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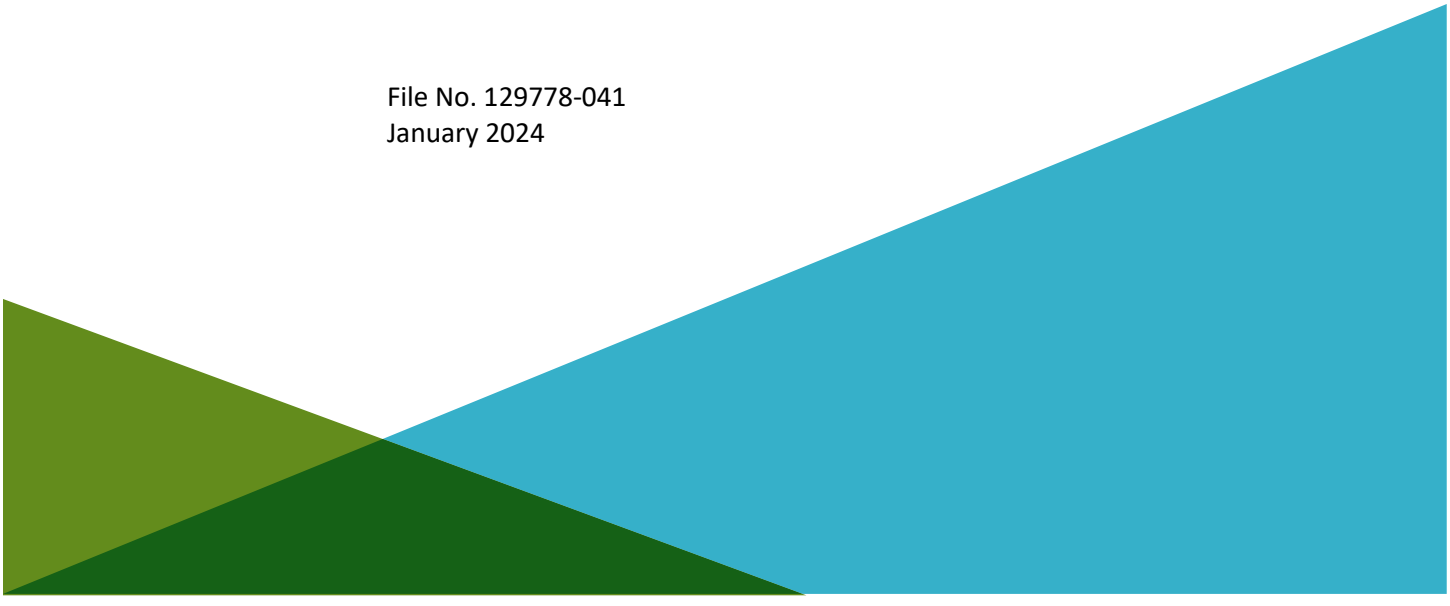
2023 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
847 LANDFILL
LAWRENCE ENERGY CENTER
LAWRENCE, KANSAS

by
Haley & Aldrich, Inc.
Cleveland, Ohio

for
Evergy Kansas Central, Inc.
Topeka, Kansas

File No. 129778-041
January 2024



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This Annual Groundwater Monitoring and Corrective Action Report documents the groundwater monitoring program for the Lawrence Energy Center (LEC) 847 Landfill consistent with applicable sections of 257.90 through 257.98, and describes activities conducted in the prior calendar year (2023) and documents compliance with the U.S. Environmental Protection Agency Coal Combustion Residual Rule. I certify that the 2023 Annual Groundwater Monitoring and Corrective Action Report for the LEC 847 Landfill 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:	Principal Consultant
Company:	Haley & Aldrich, Inc.

1. Introduction

This 2023 Annual Groundwater Monitoring and Corrective Action Report (Annual Report) addresses the 847 Landfill (also known as Ash Landfill 847) at the Lawrence Energy Center (LEC), 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 Title 40 Code of Federal Regulations (40 CFR), subsection 257.90(e). The Annual Report documents the groundwater monitoring system for the 847 Landfill consistent with applicable sections of 257.90 through 257.98, and describes activities conducted in the prior calendar year (2023) 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 short 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, 2023), the 847 Landfill 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, 2023), the 847 Landfill 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 (2023). The statistical evaluation reports for semi-annual assessment monitoring sampling events from September 2022 and March 2023 were completed in February 2023 and July 2023, 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 (2023); therefore, an assessment monitoring program was not initiated for the 847 Landfill in 2023.

1.1.4 40 CFR § 257.90€(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 847 Landfill remains in detection monitoring, and no Appendix IV constituents were collected or analyzed in 2023. Therefore, no statistically significant levels above the groundwater protection standard were identified for the 847 Landfill.

