HALEY ALDRICH

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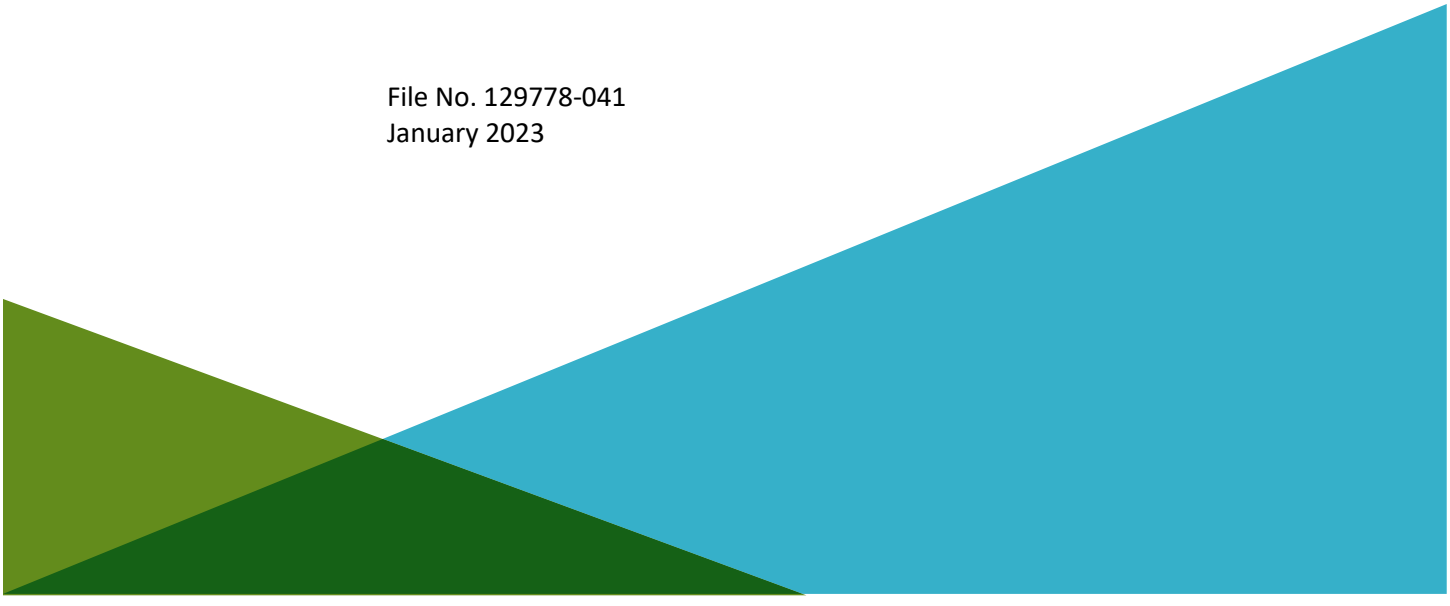
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
BOTTOM ASH SETTLING AREA/BOTTOM ASH LANDFILL
JEFFREY ENERGY CENTER
ST. MARYS, KANSAS

by
Haley & Aldrich, Inc.
Cleveland, Ohio

for
Evergy Kansas Central, Inc.
Topeka, Kansas

File No. 129778-041
January 2023



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This Annual Groundwater Monitoring and Corrective Action Report documents the groundwater monitoring program for the Jeffrey Energy Center (JEC) Bottom Ash Settling Area/Bottom Ash Landfill (BASA/BAL) consistent with applicable sections of 257.90 through 257.98, and describes activities conducted in the prior calendar year (2022) and documents compliance with the U.S. Environmental Protection Agency Coal Combustion Residual Rule. I certify that the 2022 Annual Groundwater Monitoring and Corrective Action Report for the JEC BASA/BAL is, to the best of my knowledge, accurate and complete.

Signed:_____
Professional Geologist

Print Name:	Mark Nicholls
Kansas License No.:	Professional Geologist No. 881
Title:	Technical Expert 2
Company:	Haley & Aldrich, Inc.

1. Introduction

This 2022 Annual Groundwater Monitoring and Corrective Action Report (Annual Report) addresses the Bottom Ash Settling Area/Bottom Ash Landfill (BASA/BAL) at the Jeffrey Energy Center (JEC), operated by Evergy Kansas Central, Inc. (Evergy). This Annual Report was developed in accordance with the U.S. Environmental Protection Agency Coal Combustion Residual (CCR) Rule (Rule) effective October 19, 2015, including subsequent revisions, specifically Code of Federal Regulations Title 40 (40 CFR), subsection 257.90(e). The Annual Report documents the groundwater monitoring system for the BASA/BAL consistent with applicable sections of 257.90 through 257.98, and describes activities conducted in the prior calendar year (2022) and documents compliance with the Rule. The specific requirements for the Annual Report listed in § 257.90(e) of the Rule are provided in Sections 1 and 2 of this Annual Report and are in bold italic font, followed by a narrative describing how each Rule requirement has been met.

1.1 40 CFR § 257.90(e)(6) SUMMARY

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

1.1.1 40 CFR § 257.90(e)(6)(i) – Initial Monitoring Program

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

At the start of the current annual reporting period (January 1, 2022), the BASA/BAL was operating under a detection monitoring program in compliance with 40 CFR § 257.94.

1.1.2 40 CFR § 257.90(e)(6)(ii) – Final Monitoring Program

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

At the end of the current annual reporting period (December 31, 2022), the BASA/BAL was operating under a detection monitoring program in compliance with 40 CFR § 257.94.

1.1.3 40 CFR § 257.90(e)(6)(iii) – Statistically Significant Increases

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

1.1.3.1 40 CFR § 257.90(e)(6)(iii)(a) – Statistically Significant Increase Constituents

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

No statistically significant increases (SSI) over background were identified during the previous calendar year (2022). The statistical evaluation reports for semi-annual assessment monitoring sampling events from September 2021 and March 2022 were completed in January 2022 and July 2022, respectively, and are included in Attachment 1.

1.1.3.2 40 CFR § 257.90(e)(6)(iii)(b) – Initiation of Assessment Monitoring

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

No SSIs over background were identified during the previous calendar year (2022); therefore, an assessment monitoring program was not initiated for the BASA/BAL in 2022.

1.1.4 40 CFR § 257.90(e)(6)(iv) – Statistically Significant Levels

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

1.1.4.1 40 CFR § 257.90(e)(6)(iv)(A) – Statistically Significant Level Constituents

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

The BASA/BAL remains in detection monitoring, and no appendix IV constituents were collected or analyzed in 2022. Therefore, no statistically significant levels above the groundwater protection standard were identified for the BASA/BAL.

1.1.4.2 40 CFR § 257.90(e)(6)(iv)(B) – Initiation of the Assessment of Corrective Measures

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

No assessment of corrective measures was required to be initiated in 2022 for this unit. The BASA/BAL remained in detection monitoring during 2022.

1.1.4.3 40 CFR § 257.90(e)(6)(iv)(C) – Assessment of Corrective Measures Public Meeting

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

An assessment of corrective measures was not required for the BASA/BAL in 2022; therefore, a public meeting was not held.

1.1.4.4 40 CFR § 257.90(e)(6)(iv)(D) – Completion of the Assessment of Corrective Measures

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

No assessment of corrective measures was required to be initiated in 2022 for this unit. The BASA/BAL remained in detection monitoring during 2022.

1.1.5 40 CFR § 257.90(e)(6)(v) – Selection of Remedy

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

The BASA/BAL remains in detection monitoring, and no remedy was required to be selected.

1.1.6 40 CFR § 257.90(e)(6)(vi) – Remedial Activities

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

No remedial activities were required in 2022.

2. 40 CFR § 257.90 Applicability

2.1 40 CFR § 257.90(a)

All CCR landfills, CCR surface impoundments, and lateral expansions of CCR units are subject to the groundwater monitoring and corrective action requirements under §§ 257.90 through 257.99, except as provided in paragraph (g) [Suspension of groundwater monitoring requirements] of this section.

Evergy has installed and certified a groundwater monitoring system at the JEC BASA/BAL. The BASA/BAL is a multi-unit system subject to the groundwater monitoring and corrective action requirements described under 40 CFR §§ 257.90 through 257.98. This document addresses the requirement for the Owner/Operator to prepare an Annual Report per § 257.90(e).

2.2 40 CFR § 257.90(e) – SUMMARY

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

This Annual Report describes monitoring completed and actions taken for the groundwater monitoring system at the JEC BASA/BAL as required by the Rule. Groundwater sampling and analysis was conducted in accordance with requirements described in § 257.93, and the status of the groundwater monitoring program described in § 257.94 is provided in this report. This Annual Report documents the applicable groundwater-related activities completed in the calendar year 2022.

2.2.1 Status of the Groundwater Monitoring Program

The BASA/BAL remained in the detection monitoring program during 2022.

2.2.2 Key Actions Completed

The 2021 Annual Groundwater Monitoring and Corrective Action Report was completed in January 2022. Statistical evaluation was completed in January 2022 on analytical data from the

September 2021 semi-annual detection monitoring sampling event. Semi-annual detection monitoring events were completed in March and September of 2022. Statistical evaluation was completed in July 2022 on analytical data from the March 2022 semi-annual detection monitoring sampling event. Statistical evaluation of the results from the September 2022 semi-annual detection monitoring sampling event are due to be completed in January 2023 and will be reported in the next annual report.

2.2.3 Problems Encountered

One problem encountered during groundwater monitoring activities in 2022 consisted of a laboratory analytical error that required the laboratory to reanalyze select analytical results. Calcium was reanalyzed for monitoring wells BAA-3 and BAA-6 in the March 2022 semi-annual detection monitoring sampling event. The analytical result was revised accordingly. This was the only issue that needed to be addressed at the BASA/BAL in 2022.

2.2.4 Actions to Resolve Problems

The resolution to problems encountered in 2022 included additional laboratory analyses, as described above. The analytical results were revised accordingly. No other problems were encountered at the BASA/BAL in 2022; therefore, no actions to resolve problems were required.

2.2.5 Project Key Activities for Upcoming Year

Key activities planned for 2023 include completion of the 2022 Annual Groundwater Monitoring and Corrective Action Report, statistical evaluation of semi-annual detection monitoring analytical data collected in September 2022, and semi-annual detection monitoring and subsequent statistical evaluations.

2.3 40 CFR § 257.90(e) – INFORMATION

At a minimum, the annual groundwater monitoring and corrective action report must contain the following information, to the extent available:

2.3.1 40 CFR § 257.90(e)(1)

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

As required by § 257.90(e)(1), a map showing the locations of the CCR unit and associated upgradient and downgradient monitoring wells for the BASA/BAL is included in this report as Figure 1.

2.3.2 40 CFR § 257.90(e)(2) – Monitoring System Changes

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

No monitoring wells were installed or decommissioned in 2022.

2.3.3 40 CFR § 257.90(e)(3) – Summary of Sampling Events

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

In accordance with § 257.94(b), two independent detection monitoring samples from each background and downgradient monitoring well were collected during 2022. A summary including the sample names, dates of sample collection, field parameters, and monitoring data obtained for the groundwater monitoring program for the BASA/BAL is presented in Table I of this report, with corresponding laboratory analytical reports provided in Attachment 2. Groundwater potentiometric elevation contour maps, along with calculated groundwater flow rates and directions, associated with each groundwater monitoring sampling event in 2022 are provided in Figures 2 and 3.

