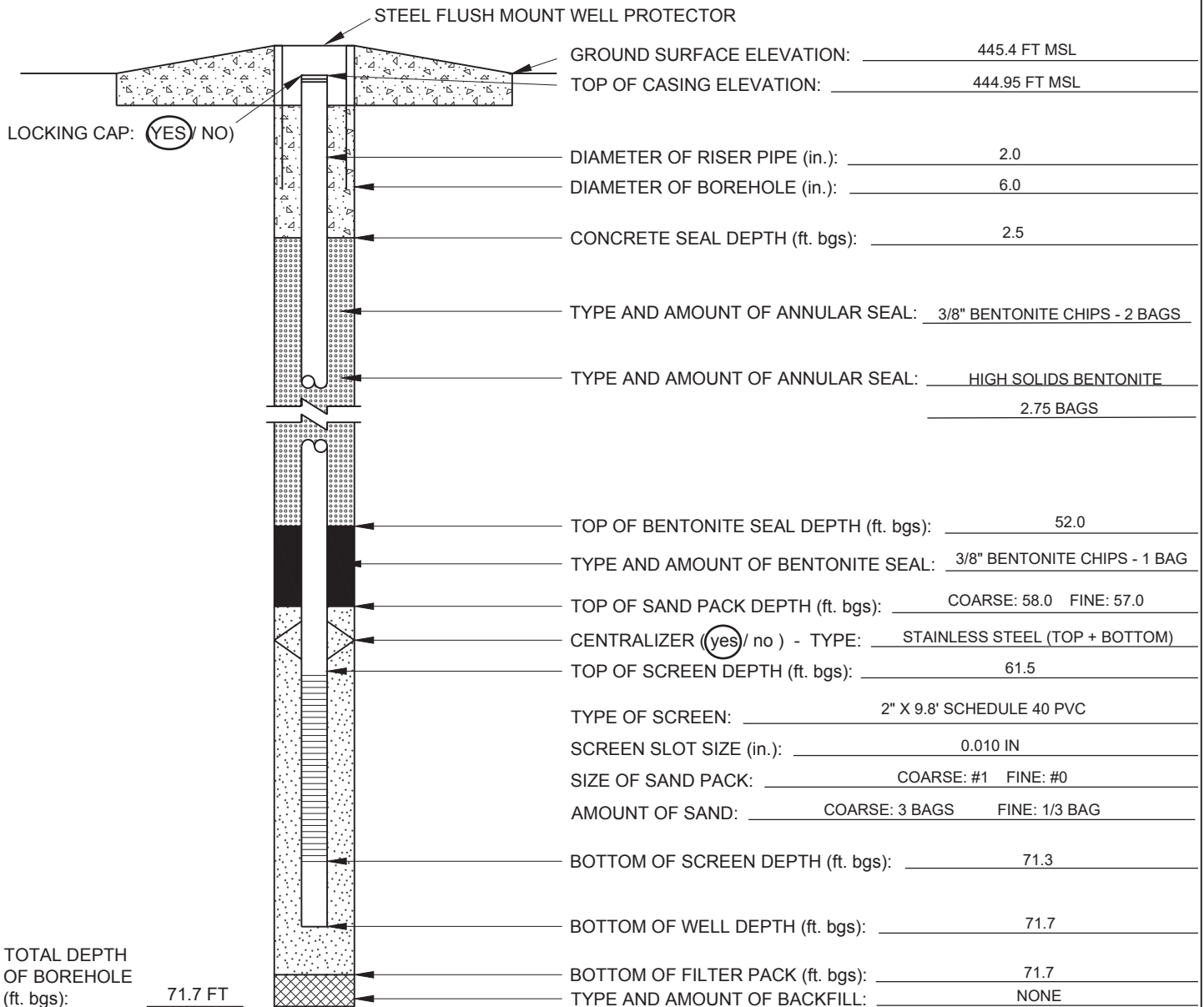
I hereby certify that the information herein described for this well is in accordance with the department of natural resources requirements. (All fields must be completed but only one signature is required.)