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 2023 for this unit. The 847 Landfill remained in detection monitoring during 2023.

1.1.4.3 40 CFR § 257.90(e)(6)(€(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 847 Landfill in 2023; 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 2023 for this unit. The 847 Landfill remained in detection monitoring during 2023.

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 847 Landfill 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 2023.

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 LEC 847 Landfill. The 847 Landfill is 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 in accordance with § 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 LEC 847 Landfill 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 2023.

2.2.1 Status of the Groundwater Monitoring Program

The 847 Landfill remained in the detection monitoring program during 2023.

2.2.2 Key Actions Completed

The 2022 Annual Groundwater Monitoring and Corrective Action Report was completed in January 2023. Statistical evaluation was completed in February 2023 on analytical data from the September 2022 semi-annual detection monitoring sampling event. Semi-annual detection monitoring events were completed in March and September 2023. Statistical evaluation was completed in July 2023 on

analytical data from the March 2023 semi-annual detection monitoring sampling event. Statistical evaluation of the results from the September 2023 semi-annual detection monitoring sampling event are due to be completed in January 2024 and will be reported in the next annual report.

2.2.3 Problems Encountered

Problems encountered during groundwater monitoring activities in 2023 consisted of:

- A sampling error during the March 2023 semi-annual detection monitoring sampling event necessitated a verification sample to be collected from monitoring well MW-31R during April 2023.
  - A laboratory analytical error required the laboratory to reanalyze chloride, fluoride, and total dissolved solids for the MW-31R verification sample that was collected in April 2023.
- Laboratory analytical errors required the laboratory to reanalyze the following analytical results for the September 2023 semi-annual detection monitoring sampling event:
  - Chloride and sulfate for monitoring well MW-35;
  - Boron, calcium, chloride, sulfate, and total dissolved solids for monitoring well MW-31R; and
  - Boron, calcium, and sulfate for monitoring well MW-33.

2.2.4 Actions to Resolve Problems

The resolution of problems encountered in 2023 included collecting a verification groundwater sample from MW-31R and additional laboratory analyses, as described above. The analytical results were revised accordingly. No other problems were encountered at the 847 Landfill in 2023; therefore, no additional actions to resolve problems were required.

2.2.5 Project Key Activities for Upcoming Year

Key activities planned for 2024 include completion of the 2023 Annual Groundwater Monitoring and Corrective Action Report, statistical evaluation of semi-annual detection monitoring analytical data collected in September 2023, 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 847 Landfill 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 during 2023.

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 2023. A summary including the sample names, dates of sample collection, field parameters, and monitoring data obtained for the groundwater monitoring program for the 847 Landfill 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 2023 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 2023. Only detection monitoring was conducted in 2023.

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 2023.

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 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 2023; 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 847 Landfill 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 847 Landfill remains in detection monitoring, and no assessment monitoring samples were collected or analyzed in 2023. 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 2023. The 847 Landfill remained in detection monitoring during 2023.

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 2023; therefore, no demonstration or certification is applicable for this unit.

TABLE

TABLE I
SUMMARY OF ANALYTICAL RESULTS - 2023 DETECTION MONITORING
EVERGY KANSAS CENTRAL, INC.
LAWRENCE ENERGY CENTER 847 LANDFILL
LAWRENCE, KANSAS