2.3.4 40 CFR § 257.90(e)(4) – Monitoring Transition Narrative

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

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

2.3.5 40 CFR § 257.90(e)(5) – Other Requirements

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

This Annual Report documents activities conducted to comply with § 257.90 through § 257.94 of the Rule. It is understood that there are supplemental references in § 257.90 through § 257.98 that must be placed in the Annual Report. The following requirements include relevant and required information in the Annual Report for the activities completed in calendar year 2022.

2.3.5.1 40 CFR § 257.94(d)(3) – Demonstration for Alternative Detection Monitoring Frequency

The owner or operator must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the

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

An alternative groundwater detection monitoring sampling and analysis frequency has not been established for this CCR unit; therefore, no demonstration or certification is applicable.

2.3.5.2 40 CFR § 257.94(e)(2) – Detection Monitoring Alternate Source Demonstration

The owner or operator may demonstrate that a source other than the CCR unit caused the statistically significant increase over background levels for a constituent or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The owner or operator must complete the written demonstration within 90 days of detecting a statistically significant increase over background levels to include obtaining a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority verifying the accuracy of the information in the report. If a successful demonstration is completed within the 90-day period, the owner or operator of the CCR unit may continue with a detection monitoring program under this section. If a successful demonstration is not completed within the 90-day period, the owner or operator of the CCR unit must initiate an assessment monitoring program as required under § 257.95. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority.

No alternate source demonstration or certification was required in 2022; therefore, no demonstration or certification is applicable.

2.3.5.3 40 CFR § 257.95(c)(3) – Demonstration for Alternative Assessment Monitoring Frequency

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

The BASA/BAL remains in detection monitoring and an alternative groundwater assessment monitoring sampling and analysis frequency has not been established for this CCR unit; therefore, no demonstration or certification is applicable.

2.3.5.4 40 CFR § 257.95(d)(3) – Assessment Monitoring Concentrations and Groundwater Protection Standards

Include the recorded concentrations required by paragraph (d)(1) of this section, identify the background concentrations established under § 257.94(b), and identify the groundwater protection standards established under paragraph (d)(2) of this section in the annual groundwater monitoring and corrective action report required by § 257.90(e).

The BASA/BAL remains in detection monitoring, and no assessment monitoring samples were collected or analyzed in 2022. Consequently, Evergy is not required to establish groundwater protection standards for this CCR unit, and this criterion is not applicable.

2.3.5.5 40 CFR § 257.95(g)(3)(ii) – Assessment Monitoring Alternate Source Demonstration

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

No assessment monitoring alternate source demonstration or certification was required in 2022. The BASA/BAL remained in detection monitoring during 2022.

2.3.5.6 40 CFR § 257.96(a) – Demonstration for Additional Time for Assessment of Corrective Measures

Within 90 days of finding that any constituent listed in appendix IV to this part has been detected at a statistically significant level exceeding the groundwater protection standard defined under § 257.95(h), or immediately upon detection of a release from a CCR unit, the owner or operator must initiate an assessment of corrective measures to prevent further releases, to remediate any releases and to restore affected area to original conditions. The assessment of corrective measures must be completed within 90 days, unless the owner or operator demonstrates the need for additional time to complete the assessment of corrective measures due to site-specific conditions or circumstances. The owner or operator must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority attesting that the demonstration is accurate. The 90-day deadline to complete the assessment of corrective measures may be extended for no longer than 60 days. The owner or operator must also

include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer or the approval from the Participating State Director or approval from EPA where EPA is the permitting authority.

No assessment of corrective measures was required to be initiated in 2022; therefore, no demonstration or certification is applicable for this unit.

TABLE

TABLE I

SUMMARY OF ANALYTICAL RESULTS - 2022 DETECTION MONITORING

EVERGY KANSAS CENTRAL, INC.

JEFFREY ENERGY CENTER, BOTTOM ASH SETTLING AREA / BOTTOM ASH LANDFILL

ST. MARYS, KANSAS

Location	Upgradient		Downgradient							
	MW-BAA-6		MW-BAA-2			MW-BAA-3			MW-BAA-7	
Measure Point (TOC)	1301.81		1226.56			1222.00			1213.15	
Sample Name	BAA-6-030922	BAA-6-090822	BAA-2-030922	BAA-2-090822	DUP-BAA-090822	BAA-3-030922	DUP-BAA-030922	BAA-3-090822	BAA-7-030922	BAA-7-090822
Sample Date	3/9/2022	9/8/2022	3/9/2022	9/8/2022	9/8/2022	3/9/2022	3/9/2022	9/8/2022	3/9/2022	9/8/2022
Final Lab Report Date	3/21/2022	9/23/2022	3/21/2022	9/23/2022	9/23/2022	3/21/2022	3/21/2022	9/23/2022	3/21/2022	9/23/2022
Final Lab Report Revision Date	5/4/2022	10/19/2022	5/4/2022	10/19/2022	10/19/2022	5/4/2022	5/4/2022	10/19/2022	5/4/2022	10/19/2022
Lab Data Reviewed and Accepted	5/9/2022	11/4/2022	5/9/2022	11/4/2022	11/4/2022	5/9/2022	5/9/2022	11/4/2022	5/9/2022	11/4/2022
Depth to Water (ft btoc)	81.58	81.41	20.87	19.97	19.97	19.33	19.33	15.90	21.91	23.31
Temperature (Deg C)	12.29	20.57	14.28	16.58	-	12.55	-	18.94	14.06	16.58
Conductivity (µS/cm)	5130	4010	1900	1420	-	4180	-	3600	2620	2480
Turbidity (NTU)	4.7	0.0	0.0	0.0	-	8.3	-	0.0	14	0.0
Boron, Total (mg/L)	**5.1**	**5.8**	**1.1**	**1.1**	**1.0**	**2.3**	**2.4**	**2.1**	**0.65**	**0.70**
Calcium, Total (mg/L)	**526**	**477**	**178**	**170**	**166**	**541**	**557**	**493**	**267**	**259**
Chloride (mg/L)	**268**	**306**	**129**	**131**	**161**	**147**	**144**	**138**	**146**	**137**
Fluoride (mg/L)	**0.85**	< 0.20	**0.40**	**0.25**	< 0.20	**0.47**	**0.61**	< 0.20	**0.51**	< 0.20
Sulfate (mg/L)	**1130**	**2090**	**598**	**652**	**626**	**2020**	**2010**	**1780**	**906**	**986**
pH (su)	**7.0**	**7.5**	**7.4**	**7.1**	**7.5**	**7.0**	**7.6**	**7.0**	**7.6**	**7.6**
TDS (mg/L)	**3250**	**4530**	**1280**	**1170**	**1260**	**2970**	**3170**	**3610**	**1780**	**1970**

Notes and Abbreviations:

Bold value: *Detection above laboratory reporting limit.*

µS/cm = micro Siemens per centimeter

Deg C = degrees Celsius

ft btoc = feet below top of casing

mg/L = milligrams per liter

NTU = Nephelometric Turbidity Unit

su = standard unit

TDS = total dissolved solids

TOC = top of casing

FIGURES

LEGEND

- MONITORING WELL
- PIEZOMETER OBSERVATION ONLY
- BOTTOM ASH SETTLING AREA / BOTTOM ASH LANDFILL

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
4. AERIAL IMAGERY SOURCE: ESRI, SEPTEMBER 3, 2019

N

0 300 600

SCALE IN FEET

HALEY ALDRICH

EVERGY KANSAS CENTRAL, INC.
JEFFREY ENERGY CENTER
ST. MARY'S, KANSAS

BOTTOM ASH SETTLING AREA/BOTTOM ASH LANDFILL MONITORING WELL LOCATION MAP

evergy

JANUARY 2023

FIGURE 1

LEGEND

MW-BAA-1
1219.84 WELL NAME AND GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL (AMSL), MARCH 2022

MONITORING WELL

PIEZOMETER OBSERVATION ONLY

ESTIMATED GROUNDWATER POTENTIOMETRIC OBSERVATION ELEVATION CONTOUR, 5-FT INTERVAL (AMSL), DASHED WHERE INFERRED

GROUNDWATER FLOW DIRECTION AND APPROXIMATE GROUNDWATER FLOW RATE (FEET/YEAR)

BOTTOM ASH SETTLING AREA / BOTTOM ASH LANDFILL

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.

2. GROUNDWATER POTENTIOMETRIC ELEVATIONS WERE MEASURED 09 MARCH 2022.

3. THE GROUNDWATER FLOW RATE WAS APPROXIMATED USING THE HYDRAULIC GRADIENT CALCULATED FROM GROUNDWATER POTENTIOMETRIC ELEVATIONS MEASURED 09 MARCH 2022 AND THE CONDUCTIVITY VALUES AND EFFECTIVE POROSITY VALUES OBTAINED FROM SLUG TESTS COMPLETED APRIL 2016.

4. AERIAL IMAGERY SOURCE: ESRI, 3 SEPTEMBER 2019

N

0 300 600
SCALE IN FEET

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ST. MARY'S, KANSAS

BOTTOM ASH SETTLING AREA / BOTTOM ASH LANDFILL GROUNDWATER POTENTIOMETRIC ELEVATION CONTOUR MAP MARCH 09, 2022

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JANUARY 2023

FIGURE 2

LEGEND

MW-BAA-1
1219.84 WELL NAME AND GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL (AMSL), SEPTEMBER 2022

MONITORING WELL

PIEZOMETER OBSERVATION ONLY

ESTIMATED GROUNDWATER POTENTIOMETRIC OBSERVATION ELEVATION CONTOUR, 5-FT INTERVAL (AMSL)

GROUNDWATER FLOW DIRECTION AND APPROXIMATE GROUNDWATER FLOW RATE (FEET/YEAR)

BOTTOM ASH SETTLING AREA / BOTTOM ASH LANDFILL

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.

2. GROUNDWATER POTENTIOMETRIC ELEVATIONS WERE MEASURED 08 SEPTEMBER 2022.

3. THE GROUNDWATER FLOW RATE WAS APPROXIMATED USING THE HYDRAULIC GRADIENT CALCULATED FROM GROUNDWATER POTENTIOMETRIC ELEVATIONS MEASURED 08 SEPTEMBER 2022 AND THE CONDUCTIVITY VALUES AND EFFECTIVE POROSITY VALUES OBTAINED FROM SLUG TESTS COMPLETED APRIL 2016.