PRIMARY CONTRACTOR (If different than installation contractor) 	PERMIT NUMBER <b>003652-M</b>	DATE <b>5/7/2020</b>
WELL OR PUMP INSTALLATION CONTRACTOR	PERMIT NUMBER	DATE
WELL OR PUMP INSTALLATION APPRENTICE	PERMIT NUMBER	DATE

\*\*BORING LOG/WELL DIAGRAM ATTACHED



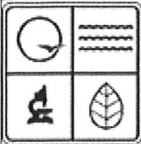
PROJECT NAME: AMEREN CCR GW MONITORING		PROJECT NUMBER: 153141602.0003A	
SITE NAME: SIOUX ENERGY CENTER		LOCATION: UMW-1D	
CLIENT: AMEREN MISSOURI		SURFACE ELEVATION: 445.4 FT MSL	
GEOLOGIST: J. SUOZZI	NORTHING: 1121321.4	EASTING: 879420.3	
DRILLER: J. DRABEK	STATIC WATER LEVEL: 25.10 FT BTOC	COMPLETION DATE: 12/15/2015	
DRILLING COMPANY: CASCADE		DRILLING METHODS: SONIC	



ADDITIONAL NOTES: FT. BGS = FEET BELOW GROUND SURFACE. FT. MSL = FEET ABOVE MEAN SEA LEVEL. IN. = INCHES. 150 GALLONS OF WATER USED DURING DRILLING. HORIZONTAL DATUM: STATE PLANE COORDINATES NAD83 US SURVEY FEET (2000) MISSOURI EAST ZONE. VERTICAL DATUM: NAVD88. WELL SURVEYED BY ZAHNER AND ASSOCIATES, INC ON APRIL 30, 2020. FT BTOC = FEET BELOW TOP OF CASING. SAND AND BENTONITE BAGS WEIGH 50 LBS EACH. MODIFIED ON APRIL 29, 2020 BY BULLDOG DRILLING.

CHECKED BY: E. SCHNEIDER  
DATE CHECKED: 1/21/2021

PREPARED BY: B. TALBERT



MISSOURI DEPARTMENT OF  
NATURAL RESOURCES  
MISSOURI GEOLOGICAL SURVEY  
RECONSTRUCTION RECORD

OFFICE USE ONLY

REF NO 00549237 DATE RECEIVED 06/04/2020

ROUTE PCD4 APPROVED NRSMITK4 DATE 07/08/2020 ENTERED NRSMITK4 STATE CERT NO RO10539 CHECK NO. 2099 REVENUE NO. 060420

INFORMATION SUPPLIED BY WELL OR PUMP INSTALLATION CONTRACTOR

OWNER NAME AMEREN MISSOURI SIOUX ENERGY CENTER TELEPHONE 314-957-3264

OWNER ADDRESS 11149 LINDBERGH BUSINESS COURT CITY ST LOUIS STATE MO ZIP CODE 63123

ADDRESS OF WELL SITE (IF DIFFERENT THAN ABOVE) 8501 N STATE ROUTE 94 CITY WEST ALTON STATE MO ZIP CODE

SITE NAME SIOUX ENERGY CENTER WELL NUMBER UMW 1 S ORIGINAL DRILLER DATE ORIGINALLY DRILLED

TYPE OF REPAIR  
 RAISED CASING  LINING OF WELL  
 DEEPENING OF WELL  MONITORING

DATE WELL WAS RECONSTRUCTED 04/29/2020 WELL CERTIFICATION NUMBER OR REFERENCE NUMBER VARIANCE NUMBER

LOCATION OF WELL  
 LAT. 38° 54' 46.32" AREA AREA 5  
 LONG 90° 17' 30.75" ELEV 0  
 LEGAL LOCATION \_\_\_\_\_ 1/4 \_\_\_\_\_ 1/4 SEC. LG001838 TWN. \_\_\_\_\_ RNG. \_\_\_\_\_  
 COUNTY ST CHARLES

DRILLER NOTES

RECONSTRUCTION INFORMATION

USE OF WELL  
 DOMESTIC  IRRIGATION BEDROCK  IRRIGATION UNCONCONSOLIDATED  
 MONITORING  MULTI-FAMILY  PUBLIC WATER SUPPLY  
 OPEN LOOP WATER