Location	Upgradient				Downgradient								
	MW-32		MW-35		MW-31R					MW-33		MW-34	
Measure Point (TOC)	861.96		862.52		857.67					855.44		871.96	
Sample Name	MW-32-030823	MW-32-090723	MW-35-030823	MW-35-090723	MW-31R-030823	DUP01-LEC LF-030823	MW-31R-042723	MW-31R-090723	LEC 847LF-DUP-090723	MW-33-030823	MW-33-090723	MW-34-030823	MW-34-090723
Sample Date	3/8/2023	09/07/2023	03/08/2023	09/07/2023	03/08/2023	03/08/2023	04/27/2023	09/07/2023	09/07/2023	03/08/2023	09/07/2023	03/08/2023	09/07/2023
Final Lab Report Date	4/25/2023	9/25/2023	4/25/2023	9/25/2023	4/25/2023	4/25/2023	5/9/2023	9/25/2023	9/25/2023	4/25/2023	9/25/2023	4/25/2023	9/25/2023
Final Lab Report Revision Date	N/A	11/21/2023	N/A	11/21/2023	N/A	N/A	5/15/2023	11/21/2023	11/21/2023	N/A	11/21/2023	N/A	11/21/2023
Lab Data Reviewed and Accepted	5/30/2023	12/19/2023	5/30/2023	12/19/2023	5/30/2023	5/30/2023	5/30/2023	12/19/2023	12/19/2023	5/30/2023	12/19/2023	5/30/2023	12/19/2023
Depth to Water (ft btoc)	46.45	47.10	48.80	53.30	42.66	-	42.34	43.38	43.38	40.32	41.19	56.69	57.36
Temperature (Deg C)	12.61	20.48	12.80	20.56	12.61	-	13.55	24.64	-	12.35	18.67	11.80	24.75
Conductivity (µS/cm)	924	799	3,520	28,100	4,480	-	8,630	3,200	-	1,940	12,300	1,750	14,700
Turbidity (NTU)	0.0	0.0	1.1	4.5	0.0	-	0.0	0.0	-	0.0	0.0	0.0	0.0
Dissolved Oxygen, Field (mg/L)	0.00	0.00	0.54	0.00	0.00	-	1.05	0.00	-	0.56	0.00	1.05	0.00
ORP, Field (mV)	-164	-101	-269	-88	-193	-	-129	-179	-	-277	-129	-302	-279
pH, Field (su)	7.63	7.52	7.5	7.22	7.45	-	6.76	7.34	-	7.57	7.34	8.07	7.64
Boron, Total (mg/L)	**0.17**	**0.18**	**1.6**	**1.7**	**0.43**	**0.46**	**0.15**	**0.47**	**0.44**	**1.4**	**1.6**	**1.9**	**1.9**
Calcium, Total (mg/L)	**59.5**	**63.4**	**491**	**515**	**204**	**208**	**158**	**220**	**217**	**244**	**265**	**195**	**203**
Chloride (mg/L)	**105**	**95.6**	**13,700**	**13,400**	**3,490**	**3,770**	**2,060**	**3,080**	**3,650**	**6,990**	**6,950**	**6,320**	**6,310**
Fluoride (mg/L)	< 0.20	**0.24**	< 0.40	< 0.20	**6.5**	**8.7**	< 0.20	< 0.20	< 0.20	< 0.40	< 0.20	< 0.40	< 0.20
Sulfate (mg/L)	**5.9**	**5.9**	**566**	**287**	**157**	**171**	**30.3**	**98.7**	**107**	**290**	**606**	**429**	**508**
pH (su)	**7.6**	**7.4**	**7.0**	**7.0**	**7.2**	**7.2**	**7.0**	**7.0**	**7.1**	**7.2**	**7.3**	**7.5**	**7.4**
TDS (mg/L)	**544**	**526**	**27,600**	**28,200**	**2,960**	**5,480**	**2,820**	**7,740**	**2,590**	**13,500**	**13,600**	**13,200**	**12,800**

Notes:
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
mV = millivolt
NTU = Nephelometric Turbidity Unit
ORP = oxidation reduction potential
su = standard unit
TDS = total dissolved solids
TOC = top of casing

FIGURES

LEGEND

- MONITORING WELL
- WATER QUALITY ONLY
- 847 LANDFILL BOUNDARY
- FUTURE 847 LANDFILL BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. AERIAL IMAGERY SOURCE: ESRI, 15 MARCH 2022