4. AERIAL IMAGERY SOURCE: ESRI, 3 SEPTEMBER 2019

N

0 300 600
SCALE IN FEET

HALEY ALDRICH

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BOTTOM ASH SETTLING AREA / BOTTOM ASH LANDFILL GROUNDWATER POTENTIOMETRIC ELEVATION CONTOUR MAP SEPTEMBER 08, 2022

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JANUARY 2023

FIGURE 3

ATTACHMENT 1
Statistical Analyses

ATTACHMENT 1-1
September 2021 Semi-Annual Groundwater Assessment Monitoring Data Statistical Evaluation

HALEY & ALDRICH, INC.
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TECHNICAL MEMORANDUM

January 31, 2023
File No. 129778-035

TO: Evergy Kansas Central, Inc.
Jared Morrison – Director, Water and Waste Programs

FROM: Haley & Aldrich, Inc.
Steven F. Putrich, P.E., Principal Consultant – Engineering Principal
Mark Nicholls, P.G., Senior Associate – Senior Hydrogeologist

SUBJECT: September 2021 Semi-Annual Groundwater Detection Monitoring Data
Statistical Evaluation
Completed January 18, 2022
Jeffrey Energy Center
Bottom Ash Settling Area/Bottom Ash Landfill

Pursuant to Title 40 Code of Federal Regulations (40 CFR) §§ 257.93 and 257.94 (Rule), this memorandum summarizes the statistical evaluation of the analytical results for the **September 2021** semi-annual detection monitoring groundwater sampling event for the Jeffrey Energy Center (JEC) Bottom Ash Settling Area/Bottom Ash Landfill (BASA/BAL). This semi-annual detection monitoring groundwater sampling event was completed on **September 14, 2021,** with laboratory results received and validated on **December 10, 2021**.

The statistical evaluation discussed in this memorandum was conducted to determine if Appendix III groundwater monitoring constituents have been detected in downgradient wells at concentrations that represent a statistically significant increase (SSI) above background or upgradient wells consistent with the requirements in 40 CFR § 257.94.

Statistical Evaluation of Appendix III Constituents

The Rule provides four specific options for statistical evaluation of groundwater quality data collected at a coal combustion residual (CCR) unit (40 CFR § 257.93(f) (1-4)). The two statistical methods used for these evaluations, prediction limits (PL) and Parametric Analysis of Variance, were certified by Haley & Aldrich, Inc. on April 17, 2019. The PL method, as determined applicable for this sampling event, was used to evaluate potential SSIs above background. Background levels for each constituent listed in Appendix III (boron, calcium, chloride, fluoride, pH, sulfate, and total dissolved solids) were computed as upper prediction limits (UPL), considering one future observation, and a minimum 95 percent confidence coefficient. The most recent groundwater sampling event from each compliance well was compared to the corresponding background PL to determine if a SSI existed.

STATISTICAL EVALUATION

An interwell evaluation using the PL method was used to complete the statistical evaluation of the referenced dataset. Interwell evaluation compares the most recent values from downgradient compliance wells against a background dataset composed of upgradient well data (MW-BAA-6). A PL procedure is one in which a concentration limit for each constituent is established from the distribution of the background data, with a specified confidence level (e.g., 95 percent). The upper endpoint of a concentration limit is called the UPL. Depending on the background data distribution, parametric or non-parametric PL procedures are used to evaluate groundwater monitoring data using this method. Parametric PLs utilize normally distributed data or normalized data via a transformation of the sample background data used to construct the limit. If the data are non-normal and a transformation is not indicated, non-parametric procedures (order statistics or bootstrap methods) are used to calculate the PL. If all the background data are non-detect, a maximum reporting limit may serve as an appropriate UPL.

The statistical evaluation was conducted using the background dataset for all Appendix III constituents. The UPLs were calculated from the background well dataset using Chemstat software after testing for outlier sample results that would warrant removal from the dataset based on likely error in sampling or measurement. Both visual and statistical outlier tests for the background data were performed using Chemstat and U.S. Environmental Protection Agency's ProUCL 5.1 software, and a visual inspection of the data was performed using box plots and distribution plots for the downgradient sample data. No sample data were identified as outliers that warranted removal from the dataset.

BACKGROUND DISTRIBUTIONS

The groundwater analytical results for each sampling event from the background sample location (MW-BAA-6) were combined to calculate the UPL for each Appendix III constituent. The variability and distribution of the pooled dataset were evaluated to determine the method for UPL calculation. Per the document, *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance*, March 2009, background concentrations were updated based on statistical evaluation of analytical results collected through **September 2021**.

RESULTS OF APPENDIX III DOWNGRADIENT STATISTICAL COMPARISONS

The sample concentrations from the downgradient wells for each of the Appendix III constituents from the **September 2021** semi-annual detection monitoring sampling event were compared to their respective background UPLs (Table I). A sample concentration greater than the background UPL is considered to represent a SSI. The results of the groundwater detection monitoring statistical evaluation are provided in Table I. **Based on this statistical evaluation on groundwater sampling data collected in September 2021, no SSIs above background PLs occurred at the JEC BASA/BAL.**

Tables:

Table I – Summary of Semi-Annual Detection Groundwater Monitoring Statistical Evaluation

TABLE

TABLE I
SUMMARY OF SEMI-ANNUAL DETECTION GROUNDWATER MONITORING STATISTICAL EVALUATION
SEPTEMBER 2021 SAMPLING EVENT
JEFFREY ENERGY CENTER BOTTOM ASH SETTLING AREA/BOTTOM ASH LANDFILL
ST. MARYS, KANSAS

													Interwell Analysis	
Location Id	**Frequency of Detection**	**Percent Non-Detects**	**Range of Non-Detect**	**Maximum Detect**	**Variance**	**Standard Deviation**	**Coefficient of Variance**	**Outlier Presence**	**Outlier Removed**	**Trend**	**Distribution Well**	**September 2021 Concentration (mg/L)**	**Background limits[1] (UPL) mg/L**	**SSI**
	CCR Appendix-III: Boron, Total (mg/L)													
MW-BAA-6 (upgradient)	16/16	0%	-	5.92	1.639	1.28	0.336	No	No	Stable		3.8	9.08	
MW-BAA-2	16/16	0%	-	1.4	0.03727	0.193	0.178	No	No	Stable	Normal	1.4		No
MW-BAA-3	16/16	0%	-	2.5	0.0096	0.09798	0.04297	No	No	Stable	Normal	2.3		No
MW-BAA-7	16/16	0%	-	1.3	0.101	0.3179	0.3422	No	No	Stable	Normal	0.56		No
	CCR Appendix-III: Calcium, Total (mg/L)													
MW-BAA-6 (upgradient)	16/16	0%	-	557	3441	58.66	0.1169	Yes	No	Increase		557	557	
MW-BAA-2	16/16	0%	-	224	558.7	23.64	0.1327	No	No	Stable	Normal	190		No
MW-BAA-3	17/17	0%	-	559	708.4	26.62	0.05152	No	No	Stable	Normal	542		No
MW-BAA-7	16/16	0%	-	260	308.3	17.56	0.07778	No	No	Decrease	Normal	242		No
	CCR Appendix-III: Chloride (mg/L)													
MW-BAA-6 (upgradient)	16/16	0%	-	314	1900	43.59	0.1796	No	No	Stable		310	422	
MW-BAA-2	16/16	0%	-	220	1833	42.81	0.3285	No	No	Stable	Normal	162		No
MW-BAA-3	16/16	0%	-	189	129.6	11.38	0.07093	Yes	No	Increase	Normal	189		No
MW-BAA-7	16/16	0%	-	211	649.3	25.48	0.1353	Yes	No	Increase	Non-parametric	174		No
	CCR Appendix-III: Fluoride (mg/L)													
MW-BAA-6 (upgradient)	14/16	12%	0.2-0.2	0.88	0.04293	0.2072	0.3798	No	No	Stable		0.71	1.398	
MW-BAA-2	16/16	0%	-	0.63	0.003123	0.05588	0.1071	No	No	Stable	Normal	0.47		No
MW-BAA-3	15/16	6%	0.2-0.2	1	0.04177	0.2044	0.2446	Yes	No	Stable	Normal	0.99		No
MW-BAA-7	16/16	0%	-	0.9	0.00675	0.08216	0.1098	No	No	Stable	Normal	0.61		No
	CCR Appendix-III: pH (lab) (SU)													
MW-BAA-6 (upgradient)	16/16	0%	-	7.3	0.02262	0.1504	0.02132	No	No	Stable		7.3	7.71	
MW-BAA-2	16/16	0%	-	8.5	0.09329	0.3054	0.04103	Yes	No	Stable	Non-parametric	7.3		No
MW-BAA-3	16/16	0%	-	7.6	0.03533	0.188	0.02638	Yes	No	Stable	Normal	7.1		No
MW-BAA-7	16/16	0%	-	7.5	0.018	0.1342	0.01832	Yes	No	Stable	Normal	7.2		No
	CCR Appendix-III: Sulfate (mg/L)													
MW-BAA-6 (upgradient)	16/16	0%	-	2190	99790	315.9	0.1735	Yes	No	Stable		1870	2190	
MW-BAA-2	16/16	0%	-	983	34010	184.4	0.2843	No	No	Stable	Normal	654		No
MW-BAA-3	16/16	0%	-	2290	13080	114.4	0.05662	No	No	Stable	Normal	1850		No
MW-BAA-7	16/16	0%	-	958	2698	51.94	0.05774	Yes	No	Stable	Normal	756		No
	CCR Appendix-III: Total Dissolved Solids (TDS) (mg/L)													
MW-BAA-6 (upgradient)	16/16	0%	-	3670	152600	390.6	0.1213	Yes	No	Stable		3060	3670	
MW-BAA-2	16/16	0%	-	1790	49760	223.1	0.1745	No	No	Stable	Normal	1410		No
MW-BAA-3	16/16	0%	-	3780	54500	233.5	0.07046	No	No	Stable	Normal	3330		No
MW-BAA-7	16/16	0%	-	1990	7476	86.47	0.04812	Yes	No	Stable	Normal	1670		No

Notes and Abbreviations:

[1] Based on background data collected from 08/25/2016 through 09/14/2021.
CCR = coal combustion residual
mg/L = milligrams per liter
SSI = statistically significant increase
SU = standard unit
UPL = upper prediction limit

ATTACHMENT 1-2
March 2022 Semi-Annual Groundwater Assessment Monitoring Data Statistical Evaluation

HALEY & ALDRICH, INC.
6500 Rockside Road
Suite 200
Cleveland, OH 44131
216.739.0555

TECHNICAL MEMORANDUM

January 31, 2023
File No. 129778-050

TO: Evergy Kansas Central, Inc.
Jared Morrison – Director, Water and Waste Programs

FROM: Haley & Aldrich, Inc.
Steven F. Putrich, P.E., Principal Consultant – Engineering Principal
Mark Nicholls, P.G., Senior Associate – Senior Hydrogeologist

SUBJECT: March 2022 Semi-Annual Groundwater Detection Monitoring Data
Statistical Evaluation
Completed July 18, 2022
Jeffrey Energy Center
Bottom Ash Settling Area/Bottom Ash Landfill

Pursuant to Code of Federal Regulations Title 40 (40 CFR) §§ 257.93 and 257.94 (Rule), this memorandum summarizes the statistical evaluation of the analytical results for the **March 2022** semi-annual detection monitoring groundwater sampling event for the Jeffrey Energy Center (JEC) Bottom Ash Settling Area/Bottom Ash Landfill (BASA/BAL). This semi-annual detection monitoring groundwater sampling event was completed on **March 9, 2022,** with laboratory results received and validated on **May 9, 2022**.