CASING DIAMETER 0.0 STATIC WATER LEVEL WELL CHLORINATED AFTER RECONSTRUCTION  
 YES  NO

MONITORING WELL INFORMATION

TYPE OF REPAIR  
 OVER-DRILL AND RECONSTRUCTED\*  
 INSTALL OR REPLACE SURFACE COMPLETION  
 RAISE OR LOWER SURFACE ELAVATION

LENGTH OF RISER ADDED 2.03 FT. RISER MATERIAL  
 PLASTIC  STAINLESS STEEL

ORIGINAL RISER MATERIAL  
 PLASTIC  STAINLESS STEEL

METHOD OF ATTACHMENT  
 THREADED  WELD  
 COUPLE  FUSE  
 GLUE  OTHER

TYPE OF SURFACE COMPLETION  
 ABOVE GROUND  
 FLUSH MOUNT

LINER INFORMATION

PURPOSE OF LINER  
 USED ONLY TO HOLD BACK THE FORMATION  
 USED TO SEAL OUT CONTAMINATION OR OTHER CONDITIONS  
 USED TO SEAL OUT RUST

LENGTH FT. OUTSIDE DIAMETER IN. WEIGHT OR SDR # MATERIAL  
 STEEL  
 PLASTIC

DEPTH TO TOP OF LINER FT. PACKER USED ON PVC LINER  NONE  RUBBER BOOT DEPTH PACKERS SET

POSITION OF SEAL  
 FULL LENGTH  BOTTOM

GROUT TYPE  
 CEMENT  TYPE 1  HI-EARLY  
 BENTONITE  CHIPS  GRANULAR  
 PELLETS  SLURRY

NUMBER OF SACKS USED LBS PER SACK METHOD OF GROUT INSTALLATION  
 AS LINER IS INSTALLED  
 TREMIE

DEEPENING OF WELL INFORMATION

DEPTH FROM TO FORMATION AND YIELD DESCRIPTION

RAISED CASING INFORMATION

LENGTH ADDED FT. CASING MATERIAL  
 PLASTIC  STEEL

ORIGINAL CASING MATERIAL  
 PLASTIC  STEEL

METHOD OF ATTACHMENT  
 THREADED  WELD  
 COUPLE  GLUE

I HEREBY CERTIFY THAT THE WELL HEREIN DESCRIBED WAS RECONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE RECONSTRUCTION OF WELLS.

PRIMARY CONTRACTOR SIGNATURE x CHAD DUTTON PERMIT NUMBER 003652 DATE

CONTRACTOR SIGNATURE x CHAD DUTTON PERMIT NUMBER 003652 DATE

APPRENTICE SIGNATURE x PERMIT NUMBER DATE



MISSOURI DEPARTMENT OF NATURAL RESOURCES  
GEOLOGICAL SURVEY PROGRAM  
RECONSTRUCTION REGISTRATION REPORT

FOR OFFICE USE ONLY

REF. NO. 549237 DATE RECEIVED JUN 04 2020

ROUTE PDH4 APPROVED CS DATE 7-8-20 ENTERED KKR STATE CERT. NO. R010539 CHECK NO. 2019 REVENUE NO. 060420

WELL OWNER INFORMATION

NAME AMEREN Missouri Sioux Energy Center TELEPHONE NUMBER WITH AREA CODE (314) 957-3264

MAILING ADDRESS 11149 Lindbergh Business Court CITY St. Louis STATE MO ZIP CODE 63123

PHYSICAL ADDRESS OF PROPERTY WHERE WELL IS LOCATED (IF DIFFERENT THAN MAILING ADDRESS) 8501 N State Route 94 CITY West Alton EMAIL ADDRESS

GENERAL WELL INFORMATION

DATE WELL WAS RECONSTRUCTED 4/29/2020 WELL CERTIFICATION OR REFERENCE NUMBER (IF KNOWN) 00512888 WELL NUMBER LMW-1S VARIANCE NUMBER (IF ISSUED) n/a ORIGINAL DRILLER (If known) Drabek / 004484-M DATE ORIGINALLY DRILLED (IF KNOWN) 12/15/2015