N

0 250 500
SCALE IN FEET

HALEY ALDRICH

EVERGY KANSAS CENTRAL, INC.
LAWRENCE ENERGY CENTER
LAWRENCE, KANSAS

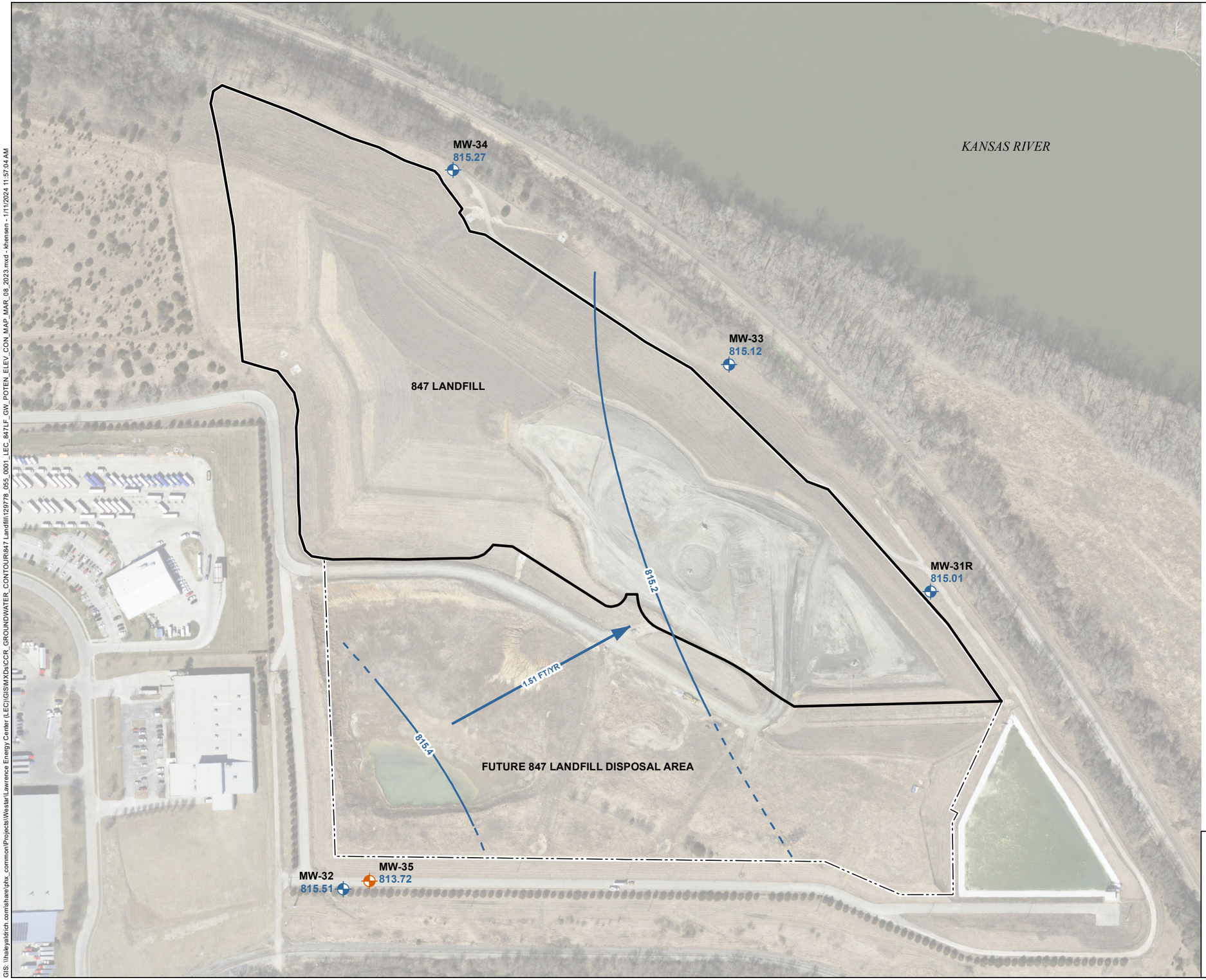
847 LANDFILL
MONITORING WELL LOCATION MAP

evergy

JANUARY 2024

FIGURE 1

GIS: \\haleyaldrich.com\share\phx_common\Projects\Westar\GIS\Lawrence_Energy_Center\Maps\2023_12\129778_0043_0001_847LF_MONITORING_WELL_LOCATION_MAP.mxd - khensen - 1/11/2024 11:00:08 AM



LEGEND

- MONITORING WELL
- WATER QUALITY ONLY
- ESTIMATED GROUNDWATER POTENTIOMETRIC OBSERVATION ELEVATION CONTOUR, IN FEET, DASHED WHERE INFERRED
- GROUNDWATER FLOW DIRECTION AND APPROXIMATE GROUNDWATER FLOW RATE (FEET/YEAR)
- 847 LANDFILL BOUNDARY
- FUTURE 847 LANDFILL BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.

2. GROUNDWATER POTENTIOMETRIC ELEVATIONS WERE MEASURED 8 MARCH 2023.

3. GROUNDWATER ELEVATION IN **BOLD BLUE TEXT** AND IN FEET ABOVE MEAN SEA LEVEL (AMSL).

4. MW-35 WAS NOT INCLUDED IN THE DATA SET USED TO CREATE THE DISPLAYED GROUNDWATER POTENTIOMETRIC OBSERVATION ELEVATION LINES.

5. THE GROUNDWATER FLOW RATE WAS APPROXIMATED USING THE HYDRAULIC GRADIENT CALCULATED FROM GROUNDWATER POTENTIOMETRIC ELEVATIONS MEASURED 8 MARCH 2023 AND THE CONDUCTIVITY VALUES AND EFFECTIVE POROSITY VALUES OBTAINED FROM SLUG TESTS COMPLETED APRIL 2016.