The statistical evaluation discussed in this memorandum was conducted to determine if Appendix III groundwater monitoring constituents have been detected in downgradient wells at concentrations that represent a statistically significant increase (SSI) above background or upgradient wells consistent with the requirements in 40 CFR § 257.94.

Statistical Evaluation of Appendix III Constituents

The Rule provides four specific options for statistical evaluation of groundwater quality data collected at a coal combustion residual (CCR) unit (40 CFR § 257.93(f)(1-4)). The two statistical methods used for these evaluations, prediction limits (PL) and Parametric Analysis of Variance, were certified by Haley & Aldrich, Inc. on April 17, 2019. The PL method, as determined applicable for this sampling event, was used to evaluate potential SSIs above background. Background levels for each constituent listed in Appendix III (boron, calcium, chloride, fluoride, pH, sulfate, and total dissolved solids) were computed as upper prediction limits (UPL), considering one future observation, and a minimum 95 percent confidence coefficient. The most recent groundwater sampling event from each compliance well was compared to the corresponding background PL to determine if an SSI existed.

STATISTICAL EVALUATION

An interwell evaluation using the PL method was used to complete the statistical evaluation of the referenced dataset. Interwell evaluation compares the most recent values from downgradient compliance wells against a background dataset composed of upgradient well data (MW-BAA-6). A PL procedure is one in which a concentration limit for each constituent is established from the distribution of the background data, with a specified confidence level (e.g., 95 percent). The upper endpoint of a concentration limit is called the UPL. Depending on the background data distribution, parametric or non-parametric PL procedures are used to evaluate groundwater monitoring data using this method. Parametric PLs utilize normally distributed data or normalized data via a transformation of the sample background data used to construct the limit. If the data are non-normal and a transformation is not indicated, non-parametric procedures (order statistics or bootstrap methods) are used to calculate the PL. If all the background data are non-detect, a maximum reporting limit may serve as an appropriate UPL.

The statistical evaluation was conducted using the background dataset for all Appendix III constituents. The UPLs were calculated from the background well dataset using Chemstat software after testing for outlier sample results that would warrant removal from the dataset based on likely error in sampling or measurement. Both visual and statistical outlier tests for the background data were performed using Chemstat and U.S. Environmental Protection Agency's ProUCL 5.1 software, and a visual inspection of the data was performed using box plots and distribution plots for the downgradient sample data. No sample data were identified as outliers that warranted removal from the dataset.

BACKGROUND DISTRIBUTIONS

The groundwater analytical results for each sampling event from the background sample location MW-BAA-6 were combined to calculate the UPL for each Appendix III constituent. The variability and distribution of the pooled dataset were evaluated to determine the method for UPL calculation. Per the document, *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance*, March 2009, background concentrations were updated based on statistical evaluation of analytical results collected through **September 2021**.

RESULTS OF APPENDIX III DOWNGRADIENT STATISTICAL COMPARISONS

Sample concentrations from the downgradient wells for each of the Appendix III constituents from the **March 2022** semi-annual detection monitoring sampling event were compared to their respective background UPLs (Table I). A sample concentration greater than the background UPL is considered to represent a SSI. The results of the groundwater detection monitoring statistical evaluation are provided in Table I. **Based on this statistical evaluation of groundwater sampling data collected in March 2022, no SSIs above background PLs occurred at the JEC BASA/BAL.**

Attachments:

Table I – Summary of Semi-Annual Detection Groundwater Monitoring Statistical Evaluation

TABLE

TABLE I
SUMMARY OF SEMI-ANNUAL DETECTION GROUNDWATER MONITORING STATISTICAL EVALUATION
MARCH 2022 SAMPLING EVENT
JEFFREY ENERGY CENTER BOTTOM ASH SETTLING AREA/BOTTOM ASH LANDFILL
ST. MARYS, KANSAS

													Interwell Analysis	
Location Id	**Frequency of Detection**	**Percent Non-Detects**	**Range of Non-Detect**	**Maximum Detect**	**Variance**	**Standard Deviation**	**Coefficient of Variance**	**Outlier Presence**	**Outlier Removed**	**Trend**	**Distribution Well**	**March 2022 Concentration (mg/L)**	**Background Limits[1] (UPL) mg/L**	**SSI**
	CCR Appendix-III: Boron, Total (mg/L)													
MW-BAA-6 (upgradient)	17/17	0%	-	5.92	1.634	1.278	0.3289	No	No	Stable		5.1	9.08	
MW-BAA-2	17/17	0%	-	1.4	0.03495	0.187	0.1723	No	No	Stable	Normal	1.1		No
MW-BAA-3	17/17	0%	-	2.5	0.009024	0.09499	0.04164	Yes	No	Stable	Non-parametric	2.3		No
MW-BAA-7	17/17	0%	-	1.3	0.0993	0.3151	0.3453	No	No	Decreasing	Non-parametric	0.65		No
	CCR Appendix-III: Calcium, Total (mg/L)													
MW-BAA-6 (upgradient)	17/17	0%	-	557	3260	57.1	0.1135	Yes	No	Increase		526	557	
MW-BAA-2	17/17	0%	-	224	523.8	22.89	0.1285	No	No	Stable	Normal	178		No
MW-BAA-3	18/18	0%	-	559	699.6	26.45	0.05106	No	No	Stable	Normal	541		No
MW-BAA-7	17/17	0%	-	267	389.2	19.73	0.08646	No	No	Decrease	Normal	267		No
	CCR Appendix-III: Chloride (mg/L)													
MW-BAA-6 (upgradient)	17/17	0%	-	314	1819	42.65	0.1747	No	No	Stable		268	422	
MW-BAA-2	17/17	0%	-	220	1718	41.45	0.3183	No	No	Stable	Normal	129		No
MW-BAA-3	17/17	0%	-	189	132.2	11.5	0.072	No	No	Increase	Normal	147		No
MW-BAA-7	17/17	0%	-	211	714.2	26.72	0.1438	Yes	No	Stable	Non-parametric	146		No
	CCR Appendix-III: Fluoride (mg/L)													
MW-BAA-6 (upgradient)	15/17	12%	0.2-0.2	0.88	0.0457	0.2138	0.3793	No	No	Stable		0.85	1.398	
MW-BAA-2	17/17	0%	-	0.63	0.003801	0.06166	0.1198	No	No	Stable	Normal	0.40		No
MW-BAA-3	16/17	6%	0.2-0.2	1	0.04703	0.2169	0.2664	Yes	No	Stable	Non-parametric	0.47		No
MW-BAA-7	17/17	0%	-	0.9	0.009663	0.0983	0.1339	No	No	Decrease	Normal	0.51		No
	CCR Appendix-III: pH (lab) (SU)													
MW-BAA-6 (upgradient)	17/17	0%	-	7.3	0.0214	0.1463	0.02074	No	No	Stable		7.0	7.71	
MW-BAA-2	17/17	0%	-	8.5	0.08757	0.2959	0.03977	Yes	No	Stable	Non-parametric	7.4		No
MW-BAA-3	17/17	0%	-	7.6	0.03404	0.1845	0.02592	Yes	No	Decrease	Normal	7.0		No
MW-BAA-7	17/17	0%	-	7.6	0.02132	0.146	0.01989	No	No	Stable	Normal	7.6		No
	CCR Appendix-III: Sulfate (mg/L)													
MW-BAA-6 (upgradient)	17/17	0%	-	2190	121600	348.7	0.1959	Yes	No	Stable		1130	2190	
MW-BAA-2	17/17	0%	-	983	32040	179	0.2772	No	No	Stable	Normal	598		No
MW-BAA-3	17/17	0%	-	2290	12260	110.7	0.05482	No	No	Stable	Normal	2020		No
MW-BAA-7	17/17	0%	-	958	2532	50.32	0.05591	No	No	Stable	Non-parametric	906		No
	CCR Appendix-III: Total Dissolved Solids (TDS) (mg/L)													
MW-BAA-6 (upgradient)	17/17	0%	-	3670	143100	378.3	0.1174	Yes	No	Stable		3250	3670	
MW-BAA-2	17/17	0%	-	1790	46650	216	0.1689	No	No	Stable	Normal	1280		No
MW-BAA-3	17/17	0%	-	3780	58020	240.9	0.07315	No	No	Stable	Normal	2970		No
MW-BAA-7	17/17	0%	-	1990	7026	83.82	0.04667	Yes	No	Stable	Normal	1780		No

Notes and Abbreviations:

[1] Based on background data collected from 08/25/2016 through 09/14/2021.
CCR = coal combustion residual
mg/L = milligrams per liter
SSI = statistically significant increase
SU = standard unit
UPL = upper prediction limit

ATTACHMENT 2
Laboratory Analytical Reports

ATTACHMENT 2-1
March 2022 Semi-Annual Sampling Event Laboratory Analytical Report

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

May 04, 2022

Melissa Michels
Evergy, Inc.
818 Kansas Avenue
Topeka, KS 66612

RE: Project: JEC BASA/BALCCR
Pace Project No.: 60394853

Dear Melissa Michels:

Enclosed are the analytical results for sample(s) received by the laboratory on March 10, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

REVISED 5/3/22 report reanalysis of calcium per client request.

REVISISED_2 5/4/22 report results from re-analysis, removed original results.

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

Sincerely,

Alice Spiller

Alice Spiller
alice.spiller@pacelabs.com
(913)599-5665
PM Lab Management

Enclosures

cc: Laura Hines, Evergy, Inc.
Jake Humphrey, Evergy, Inc.
Samantha Kaney, Haley & Aldrich
Jared Morrison, Evergy, Inc.
Danielle Oberbroeckling, Haley & Aldrich
Melanie Satanek, Haley & Aldrich, Inc.
JD Schlegel, Evergy, Inc.
Jacob Will, Evergy Kansas Central, Jeffrey Energy Center

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

CERTIFICATIONS

Project: JEC BASA/BALCCR
Pace Project No.: 60394853

Pace Analytical Services Kansas
9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Inorganic Drinking Water Certification #: 10090
Arkansas Drinking Water
Arkansas Certification #: 20-020-0
Arkansas Drinking Water
Illinois Certification #: 2000302021-3
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212020-2
Oklahoma Certification #: 9205/9935
Florida: Cert E871149 SEKS WET
Texas Certification #: T104704407-21-15
Utah Certification #: KS000212019-9
Illinois Certification #: 004592
Kansas Field Laboratory Accreditation: # E-92587
Missouri SEKS Micro Certification: 10070

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

SAMPLE SUMMARY

Project: JEC BASA/BALCCR
Pace Project No.: 60394853

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60394853001	**BAA-2-030922**	Water	03/09/22 09:25	03/10/22 15:00
60394853002	**BAA-3-030922**	Water	03/09/22 10:10	03/10/22 15:00
60394853003	**BAA-6-030922**	Water	03/09/22 11:55	03/10/22 15:00
60394853004	**BAA-7-030922**	Water	03/09/22 11:05	03/10/22 15:00
60394853005	**DUP-BAA-030922**	Water	03/09/22 10:10	03/10/22 15:00