TYPE OF REPAIR:  Raised casing,  Deepening of well,  Well conversion.  Lining of well,  Monitoring well. NAME OF SITE, BUSINESS, OR CLEANUP PROJECT: Sioux Energy Center. REGULATORY SITE ID NUMBER OF DNR/EPA PROJECT (IF APPLICABLE): n/a

LOCATION INFORMATION

Lat. 38 54 46.32 COUNTY LG0838 St Charles Area 5 Long. 90 17 30.75 Section 19 Township 48 N Range 6  E  W DRILL AREA (OFFICE USE ONLY)

WATER WELL INFORMATION

TYPE OF WELL:  Domestic,  High yield bedrock,  High yield unconsolidated,  Multi-family,  Public water supply,  Open loop water,  Oil/gas well conversion to water well

CASING DIAMETER, CASING LENGTH (IF KNOWN), WELL CASING SEAL OR CONNECTION, STATIC WATER LEVEL (IF KNOWN), WELL CHLORINATED AFTER RECONSTRUCTION, DRILLER NOTES

MONITORING WELL INFORMATION

TYPE OF REPAIR:  Over-drill and reconstructed,  Install or replace surface completion,  Raise or lower surface elevation. LENGTH OF RISER ADDED: -2.03 ft. RISER MATERIAL:  Plastic,  Stainless steel. ORIGINAL RISER MATERIAL:  Plastic,  Stainless steel. METHOD OF ATTACHMENT:  Thread,  Weld,  Couple,  Fuse,  Glue,  Other cut. TYPE OF SURFACE COMPLETION:  Above ground,  Flush mount

LINER INFORMATION DEEPENING OF WELL INFORMATION

USE (Choose one):  Hold back formation,  Prevent rust,  Seal out undesirable conditions. LENGTH, OUTSIDE DIAMETER, WEIGHT (LB.) OR SDR#, MATERIAL, METHOD OF ATTACHMENT. DEPTH TO TOP OF LINER, PACKER USED ON PVC LINER, DEPTH PACKERS SET. POSITION OF SEAL, GROUT TYPE (CHOOSE ONE), NUMBER OF SACKS USED, METHOD OF GROUT INSTALLATION.