6. AERIAL IMAGERY SOURCE: ESRI, 04 MARCH 2020

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SCALE IN FEET

HALEY ALDRICH

EVERGY KANSAS CENTRAL, INC.
LAWRENCE ENERGY CENTER
LAWRENCE, KANSAS

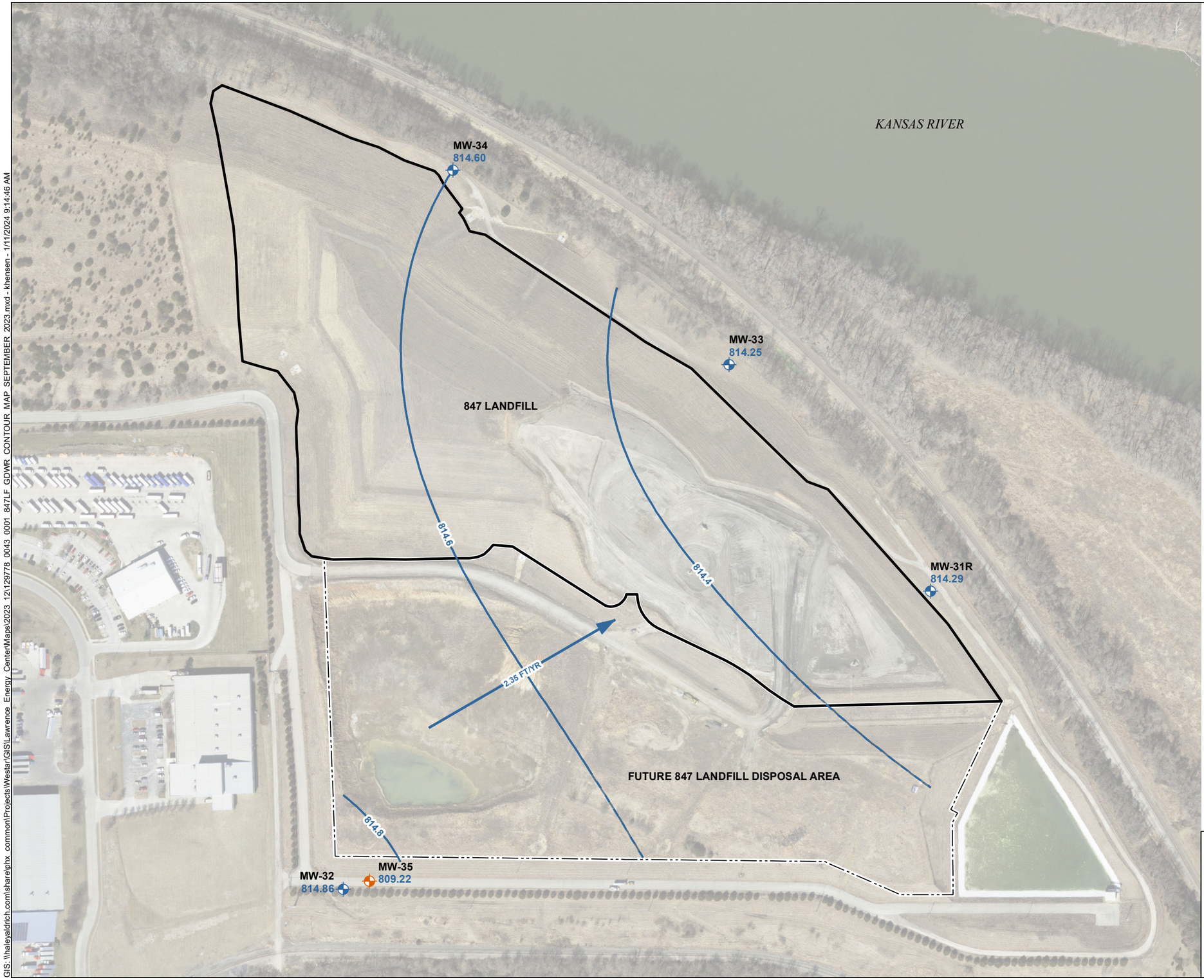
847 LANDFILL GROUNDWATER POTENTIOMETRIC ELEVATION CONTOUR MAP MARCH 8, 2023

evergy

JANUARY 2024

FIGURE 2

GIS: \\haleyaldrich.com\share\phx_common\Projects\Westar\Lawrence Energy Center (LEC)\GIS\MXDs\CCR_GROUNDWATER_CONTOUR\847 Landfill\129778_055_0001_LEC_847LF_GW_POTEN_ELEV_CON_MAP_MAR_08_2023.mxd - khensen - 1/11/2024 11:57:04 AM



LEGEND

- MONITORING WELL
- WATER QUALITY ONLY
- ESTIMATED GROUNDWATER POTENTIOMETRIC OBSERVATION ELEVATION CONTOUR, IN FEET, DASHED WHERE INFERRED
- GROUNDWATER FLOW DIRECTION AND APPROXIMATE GROUNDWATER FLOW RATE (FEET/YEAR)
- 847 LANDFILL BOUNDARY
- FUTURE 847 LANDFILL BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. GROUNDWATER POTENTIOMETRIC ELEVATIONS WERE MEASURED 7 SEPTEMBER 2023.
3. GROUNDWATER ELEVATION IN **BOLD BLUE TEXT** AND IN FEET ABOVE MEAN SEA LEVEL (AMSL).
4. MW-35 WAS NOT INCLUDED IN THE DATA SET USED TO CREATE THE DISPLAYED GROUNDWATER POTENTIOMETRIC OBSERVATION ELEVATION LINES.
5. THE GROUNDWATER FLOW RATE WAS APPROXIMATED USING THE HYDRAULIC GRADIENT CALCULATED FROM GROUNDWATER POTENTIOMETRIC ELEVATIONS MEASURED 7 SEPTEMBER 2023 AND THE CONDUCTIVITY VALUES AND EFFECTIVE POROSITY VALUES OBTAINED FROM SLUG TESTS COMPLETED APRIL 2016.
6. AERIAL IMAGERY SOURCE: ESRI, 15 MARCH 2022