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

SAMPLE ANALYTE COUNT

Project: JEC BASA/BALCCR
Pace Project No.: 60394853

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60394853001	**BAA-2-030922**	EPA 200.7	JLH	2	PASI-K
		SM 2540C	JDS	1	PASI-K
		SM 4500-H+B	SK	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60394853002	**BAA-3-030922**	EPA 200.7	JLH, MA1	2	PASI-K
		SM 2540C	JDS	1	PASI-K
		SM 4500-H+B	SK	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60394853003	**BAA-6-030922**	EPA 200.7	JLH, MA1	2	PASI-K
		SM 2540C	JDS	1	PASI-K
		SM 4500-H+B	KB	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60394853004	**BAA-7-030922**	EPA 200.7	JLH	2	PASI-K
		SM 2540C	JDS	1	PASI-K
		SM 4500-H+B	KB	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60394853005	**DUP-BAA-030922**	EPA 200.7	JLH	2	PASI-K
		SM 2540C	JDS	1	PASI-K
		SM 4500-H+B	KB	1	PASI-K
		EPA 300.0	CRN	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City

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

PROJECT NARRATIVE

Project: JEC BASA/BALCCR
Pace Project No.: 60394853

Method: **EPA 200.7**
Description: 200.7 Metals, Total
Client: Evergy Kansas Central, Inc.
Date: May 04, 2022

General Information:
5 samples were analyzed for EPA 200.7 by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 200.7 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 775828

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60394834001,60394852001

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

- MS (Lab ID: 3096624)
  - Calcium
- MS (Lab ID: 3096626)
  - Calcium
- MSD (Lab ID: 3096625)
  - Calcium

QC Batch: 783772

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60394853002

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

- MS (Lab ID: 3125433)
  - Calcium
- MSD (Lab ID: 3125434)
  - Calcium

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

PROJECT NARRATIVE

Project: JEC BASA/BALCCR
Pace Project No.: 60394853

Method: **EPA 200.7**
Description: 200.7 Metals, Total
Client: Evergy Kansas Central, Inc.
Date: May 04, 2022

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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

PROJECT NARRATIVE

Project: JEC BASA/BALCCR
Pace Project No.: 60394853

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: Evergy Kansas Central, Inc.
Date: May 04, 2022

General Information:
5 samples were analyzed for SM 2540C by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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

PROJECT NARRATIVE

Project: JEC BASA/BALCCR
Pace Project No.: 60394853

Method: **SM 4500-H+B**
Description: 4500H+ pH, Electrometric
Client: Evergy Kansas Central, Inc.
Date: May 04, 2022

General Information:
5 samples were analyzed for SM 4500-H+B by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H6: Analysis initiated outside of the 15 minute EPA required holding time.
- BAA-2-030922 (Lab ID: 60394853001)
- BAA-3-030922 (Lab ID: 60394853002)
- BAA-6-030922 (Lab ID: 60394853003)
- BAA-7-030922 (Lab ID: 60394853004)
- DUP-BAA-030922 (Lab ID: 60394853005)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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

PROJECT NARRATIVE

Project: JEC BASA/BALCCR
Pace Project No.: 60394853

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: Evergy Kansas Central, Inc.
Date: May 04, 2022

General Information:
5 samples were analyzed for EPA 300.0 by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 776631

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60394893005

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

- MS (Lab ID: 3099253)
  - Chloride
  - Fluoride
  - Sulfate

R1: RPD value was outside control limits.

- MSD (Lab ID: 3099254)
  - Chloride
  - Fluoride
  - Sulfate

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 775525

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

- MS (Lab ID: 3095467)
  - Chloride
- MSD (Lab ID: 3095468)
  - Chloride

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: JEC BASA/BALCCR
Pace Project No.: 60394853

Sample: BAA-2-030922 **Lab ID: 60394853001** Collected: 03/09/22 09:25 Received: 03/10/22 15:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron, Total Recoverable	**1.1**	mg/L	0.10	1	03/16/22 14:38	03/18/22 20:39	7440-42-8	
Calcium, Total Recoverable	**178**	mg/L	0.60	3	03/16/22 14:38	03/18/22 19:41	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**1280**	mg/L	13.3	1		03/16/22 15:17		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Kansas City							
pH at 25 Degrees C	**7.4**	Std. Units	0.10	1		03/16/22 13:01		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**129**	mg/L	50.0	50		03/16/22 12:54	16887-00-6	
Fluoride	**0.40**	mg/L	0.20	1		03/15/22 21:40	16984-48-8	
Sulfate	**598**	mg/L	50.0	50		03/16/22 12:54	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: JEC BASA/BALCCR
Pace Project No.: 60394853

Sample: BAA-3-030922 **Lab ID: 60394853002** Collected: 03/09/22 10:10 Received: 03/10/22 15:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron, Total Recoverable	**2.3**	mg/L	0.10	1	03/16/22 14:38	03/18/22 20:41	7440-42-8	
Calcium, Total Recoverable	**541**	mg/L	2.0	10	04/28/22 10:05	04/29/22 17:52	7440-70-2	M1
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**2970**	mg/L	66.7	1		03/16/22 15:17		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Kansas City							
pH at 25 Degrees C	**7.0**	Std. Units	0.10	1		03/16/22 13:12		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**147**	mg/L	50.0	50		03/16/22 13:08	16887-00-6	
Fluoride	**0.47**	mg/L	0.20	1		03/15/22 22:34	16984-48-8	
Sulfate	**2020**	mg/L	200	200		03/15/22 22:47	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: JEC BASA/BALCCR
Pace Project No.: 60394853

Sample: BAA-6-030922 **Lab ID: 60394853003** Collected: 03/09/22 11:55 Received: 03/10/22 15:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron, Total Recoverable	**5.1**	mg/L	0.10	1	03/16/22 14:38	03/18/22 20:43	7440-42-8	
Calcium, Total Recoverable	**526**	mg/L	2.0	10	04/28/22 10:05	04/29/22 18:03	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**3250**	mg/L	66.7	1		03/16/22 15:17		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Kansas City							
pH at 25 Degrees C	**7.0**	Std. Units	0.10	1		03/17/22 09:16		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**268**	mg/L	50.0	50		03/16/22 13:21	16887-00-6	
Fluoride	**0.85**	mg/L	0.20	1		03/15/22 23:00	16984-48-8	
Sulfate	**1130**	mg/L	200	200		03/15/22 23:14	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: JEC BASA/BALCCR
Pace Project No.: 60394853

Sample: BAA-7-030922 **Lab ID: 60394853004** Collected: 03/09/22 11:05 Received: 03/10/22 15:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron, Total Recoverable	**0.65**	mg/L	0.10	1	03/16/22 14:38	03/18/22 20:45	7440-42-8	
Calcium, Total Recoverable	**267**	mg/L	1.0	5	03/16/22 14:38	03/18/22 19:48	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**1780**	mg/L	20.0	1		03/16/22 15:17		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Kansas City							
pH at 25 Degrees C	**7.6**	Std. Units	0.10	1		03/17/22 12:18		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**146**	mg/L	50.0	50		03/16/22 13:35	16887-00-6	
Fluoride	**0.51**	mg/L	0.20	1		03/15/22 23:27	16984-48-8	
Sulfate	**906**	mg/L	50.0	50		03/16/22 13:35	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: JEC BASA/BALCCR
Pace Project No.: 60394853

Sample: DUP-BAA-030922 **Lab ID: 60394853005** Collected: 03/09/22 10:10 Received: 03/10/22 15:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron, Total Recoverable	**2.4**	mg/L	0.10	1	03/16/22 14:38	03/18/22 20:55	7440-42-8	
Calcium, Total Recoverable	**557**	mg/L	2.0	10	03/16/22 14:38	03/18/22 19:50	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**3170**	mg/L	66.7	1		03/16/22 15:17		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Kansas City							
pH at 25 Degrees C	**7.6**	Std. Units	0.10	1		03/17/22 12:13		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**144**	mg/L	20.0	20		03/21/22 09:55	16887-00-6	
Fluoride	**0.61**	mg/L	0.20	1		03/21/22 09:41	16984-48-8	
Sulfate	**2010**	mg/L	400	400		03/21/22 10:09	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: JEC BASA/BALCCR
Pace Project No.: 60394853

QC Batch: 775828 | 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: 60394853001, 60394853002, 60394853003, 60394853004, 60394853005

METHOD BLANK: 3096622 Matrix: Water
Associated Lab Samples: 60394853001, 60394853002, 60394853003, 60394853004, 60394853005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	mg/L	<0.10	0.10	03/21/22 12:42	
Calcium	mg/L	<0.20	0.20	03/18/22 19:14	

LABORATORY CONTROL SAMPLE: 3096623

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	0.97	97	85-115	
Calcium	mg/L	10	10.4	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3096624 3096625

Parameter	Units	60394852001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	mg/L	0.38	1	1	1.4	1.4	98	98	70-130	1	20	
Calcium	mg/L	318	10	10	323	320	56	25	70-130	1	20	M1

MATRIX SPIKE SAMPLE: 3096626

Parameter	Units	60394834001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	0.40	1	1.4	101	70-130	
Calcium	mg/L	207	10	220	132	70-130	M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: JEC BASA/BALCCR
Pace Project No.: 60394853

QC Batch: 783772
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60394853002, 60394853003

METHOD BLANK: 3125431 Matrix: Water
Associated Lab Samples: 60394853002, 60394853003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Calcium	mg/L	<0.20	0.20	04/29/22 10:31	

LABORATORY CONTROL SAMPLE: 3125432

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium	mg/L	10	9.7	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3125433 3125434

Parameter	Units	60394853002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium	mg/L	541	10	10	535	532	-55	-87	70-130	1	20	M1

SAMPLE DUPLICATE: 3127038

Parameter	Units	60398715001 Result	Dup Result	RPD	Max RPD	Qualifiers
Calcium	mg/L	22.9	22.6	1	20	

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QUALITY CONTROL DATA

Project: JEC BASA/BALCCR
Pace Project No.: 60394853

QC Batch: 775868 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60394853001, 60394853002, 60394853003, 60394853004, 60394853005

METHOD BLANK: 3096796 Matrix: Water
Associated Lab Samples: 60394853001, 60394853002, 60394853003, 60394853004, 60394853005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	03/16/22 15:16	

LABORATORY CONTROL SAMPLE: 3096797

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	996	100	80-120	

SAMPLE DUPLICATE: 3096798

Parameter	Units	60394853005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	3170	3000	6	10	

SAMPLE DUPLICATE: 3096799

Parameter	Units	60394939004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	17600	17600	0	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: JEC BASA/BALCCR
Pace Project No.: 60394853

QC Batch: 775734
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60394853001, 60394853002

SAMPLE DUPLICATE: 3096123

Parameter	Units	60393936001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.7	8.7	0	5	H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: JEC BASA/BALCCR
Pace Project No.: 60394853

QC Batch: 775990
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60394853003

SAMPLE DUPLICATE: 3097134

Parameter	Units	60394768001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.1	7.3	3	5	H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: JEC BASA/BALCCR
Pace Project No.: 60394853

QC Batch: 776035
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60394853004, 60394853005