RAISED CASING INFORMATION

LENGTH ADDED, CASING MATERIAL, ORIGINAL CASING MATERIAL, METHOD OF ATTACHMENT

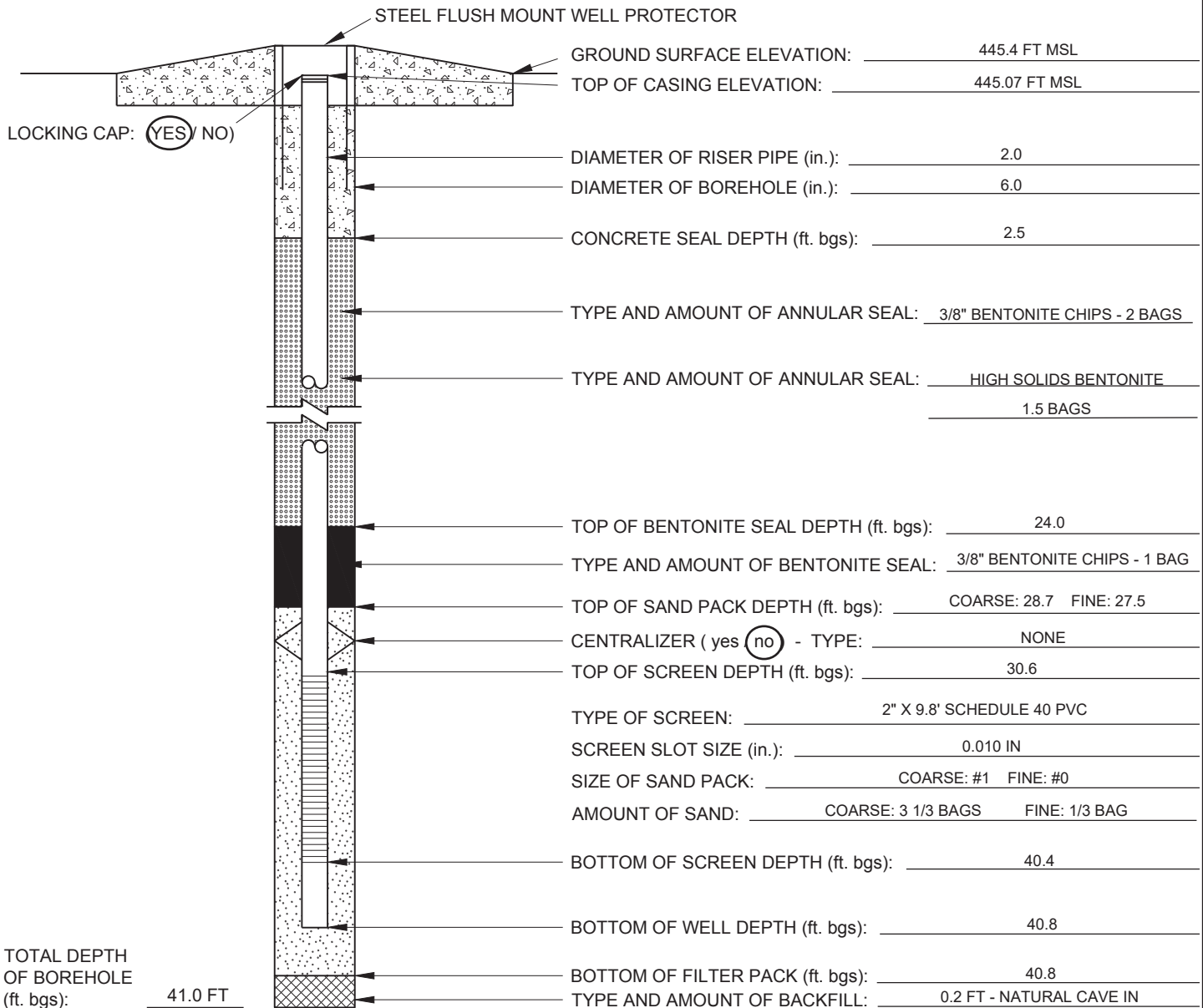
I hereby certify that the information herein described for this well is in accordance with the department of natural resources requirements. (All fields must be completed but only one signature is required.)

PRIMARY CONTRACTOR (if different than installation contractor) PERMIT NUMBER 003652-M DATE 5/7/2020

WELL OR PUMP INSTALLATION CONTRACTOR PERMIT NUMBER DATE

WELL OR PUMP INSTALLATION APPRENTICE PERMIT NUMBER DATE

PROJECT NAME: AMEREN CCR GW MONITORING		PROJECT NUMBER: 153141602.0003B	
SITE NAME: SIOUX ENERGY CENTER		LOCATION: LMW-1S	
CLIENT: AMEREN MISSOURI		SURFACE ELEVATION: 445.4 FT MSL	
GEOLOGIST: J. SUOZZI	NORTHING: 1121320.4	EASTING: 879427.6	
DRILLER: J. DRABEK	STATIC WATER LEVEL: 24.72 FT BTOC	COMPLETION DATE: 12/15/2015	
DRILLING COMPANY: CASCADE		DRILLING METHODS: SONIC	



ADDITIONAL NOTES: FT. BGS = FEET BELOW GROUND SURFACE. FT. MSL = FEET ABOVE MEAN SEA LEVEL. IN. = INCHES. 75 GALLONS OF WATER USED DURING DRILLING. HORIZONTAL DATUM: STATE PLANE COORDINATES NAD83 US SURVEY FEET (2000) MISSOURI EAST ZONE. VERTICAL DATUM: NAVD88. WELL SURVEYED BY ZAHNER AND ASSOCIATES, INC ON APRIL 30, 2020. FT BTOC = FEET BELOW TOP OF CASING. SAND AND BENTONITE BAGS WEIGH 50 LBS EACH. MODIFIED ON APRIL 29, 2020 BY BULLDOG DRILLING.

CHECKED BY: E. SCHNEIDER  
DATE CHECKED: 1/21/2021

PREPARED BY: B. TALBERT



**[golder.com](http://golder.com)**