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SCALE IN FEET

HALEY ALDRICH

EVERGY KANSAS CENTRAL, INC.
LAWRENCE ENERGY CENTER
LAWRENCE, KANSAS

847 LANDFILL GROUNDWATER POTENTIOMETRIC ELEVATION CONTOUR MAP SEPTEMBER 7, 2023

evergy

JANUARY 2024

FIGURE 3

GIS: \\haleyaldrich.com\share\phx_common\Projects\Westar\GIS\Lawrence_Energy_Center\Maps\2023_12\129778_0043_0001_847LF_GDWR_CONTOUR_MAP_SEPTEMBER_2023.mxd - khensen - 1/11/2024 9:14:46 AM

ATTACHMENT 1
Statistical Analyses

ATTACHMENT 1-1
September 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, 2024
File No. 129778-049

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 2022 Semi-Annual Groundwater Detection Monitoring Data Statistical Evaluation
Completed February 1, 2023
Lawrence Energy Center
847 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 2022** semi-annual detection monitoring groundwater sampling event for the Lawrence Energy Center (LEC) 847 Landfill. This semi-annual detection monitoring groundwater sampling event was completed on **September 9, 2022**, with laboratory results received and validated on **November 4, 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 the coal combustion residual (CCR) unit (40 CFR § 257.93(f)(1-4)). One statistical method used for these evaluations, the prediction limit (PL) method, was 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

Either an interwell or intrawell evaluation was used to complete the statistical evaluation of the referenced data set. Interwell evaluation compares the most recent values from downgradient compliance wells against a background dataset composed of upgradient well data (MW-32 and MW-35), and the intrawell evaluation compares the most recent values from each compliance well against a background dataset composed of its own historical data.

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 locations MW-32 and MW-35 (for interwell evaluation) 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 2022** for **interwell evaluation**. Background concentrations were updated through **September 2021** for **intrawell evaluation**.

RESULTS OF APPENDIX III DOWNGRADIENT STATISTICAL COMPARISONS

The sample concentrations from the downgradient wells for each of the Appendix III constituents from the **September 2022** semi-annual detection monitoring sampling event were compared to their respective background PLs (Table I). A sample concentration greater than the background UPL is considered to represent a SSI. Based on previous compliance sampling events, statistical evaluations, and associated alternative source demonstrations, an intrawell comparison is utilized for MW-34 for boron statistical evaluations. Interwell comparisons are being utilized for all other well and constituent

evaluations. The results of the groundwater assessment monitoring statistical evaluation are provided in Table I. **Based on this statistical evaluation of groundwater sampling data collected in September 2022, no SSIs above background PLs occurred at the LEC 847 Landfill.**

Attachments:

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

TABLE

TABLE I
SUMMARY OF SEMI-ANNUAL DETECTION GROUNDWATER MONITORING STATISTICAL EVALUATION
SEPTEMBER 2022 SAMPLING EVENT
LAWRENCE ENERGY CENTER - 847 LANDFILL
LAWRENCE, KANSAS