SAMPLE DUPLICATE: 3097276

Parameter	Units	60394853005 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.6	7.6	1	5	H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: JEC BASA/BALCCR
Pace Project No.: 60394853

QC Batch: 775525
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60394853001, 60394853002, 60394853003, 60394853004

METHOD BLANK: 3095465 Matrix: Water
Associated Lab Samples: 60394853001, 60394853002, 60394853003, 60394853004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<1.0	1.0	03/15/22 17:13	
Fluoride	mg/L	<0.20	0.20	03/15/22 17:13	
Sulfate	mg/L	<1.0	1.0	03/15/22 17:13	

METHOD BLANK: 3097419 Matrix: Water
Associated Lab Samples: 60394853001, 60394853002, 60394853003, 60394853004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<1.0	1.0	03/16/22 08:52	
Fluoride	mg/L	<0.20	0.20	03/16/22 08:52	
Sulfate	mg/L	<1.0	1.0	03/16/22 08:52	

LABORATORY CONTROL SAMPLE: 3095466

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.2	105	90-110	
Fluoride	mg/L	2.5	2.4	97	90-110	
Sulfate	mg/L	5	5.1	103	90-110	

LABORATORY CONTROL SAMPLE: 3097420

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	2.7	108	90-110	
Sulfate	mg/L	5	5.1	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3095467 3095468

Parameter	Units	60390971001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	180	50	50	228	228	97	96	80-120	0	15	E,H1
Fluoride	mg/L	0.623	2.5	2.5	3.3	3.4	108	111	80-120	2	15	H1
Sulfate	mg/L	26.5	50	50	75.4	75.1	98	97	80-120	0	15	H1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: JEC BASA/BALCCR
Pace Project No.: 60394853

QC Batch: 776631
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60394853005

METHOD BLANK: 3099251 Matrix: Water
Associated Lab Samples: 60394853005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<1.0	1.0	03/21/22 07:11	
Fluoride	mg/L	<0.20	0.20	03/21/22 07:11	
Sulfate	mg/L	<1.0	1.0	03/21/22 07:11	

LABORATORY CONTROL SAMPLE: 3099252

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.5	91	90-110	
Fluoride	mg/L	2.5	2.4	96	90-110	
Sulfate	mg/L	5	4.9	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3099253 3099254

Parameter	Units	60394893005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	ND	5	5	6.3	4.6	126	91	80-120	32	15	M1,R1
Fluoride	mg/L	ND	2.5	2.5	3.7	2.6	147	106	80-120	33	15	M1,R1
Sulfate	mg/L	ND	5	5	7.3	5.0	146	100	80-120	37	15	M1,R1

SAMPLE DUPLICATE: 3099255

Parameter	Units	60394893005 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	ND	<1.0		15	
Fluoride	mg/L	ND	<0.20		15	
Sulfate	mg/L	ND	<1.0		15	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: JEC BASA/BALCCR
Pace Project No.: 60394853

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

E	Analyte concentration exceeded the calibration range. The reported result is estimated.
H1	Analysis conducted outside the EPA method holding time.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: JEC BASA/BALCCR
Pace Project No.: 60394853

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60394853001	**BAA-2-030922**	EPA 200.7	775828	EPA 200.7	776011
60394853002	**BAA-3-030922**	EPA 200.7	775828	EPA 200.7	776011
60394853002	**BAA-3-030922**	EPA 200.7	783772	EPA 200.7	783860
60394853003	**BAA-6-030922**	EPA 200.7	775828	EPA 200.7	776011
60394853003	**BAA-6-030922**	EPA 200.7	783772	EPA 200.7	783860
60394853004	**BAA-7-030922**	EPA 200.7	775828	EPA 200.7	776011
60394853005	**DUP-BAA-030922**	EPA 200.7	775828	EPA 200.7	776011
60394853001	**BAA-2-030922**	SM 2540C	775868		
60394853002	**BAA-3-030922**	SM 2540C	775868		
60394853003	**BAA-6-030922**	SM 2540C	775868		
60394853004	**BAA-7-030922**	SM 2540C	775868		
60394853005	**DUP-BAA-030922**	SM 2540C	775868		
60394853001	**BAA-2-030922**	SM 4500-H+B	775734		
60394853002	**BAA-3-030922**	SM 4500-H+B	775734		
60394853003	**BAA-6-030922**	SM 4500-H+B	775990		
60394853004	**BAA-7-030922**	SM 4500-H+B	776035		
60394853005	**DUP-BAA-030922**	SM 4500-H+B	776035		
60394853001	**BAA-2-030922**	EPA 300.0	775525		
60394853002	**BAA-3-030922**	EPA 300.0	775525		
60394853003	**BAA-6-030922**	EPA 300.0	775525		
60394853004	**BAA-7-030922**	EPA 300.0	775525		
60394853005	**DUP-BAA-030922**	EPA 300.0	776631		

WO# : 60394853

60394853

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

Client Name: Evergy

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 ☑ 2PIC

Thermometer Used: 1299 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 1.9 **Corr. Factor** 0.2 **Corrected** 1.7

Date and initials of person examining contents: VLB 3/11/22

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) **LOT#:** 55192	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Qualtrax Document ID: 30468

Page 1 of 1

Pace Analytical
www.pacelabs.com

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:	EVERGY KANSAS CENTRAL, INC.
Address:	Jeffrey Energy Center (JEC)
	818 Kansas Ave, Topeka, KS 66612
Email To:	melissa.michels@evergy.com
Phone: 785-575-8113	Fax:
Requested Due Date/TAT:	7 day

Section B Required Project Information:

Report To:	Melissa Michels, Samantha Kaney, Danielle Ober
Copy To:	Jared Morrison, Jake Humphrey, Laura Hines
Purchase Order No.:	
Project Name:	JEC BASA/BAL CCR
Project Number:	

Section C Invoice Information:

Attention:	Accounts Payable
Company Name:	EVERGY KANSAS CENTRAL, INC
Address:	SEE SECTION A
Pace Quote Reference:	
Pace Project Manager:	Alice Spiller 913-563-1403
Pace Profile #:	9657, 4

REGULATORY AGENCY

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

Site Location STATE: KS

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
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

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

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	200.7 Total Metals*	4500 H+B pH	300: Cl, F, SO4	2540C TDS	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
				DATE	TIME	DATE	TIME																
1	BAA-2-030922	WT	G	-	-	03/09/22	9:25	-	4	3		1						N	X	X	X	X		60394853
2	BAA-3-030922	WT	G	-	-	03/09/22	10:10	-	4	3		1						N	X	X	X	X		
3	BAA-6-030922	WT	G	-	-	03/09/22	11:55	-	4	3		1						N	X	X	X	X		
4	BAA-7-030922	WT	G	-	-	03/09/22	11:05	-	4	3		1						N	X	X	X	X		
5	DUP-BAA-030922	WT	G	-	-	03/09/22	10:10	-	4	3		1						N	X	X	X	X		
6																								
7																								
8																								
9																								
10																								
11																								
12																								

Pace Project No./ Lab I.D.: 60394853

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
200.7 Total Metals*: B, Ca	Jason R. Franks / SCS	3/10/22	15:00	Victor B Pace	3/10/22	1500	1-7	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jason R. Franks

SIGNATURE of SAMPLER: Jason R. Franks

DATE Signed (MM/DD/YY): 3/10/22

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

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

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

Client: Evergy

Profile # 9657,4

Site: JEC BASA/BAL CCR

Notes

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

Container Codes

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

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

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

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

Work Order Number: 10039485 3

ATTACHMENT 2-2
September 2022 Annual Assessment
Sampling Event Laboratory Analytical Report

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

October 19, 2022

Jake Humphrey
Evergy, Inc.
818 S Kansas Avenue
Topeka, KS 66612

RE: Project: JEC BASA/BAL CCR
Pace Project No.: 60410000

Dear Jake Humphrey:

Enclosed are the analytical results for sample(s) received by the laboratory on September 09, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Kansas City

REVISION_1 10/4/22

REVISION_2 10/14/22

REVISION_3 10/19/22 repackaged

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

Sincerely,

Alice Spiller

Alice Spiller
alice.spiller@pacelabs.com
(913)599-5665
PM Lab Management

Enclosures

cc: Laura Hines, Evergy, Inc.
Samantha Kaney, Haley & Aldrich
Melissa Michels, Evergy, Inc.
Danielle Oberbroeckling, Haley & Aldrich

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

CERTIFICATIONS

Project: JEC BASA/BAL CCR
Pace Project No.: 60410000

Pace Analytical Services Kansas
9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Inorganic Drinking Water Certification #: 10090
Arkansas Drinking Water
Arkansas Certification #: 22-031-0
Illinois Certification #: 2000302021-3
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212023-1
Oklahoma Certification #: 2022-057
Florida: Cert E871149 SEKS WET
Texas Certification #: T104704407-21-15
Utah Certification #: KS000212022-12
Illinois Certification #: 004592
Kansas Field Laboratory Accreditation: # E-92587
Missouri SEKS Micro Certification: 10070

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

SAMPLE SUMMARY

Project: JEC BASA/BAL CCR
Pace Project No.: 60410000

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60410000001	**BAA-2-090822**	Water	09/08/22 09:30	09/09/22 17:00
60410000002	**BAA-3-090822**	Water	09/08/22 13:30	09/09/22 17:00
60410000003	**BAA-6-090822**	Water	09/08/22 10:50	09/09/22 17:00
60410000004	**BAA-7-090822**	Water	09/08/22 10:00	09/09/22 17:00
60410000005	**DUP-BAA-090822**	Water	09/08/22 09:35	09/09/22 17:00

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Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: JEC BASA/BAL CCR
Pace Project No.: 60410000

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60410000001	**BAA-2-090822**	EPA 200.7	MRV	2	PASI-K
		SM 2540C	TML	1	PASI-K
		SM 4500-H+B	ET	1	PASI-K
		EPA 300.0	CRN2, RKA	3	PASI-K
60410000002	**BAA-3-090822**	EPA 200.7	MRV	2	PASI-K
		SM 2540C	TML	1	PASI-K
		SM 4500-H+B	ET	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60410000003	**BAA-6-090822**	EPA 200.7	MRV	2	PASI-K
		SM 2540C	TML	1	PASI-K
		SM 4500-H+B	ET	1	PASI-K
		EPA 300.0	CRN2, RKA	3	PASI-K
60410000004	**BAA-7-090822**	EPA 200.7	MRV	2	PASI-K
		SM 2540C	TML	1	PASI-K
		SM 4500-H+B	ET	1	PASI-K
		EPA 300.0	CRN2, RKA	3	PASI-K
60410000005	**DUP-BAA-090822**	EPA 200.7	MRV	2	PASI-K
		SM 2540C	TML	1	PASI-K
		SM 4500-H+B	ET	1	PASI-K
		EPA 300.0	CRN2, RKA	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City

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

PROJECT NARRATIVE

Project: JEC BASA/BAL CCR
Pace Project No.: 60410000

Date: October 19, 2022

Amended 10/14/22 to report data from review/reanalysis of fluoride due to intereferences on original run, new data has been reported.
Amended 10/4/22 to include sulfate re-analysis data.

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

PROJECT NARRATIVE

Project: JEC BASA/BAL CCR
Pace Project No.: 60410000

Method: **EPA 200.7**
Description: 200.7 Metals, Total
Client: Evergy Kansas Central, Inc.
Date: October 19, 2022

General Information:
5 samples were analyzed for EPA 200.7 by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 200.7 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 807547

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60410000001,60410030001

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

- MS (Lab ID: 3212528)
  - Calcium
- MSD (Lab ID: 3212529)
  - Calcium

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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

PROJECT NARRATIVE

Project: JEC BASA/BAL CCR
Pace Project No.: 60410000

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: Evergy Kansas Central, Inc.
Date: October 19, 2022

General Information:
5 samples were analyzed for SM 2540C by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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

PROJECT NARRATIVE

Project: JEC BASA/BAL CCR
Pace Project No.: 60410000

Method: **SM 4500-H+B**
Description: 4500H+ pH, Electrometric
Client: Evergy Kansas Central, Inc.
Date: October 19, 2022

General Information:
5 samples were analyzed for SM 4500-H+B by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H6: Analysis initiated outside of the 15 minute EPA required holding time.
- BAA-2-090822 (Lab ID: 60410000001)
- BAA-3-090822 (Lab ID: 60410000002)
- BAA-6-090822 (Lab ID: 60410000003)
- BAA-7-090822 (Lab ID: 60410000004)
- DUP-BAA-090822 (Lab ID: 60410000005)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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

PROJECT NARRATIVE

Project: JEC BASA/BAL CCR
Pace Project No.: 60410000

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: Evergy Kansas Central, Inc.
Date: October 19, 2022

General Information:
5 samples were analyzed for EPA 300.0 by Pace Analytical Services Kansas City. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 807422

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60409918001,60409979002

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

- MS (Lab ID: 3212225)
  - Fluoride

QC Batch: 808515

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60410000004,60410030004

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

- MS (Lab ID: 3216066)
  - Chloride
- MSD (Lab ID: 3216067)
  - Chloride

QC Batch: 809890

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60410000002

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

- MS (Lab ID: 3221176)
  - Sulfate

QC Batch: 811017

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60409975001,60409979004

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

- MS (Lab ID: 3225334)
  - Fluoride
- MS (Lab ID: 3225336)
  - Fluoride

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

PROJECT NARRATIVE

Project: JEC BASA/BAL CCR
Pace Project No.: 60410000

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: Evergy Kansas Central, Inc.
Date: October 19, 2022

Additional Comments:

Analyte Comments:

QC Batch: 808515

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

- MS (Lab ID: 3216066)
  - Chloride
- MS (Lab ID: 3216068)
  - Sulfate
- MSD (Lab ID: 3216067)
  - Chloride

QC Batch: 809890

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

- MS (Lab ID: 3221176)
  - Sulfate
- MSD (Lab ID: 3221177)
  - Sulfate

This data package has been reviewed for quality and completeness and is approved for release.

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

ANALYTICAL RESULTS

Project: JEC BASA/BAL CCR
Pace Project No.: 60410000

Sample: BAA-2-090822 **Lab ID: 60410000001** Collected: 09/08/22 09:30 Received: 09/09/22 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron, Total Recoverable	**1.1**	mg/L	0.10	1	09/14/22 09:42	09/19/22 10:58	7440-42-8	
Calcium, Total Recoverable	**170**	mg/L	0.20	1	09/14/22 09:42	09/19/22 10:58	7440-70-2	M1
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**1170**	mg/L	13.3	1		09/15/22 11:21		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Kansas City							
pH at 25 Degrees C	**7.1**	Std. Units	0.10	1		09/12/22 11:28		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**131**	mg/L	20.0	20		09/15/22 17:56	16887-00-6	
Fluoride	**0.25**	mg/L	0.20	1		10/05/22 15:53	16984-48-8	
Sulfate	**652**	mg/L	50.0	50		09/14/22 17:41	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: JEC BASA/BAL CCR
Pace Project No.: 60410000

Sample: BAA-3-090822 **Lab ID: 60410000002** Collected: 09/08/22 13:30 Received: 09/09/22 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron, Total Recoverable	**2.1**	mg/L	0.10	1	09/14/22 09:42	09/19/22 11:04	7440-42-8	
Calcium, Total Recoverable	**493**	mg/L	0.20	1	09/14/22 09:42	09/19/22 11:04	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**3610**	mg/L	125	1		09/15/22 11:21		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Kansas City							
pH at 25 Degrees C	**7.0**	Std. Units	0.10	1		09/12/22 11:30		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**138**	mg/L	10.0	10		09/14/22 18:39	16887-00-6	
Fluoride	**<0.20**	mg/L	0.20	1		09/14/22 17:55	16984-48-8	
Sulfate	**1780**	mg/L	200	200		09/28/22 10:35	14808-79-8	M1

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: JEC BASA/BAL CCR
Pace Project No.: 60410000

Sample: BAA-6-090822 **Lab ID: 60410000003** Collected: 09/08/22 10:50 Received: 09/09/22 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron, Total Recoverable	**5.8**	mg/L	0.10	1	09/14/22 09:42	09/19/22 11:06	7440-42-8	
Calcium, Total Recoverable	**477**	mg/L	0.20	1	09/14/22 09:42	09/19/22 11:06	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**4530**	mg/L	143	1		09/15/22 11:21		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Kansas City							
pH at 25 Degrees C	**7.5**	Std. Units	0.10	1		09/12/22 11:28		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**306**	mg/L	50.0	50		09/14/22 19:38	16887-00-6	
Fluoride	**<0.20**	mg/L	0.20	1		10/05/22 16:31	16984-48-8	
Sulfate	**2090**	mg/L	500	500		09/15/22 18:21	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: JEC BASA/BAL CCR
Pace Project No.: 60410000

Sample: BAA-7-090822 **Lab ID: 60410000004** Collected: 09/08/22 10:00 Received: 09/09/22 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron, Total Recoverable	**0.70**	mg/L	0.10	1	09/14/22 09:42	09/19/22 11:14	7440-42-8	
Calcium, Total Recoverable	**259**	mg/L	0.20	1	09/14/22 09:42	09/19/22 11:14	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**1970**	mg/L	66.7	1		09/15/22 11:21		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Kansas City							
pH at 25 Degrees C	**7.6**	Std. Units	0.10	1		09/12/22 11:28		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**137**	mg/L	10.0	10		09/20/22 11:28	16887-00-6	M1
Fluoride	**<0.20**	mg/L	0.20	1		10/05/22 16:43	16984-48-8	
Sulfate	**986**	mg/L	100	100		09/21/22 14:59	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: JEC BASA/BAL CCR
Pace Project No.: 60410000

Sample: DUP-BAA-090822 **Lab ID: 60410000005** Collected: 09/08/22 09:35 Received: 09/09/22 17:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City							
Boron, Total Recoverable	**1.0**	mg/L	0.10	1	09/14/22 09:42	09/19/22 11:16	7440-42-8	
Calcium, Total Recoverable	**166**	mg/L	0.20	1	09/14/22 09:42	09/19/22 11:16	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**1260**	mg/L	40.0	1		09/15/22 11:21		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Kansas City							
pH at 25 Degrees C	**7.5**	Std. Units	0.10	1		09/12/22 11:28		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**161**	mg/L	10.0	10		09/20/22 13:22	16887-00-6	
Fluoride	**<0.20**	mg/L	0.20	1		10/05/22 16:56	16984-48-8	
Sulfate	**626**	mg/L	50.0	50		09/20/22 13:34	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: JEC BASA/BAL CCR
Pace Project No.: 60410000

QC Batch: 807547 | 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: 60410000001, 60410000002, 60410000003, 60410000004, 60410000005

METHOD BLANK: 3212526 Matrix: Water
Associated Lab Samples: 60410000001, 60410000002, 60410000003, 60410000004, 60410000005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	mg/L	<0.10	0.10	09/19/22 10:56	
Calcium	mg/L	<0.20	0.20	09/19/22 10:56	

LABORATORY CONTROL SAMPLE: 3212527

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	0.93	93	85-115	
Calcium	mg/L	10	9.6	96	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3212528 3212529

Parameter	Units	60410000001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	mg/L	1.1	1	1	1.9	2.0	87	92	70-130	3	20	
Calcium	mg/L	170	10	10	169	175	-6	45	70-130	3	20	M1

MATRIX SPIKE SAMPLE: 3212530

Parameter	Units	60410030001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1.7	1	2.6	93	70-130	
Calcium	mg/L	210	10	217	75	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: JEC BASA/BAL CCR
Pace Project No.: 60410000

QC Batch: 807819 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60410000001, 60410000002, 60410000003, 60410000004, 60410000005

METHOD BLANK: 3213723 Matrix: Water
Associated Lab Samples: 60410000001, 60410000002, 60410000003, 60410000004, 60410000005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	09/15/22 11:19	

LABORATORY CONTROL SAMPLE: 3213724

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1040	104	80-120	

SAMPLE DUPLICATE: 3213725

Parameter	Units	60409826001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	571	552	3	10	

SAMPLE DUPLICATE: 3213726

Parameter	Units	60410000001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1170	1200	3	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: JEC BASA/BAL CCR
Pace Project No.: 60410000

QC Batch: 807086
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60410000001, 60410000002, 60410000003, 60410000004, 60410000005

SAMPLE DUPLICATE: 3210910

Parameter	Units	60409717001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	9.0	9.0	0	5	H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: JEC BASA/BAL CCR
Pace Project No.: 60410000

QC Batch: 807422
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60410000001, 60410000002, 60410000003

METHOD BLANK: 3212221 Matrix: Water
Associated Lab Samples: 60410000001, 60410000002, 60410000003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<1.0	1.0	09/13/22 10:15	
Fluoride	mg/L	<0.20	0.20	09/13/22 10:15	
Sulfate	mg/L	<1.0	1.0	09/13/22 10:15	

METHOD BLANK: 3213161 Matrix: Water
Associated Lab Samples: 60410000001, 60410000002, 60410000003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<1.0	1.0	09/14/22 08:49	
Fluoride	mg/L	<0.20	0.20	09/14/22 08:49	
Sulfate	mg/L	<1.0	1.0	09/14/22 08:49	

METHOD BLANK: 3214382 Matrix: Water
Associated Lab Samples: 60410000001, 60410000002, 60410000003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<1.0	1.0	09/15/22 08:54	
Fluoride	mg/L	<0.20	0.20	09/15/22 08:54	
Sulfate	mg/L	<1.0	1.0	09/15/22 08:54	

LABORATORY CONTROL SAMPLE: 3212222

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	2.3	94	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

LABORATORY CONTROL SAMPLE: 3213162

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	97	90-110	
Fluoride	mg/L	2.5	2.5	99	90-110	
Sulfate	mg/L	5	5.1	103	90-110	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: JEC BASA/BAL CCR
Pace Project No.: 60410000

LABORATORY CONTROL SAMPLE: 3214383

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	2.4	96	90-110	
Sulfate	mg/L	5	4.8	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3212223 3212224