												Inter-well Analysis		Intra-well 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 2022 Concentration (mg/L)**	**Background Limits[1] (UPL) mg/L**	**SSI**	**Background Limit[2] (UPL) mg/L**	**SSI**
	CCR Appendix-III: Boron, Total (mg/L)															
MW-32 (upgradient)	18/18	0%	-	0.2	0.00006233	0.007895	0.04369	No	No	Stable		0.17	2.050			
MW-35 (upgradient)	18/18	0%	-	2.05	0.0174	0.1319	0.07219	No	No	Stable		1.8				
MW-31R	18/18	0%	-	0.75	0.01032	0.1016	0.1641	Yes	No	Stable	Normal	0.55		No		
MW-33	18/18	0%	-	1.7	0.008962	0.09467	0.05907	No	No	Decreasing	Normal	1.5		No		
MW-34	18/18	0%	-	2.2	0.01521	0.1233	0.06127	Yes	No	Stable	Normal	2.0			2.479	No
	CCR Appendix-III: Calcium, Total (mg/L)															
MW-32 (upgradient)	18/18	0%	-	66.6	6.012	2.452	0.04128	Yes	No	Stable		57.3	564			
MW-35 (upgradient)	18/18	0%	-	564	1313	36.24	0.07078	Yes	No	Stable		521				
MW-31R	18/18	0%	-	275	533	23.09	0.1012	No	No	Stable	Normal	237		No		
MW-33	18/18	0%	-	267	164.6	12.83	0.05146	No	No	Stable	Normal	242		No		
MW-34	18/18	0%	-	243	260.4	16.14	0.07499	No	No	Decreasing	Normal	191		No		
	CCR Appendix-III: Chloride (mg/L)															
MW-32 (upgradient)	18/18	0%	-	113	46.91	6.849	0.0684	No	No	Increasing		101	26600			
MW-35 (upgradient)	18/18	0%	-	26600	10360000	3218	0.2121	Yes	No	Increasing		17,200				
MW-31R	17/18	6%	1-1	5210	1124000	1060	0.2725	Yes	Yes	Stable	Normal	4,050		No		
MW-33	18/18	0%	-	9200	591400	769	0.1037	No	No	Stable	Normal	9,200		No		
MW-34	18/18	0%	-	9710	863000	929	0.1447	Yes	No	Stable	Normal	9,710		No		
	CCR Appendix-III: Fluoride (mg/L)															
MW-32 (upgradient)	13/18	28%	0.2-0.2	0.38	0.002332	0.04829	0.1971	Yes	No	Stable		< 0.20	1.7			
MW-35 (upgradient)	3/18	83%	0.1-0.2	1.7	0.3053	0.5525	1.362	No	No	Stable		< 0.20				
MW-31R	11/18	39%	0.2-0.2	0.73	0.03543	0.1882	0.5072	No	No	Decreasing	Normal	< 0.20		Yes		
MW-33	9/18	50%	0.2-0.2	1.5	0.2748	0.5243	0.8242	No	No	Stable	Non-parametric	< 0.20		Yes		
MW-34	13/18	28%	0.2-0.2	1.9	0.4281	0.6543	0.6245	No	No	Decreasing	Normal	< 0.20			3.33	No
	CCR Appendix-III: pH (lab) (SU)															
MW-32 (upgradient)	18/18	0%	-	7.9	0.0284	0.1685	0.02229	No	No	Stable		7.9	8.23			
MW-35 (upgradient)	18/18	0%	-	7.5	0.01703	0.1305	0.01814	No	No	Stable		7.5				
MW-31R	18/18	0%	-	7.5	0.01324	0.115	0.01572	No	No	Stable	Normal	7.5		No		
MW-33	18/18	0%	-	7.8	0.02487	0.1577	0.0212	Yes	No	Stable	Non-parametric	7.6		No		
MW-34	18/18	0%	-	7.9	0.02879	0.1697	0.02234	No	No	Decreasing	Normal	7.7		No		
	CCR Appendix-III: Sulfate (mg/L)															
MW-32 (upgradient)	18/18	0%	-	9.1	0.8991	0.9482	0.1385	No	No	Decreasing		5.9	666			
MW-35 (upgradient)	18/18	0%	-	666	1496	38.68	0.06265	Yes	No	Stable		620				
MW-31R	18/18	0%	-	187	841.2	29	0.192	No	No	Stable	Normal	186		No		
MW-33	18/18	0%	-	462	2471	49.71	0.1612	Yes	No	Decreasing	Non-parametric	268		No		
MW-34	18/18	0%	-	561	2712	52.08	0.1133	No	No	Stable	Normal	409		No		
	CCR Appendix-III: Total Dissolved Solids (TDS) (mg/L)															
MW-32 (upgradient)	18/18	0%	-	531	396	19.9	0.03985	No	No	Increasing		531	28800			
MW-35 (upgradient)	18/18	0%	-	28800	35670000	5972	0.2445	Yes	No	Increasing		27,900				
MW-31R	18/18	0%	-	9270	1289000	1135	0.1545	No	No	Stable	Normal	8,380		No		
MW-33	18/18	0%	-	14100	1218000	1104	0.08648	Yes	No	Stable	Normal	14,100		No		
MW-34	18/18	0%	-	14400	5582000	2363	0.2114	Yes	No	Increasing	Non-parametric	13,800		No		

Notes:

[1] Interwell background data collected from 08/16/2016 through 09/09/2022

[2] Intrawell background data collected from 08/16/2016 through 09/15/2021

CCR = coal combustion residuals
mg/L = milligrams per Liter
SSI = statistically significant increase
SU = standard unit
UPL = upper prediction limits

ATTACHMENT 1-2
March 2023 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, 2024
File No. 129778-049

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 2023 Semi-Annual Groundwater Detection Monitoring Data
Statistical Evaluation
Completed July 21, 2023
Lawrence Energy Center
847 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 **March 2023** semi-annual detection monitoring groundwater sampling event for the Lawrence Energy Center (LEC) 847 Landfill. This semi-annual detection monitoring groundwater sampling event was completed on **March 8, 2023**. Well MW-31R was resampled on April 27, 2023, to confirm the fluoride analytical concentration collected on March 8, 2023; the result was revised. All laboratory results were received and validated on **May 30, 2023**.