Parameter	Units	60409918001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	3.6J	25	25	24.2	25.4	82	87	80-120	5	15	
Fluoride	mg/L	ND	12.5	12.5	11.6	12.0	93	96	80-120	3	15	
Sulfate	mg/L	27.5	25	25	49.2	51.2	87	95	80-120	4	15	

MATRIX SPIKE SAMPLE: 3212225

Parameter	Units	60409979002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	69.8	50	119	98	80-120	
Fluoride	mg/L	<0.20		1.2			M1
Sulfate	mg/L	376	250	655	112	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: JEC BASA/BAL CCR
Pace Project No.: 60410000

QC Batch: 808515
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60410000004, 60410000005

METHOD BLANK: 3216064 Matrix: Water
Associated Lab Samples: 60410000004, 60410000005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<1.0	1.0	09/20/22 09:08	
Sulfate	mg/L	<1.0	1.0	09/20/22 09:08	

METHOD BLANK: 3218088 Matrix: Water
Associated Lab Samples: 60410000004, 60410000005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<1.0	1.0	09/21/22 08:57	
Sulfate	mg/L	<1.0	1.0	09/21/22 08:57	

LABORATORY CONTROL SAMPLE: 3216065

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	94	90-110	
Sulfate	mg/L	5	4.9	97	90-110	

LABORATORY CONTROL SAMPLE: 3218089

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	94	90-110	
Sulfate	mg/L	5	4.8	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3216066 3216067

Parameter	Units	60410000004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	137	50	50	227	207	179	140	80-120	9	15	E,M1
Sulfate	mg/L	986	500	500	1500	1510	104	104	80-120	0	15	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: JEC BASA/BAL CCR
Pace Project No.: 60410000

MATRIX SPIKE SAMPLE: 3216068

Parameter	Units	60410030004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	248	250	484	94	80-120	
Sulfate	mg/L	1600	500	2070	93	80-120	E

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: JEC BASA/BAL CCR
Pace Project No.: 60410000

QC Batch: 809890
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60410000002

METHOD BLANK: 3221174 Matrix: Water
Associated Lab Samples: 60410000002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	<1.0	1.0	09/28/22 08:49	

LABORATORY CONTROL SAMPLE: 3221175

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	4.9	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3221176 3221177

Parameter	Units	60410000002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	1780	2000	2000	4440	4190	133	120	80-120	6	15	E,M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: JEC BASA/BAL CCR
Pace Project No.: 60410000

QC Batch: 811017 | 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: 60410000001, 60410000003, 60410000004, 60410000005

METHOD BLANK: 3225332 Matrix: Water
Associated Lab Samples: 60410000001, 60410000003, 60410000004, 60410000005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fluoride	mg/L	<0.20	0.20	10/05/22 11:28	

LABORATORY CONTROL SAMPLE: 3225333

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

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3225334 3225335

Parameter	Units	60409975001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	<0.20	2.5	2.5	2.1	2.2	77	81	80-120	5	15	M1

MATRIX SPIKE SAMPLE: 3225336

Parameter	Units	60409979004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	<0.20	2.5	1.0	37	80-120	M1

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: JEC BASA/BAL CCR
Pace Project No.: 60410000

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

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.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: JEC BASA/BAL CCR
Pace Project No.: 60410000

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60410000001	**BAA-2-090822**	EPA 200.7	807547	EPA 200.7	807606
60410000002	**BAA-3-090822**	EPA 200.7	807547	EPA 200.7	807606
60410000003	**BAA-6-090822**	EPA 200.7	807547	EPA 200.7	807606
60410000004	**BAA-7-090822**	EPA 200.7	807547	EPA 200.7	807606
60410000005	**DUP-BAA-090822**	EPA 200.7	807547	EPA 200.7	807606
60410000001	**BAA-2-090822**	SM 2540C	807819		
60410000002	**BAA-3-090822**	SM 2540C	807819		
60410000003	**BAA-6-090822**	SM 2540C	807819		
60410000004	**BAA-7-090822**	SM 2540C	807819		
60410000005	**DUP-BAA-090822**	SM 2540C	807819		
60410000001	**BAA-2-090822**	SM 4500-H+B	807086		
60410000002	**BAA-3-090822**	SM 4500-H+B	807086		
60410000003	**BAA-6-090822**	SM 4500-H+B	807086		
60410000004	**BAA-7-090822**	SM 4500-H+B	807086		
60410000005	**DUP-BAA-090822**	SM 4500-H+B	807086		
60410000001	**BAA-2-090822**	EPA 300.0	807422		
60410000001	**BAA-2-090822**	EPA 300.0	811017		
60410000002	**BAA-3-090822**	EPA 300.0	807422		
60410000002	**BAA-3-090822**	EPA 300.0	809890		
60410000003	**BAA-6-090822**	EPA 300.0	807422		
60410000003	**BAA-6-090822**	EPA 300.0	811017		
60410000004	**BAA-7-090822**	EPA 300.0	808515		
60410000004	**BAA-7-090822**	EPA 300.0	811017		
60410000005	**DUP-BAA-090822**	EPA 300.0	808515		
60410000005	**DUP-BAA-090822**	EPA 300.0	811017		

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-LENE-0009_Sample	WO# : 60410000
	Revision: 2	Effective Date: 01/12/2022

Client Name: Evergy Central

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

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

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

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

Thermometer Used: T-209 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 0.6 **Corr. Factor** 0 **Corrected** 0.6

Date and initials of person examining contents: BE 9/10

Temperature should be above freezing to 6°C

Chain of Custody present:	☒Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☒No ☐N/A	
Rush Turn Around Time requested: 7 Day	☐Yes ☒No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☒Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☑No ☐N/A	
Filtered volume received for dissolved tests?	☐Yes ☒No ☐N/A	
Sample labels match COC: Date / time / ID / analyses	☒Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO3, H2SO4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) **LOT#:** 616003	☒Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☒No ☐N/A	
Headspace in VOA vials (>6mm):	☐Yes ☒No ☐N/A	
Samples from USDA Regulated Area: State:	☐Yes ☒No ☐N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☒No ☐N/A	

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Pace Analytical
www.pacelabs.com

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:	EVERGY KANSAS CENTRAL, INC.
Address:	Jeffrey Energy Center (JEC)
	818 Kansas Ave, Topeka, KS 66612
Email To:	melissa.michels@evergy.com
Phone: 785-575-8113	Fax:
Requested Due Date/TAT:	7 day

Section B Required Project Information:

Report To:	Melissa Michels, Samantha Kaney, Danielle Obe
Copy To:	Jared Morrison, Jake Humphrey, Laura Hines
Purchase Order No.:	
Project Name:	JEC BASA/BAL CCR
Project Number:	

Section C Invoice Information:

Attention:	Accounts Payable
Company Name:	EVERGY KANSAS CENTRAL, INC
Address:	SEE SECTION A
Pace Quote Reference:	
Pace Project Manager:	Alice Spiller 913-563-1403
Pace Profile #:	9657, 4

REGULATORY AGENCY

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

Site Location STATE: KS

Section D Required Client Information

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

Valid Matrix Codes

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

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COLLECTED: COMPOSITE START TIME	COLLECTED: COMPOSITE END/GRAB DATE	COLLECTED: COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	200.7 Total Metals*	4500 H+B pH	300: Cl, F, SO4	2540C TDS	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
																		Requested Analysis Filtered (Y/N)	N	N	N	N		
1	BAA-2-090822	WT	G	-	-	09/08/22	9:30	-	4	3		1							X	X	X	X		60410000
2	BAA-3-090822	WT	G	-	-	09/08/22	13:30	-	4	3		1							X	X	X	X		
3	BAA-6-090822	WT	G	-	-	09/08/22	10:50	-	4	3		1							X	X	X	X		
4	BAA-7-090822	WT	G	-	-	09/08/22	10:00	-	4	3		1							X	X	X	X		
5	DUP-BAA-090822	WT	G	-	-	09/08/22	9:35	-	4	3		1							X	X	X	X		
6																								
7																								
8																								
9																								
10																								
11																								
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
200.7 Total Metals*: B, Ca	Jason R. Franks / SCS	9/9/22	17:00		9/9/22	1700	0.6	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jason R. Franks

SIGNATURE of SAMPLER: J. R. Franks

DATE Signed (MM/DD/YY): 9/9/22

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

Client: Evergy Kansas Central Profile # 9667, 4

Site: JEC BASA/BAL CCR Notes

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

Container Codes

Glass				Plastic		Misc.	
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar	BP1C	1L NAOH plastic	I	Wipe/Swab
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil jar	BP1N	1L HNO3 plastic	SP5T	120mL Coliform Na Thiosulfate
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar	BP1S	1L H2SO4 plastic	ZPLC	Ziploc Bag
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide	BP1U	1L unpreserved plastic	AF	Air Filter
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass	BP1Z	1L NaOH, Zn Acetate	C	Air Cassettes
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass	BP2C	500mL NAOH plastic	R	Terracore Kit
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass	BP2N	500mL HNO3 plastic	U	Summa Can
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass	BP2S	500mL H2SO4 plastic		
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass	BP2U	500mL unpreserved plastic		
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass	BP2Z	500mL NaOH, Zn Acetate	Matrix	
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass	BP3C	250mL NaOH plastic		
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass	BP3F	250mL HNO3 plastic - field filtered	WT	Water
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass	BP3N	250mL HNO3 plastic	SL	Solid
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass	BP3U	250mL unpreserved plastic	NAL	Non-aqueous Liquid
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass	BP3S	250mL H2SO4 plastic	OL	OIL
		AG5U	100mL unpres amber glass	BP3Z	250mL NaOH, Zn Acetate	WP	Wipe
				BP4U	125mL unpreserved plastic	DW	Drinking Water
				BP4N	125mL HNO3 plastic		
				BP4S	125mL H2SO4 plastic		
				WPDU	16oz unpresserved plstic		

Work Order Number: 60410000

CHAIN-OF-CUSTODY / Analytical Request Document

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

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at https://info.pacelabs.com/hubfs/pas-standard-terms.pdf.

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Evergy Kansas Central, Inc.	Report To: Jake Humphrey	Attention:
Address: 400 E Van Buren St	Copy To: Laura Hines, Samantha Kaney, Melissa Michels	Company Name:
Suite 545 Phoenix, AZ 85004	Danielle Oberbroeckling	Address:
Email: doberbroeckling@haleyaldrich.com	Purchase Order #:	Pace Quote:
Phone: 507-251-2232 Fax:	Project Name: JEC BASA/BAL	Pace Project Manager: alice.spiller@pacelabs.com,
Requested Due Date:	Project #:	Pace Profile #: 9657, line 5

Regulatory Agency
State / Location
KS

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	**SAMPLE ID** **One Character per box.** **(A-Z, 0-9 / , -)** **Sample Ids must be unique**	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Requested Analysis Filtered (Y/N) Y/N	Analyses Test	200.7 Metals B,Ca	300.0 Anions Cl,F,S	Total Dissolved Solids (TDS)	pH									Residual Chlorine (Y/N)	
1																															
2																															
3																															
4																															
5																															
6																															
7																															
8																															
9																															
10																															
11																															
12																															

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			

SAMPLER NAME AND SIGNATURE		TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:					
SIGNATURE of SAMPLER:	DATE Signed:				