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 the coal combustion residual (CCR) unit (40 CFR § 257.93(f)(1-4)). One statistical method used for these evaluations, the prediction limit (PL) method, was 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

Either an interwell or intrawell evaluation was used to complete the statistical evaluation of the referenced data set. Interwell evaluation compares the most recent values from downgradient compliance wells against a background dataset composed of upgradient well data (MW-32 and MW-35), and the intrawell evaluation compares the most recent values from each compliance well against a background dataset composed of its own historical data.

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 locations MW-32 and MW-35 (for interwell evaluation) 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 2022** for **interwell evaluation**. Background concentrations were updated through **September 2021** for **intrawell evaluation**.

RESULTS OF APPENDIX III DOWNGRADIENT STATISTICAL COMPARISONS

The sample concentrations from the downgradient wells for each of the Appendix III constituents from the **March 2023** semi-annual detection monitoring sampling event were compared to their respective background PLs (Table I). A sample concentration greater than the background UPL is considered to represent a SSI. Based on previous compliance sampling events, statistical evaluations, and associated alternative source demonstrations, an intrawell comparison is utilized for MW-34 for boron statistical evaluations. Interwell comparisons are being utilized for all other well and constituent evaluations. The results of the groundwater assessment monitoring statistical evaluation are provided in Table I. **Based on this statistical evaluation of groundwater sampling data collected in March 2023, no SSIs above background PLs occurred at the LEC 847 Landfill.**

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 2023 SAMPLING EVENT
LAWRENCE ENERGY CENTER 847 LANDFILL
LAWRENCE, KANSAS

													Interwell Analysis		Intrawell 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 2023 Concentration (mg/L)**	**Background Limits[1] (UPL) mg/L**	**SSI**	**Background Limits[2] (UPL) mg/L**	**SSI**
CCR Appendix-III: Boron, Total (mg/L)																
MW-32	19/19	0%	-	0.2	0.00006492	0.008057	0.04472	No	No	Stable	Non-parametric	0.17	2.050			
MW-35	19/19	0%	-	2.05	0.01915	0.1384	0.07623	No	No	Stable		1.6				
MW-31R	19/19	0%	-	0.75	0.02133	0.146	0.2457	Yes	No	Stable	Normal	0.43		No		
MW-33	19/19	0%	-	1.7	0.01063	0.1031	0.06475	No	No	Decreasing	Normal	1.4		No		
MW-34	19/19	0%	-	2.2	0.01503	0.1226	0.0611	Yes	No	Stable	Normal	1.9		No	2.479	No
CCR Appendix-III: Calcium, Total (mg/L)																
MW-32	19/19	0%	-	66.6	5.679	2.383	0.04011	Yes	No	Stable	Non-parametric	59.5	564			
MW-35	19/19	0%	-	564	1263	35.54	0.06958	Yes	No	Stable		491				
MW-31R	19/19	0%	-	275	762.9	27.62	0.123	No	No	Stable	Normal	204		No		
MW-33	19/19	0%	-	267	156.9	12.53	0.0503	No	No	Stable	Normal	244		No		
MW-34	19/19	0%	-	243	267.3	16.35	0.07636	No	No	Decreasing	Normal	195		No		
CCR Appendix-III: Chloride (mg/L)																
MW-32	19/19	0%	-	113	45.55	6.749	0.06723	No	No	Increasing	Non-parametric	105	26600			
MW-35	19/19	0%	-	26600	9897000	3146	0.2084	Yes	No	Increasing		13,700				
MW-31R	18/19	5%	1-1	5210	1238000	1113	0.2932	Yes	No	Stable	Normal	3,490		No		
MW-33	19/19	0%	-	9200	568000	753.7	0.102	No	No	Stable	Normal	6,990		No		
MW-34	19/19	0%	-	9710	815600	903.1	0.1408	Yes	No	Stable	Normal	6,320		No		
CCR Appendix-III: Fluoride (mg/L)																
MW-32	13/19	32%	0.2-0.2	0.38	0.002309	0.04806	0.1981	Yes	No	Stable	Non-parametric	< 0.20	1.7			
MW-35	3/19	84%	0.1-0.4	1.7	0.2883	0.5369	1.325	No	No	Stable		< 0.40				
MW-31R	11/19	42%	0.2-0.2	0.73	0.03501	0.1871	0.5167	No	No	Decreasing	Normal	< 0.20		No		
MW-33	9/19	53%	0.2-0.4	1.5	0.2625	0.5124	0.8215	No	No	Stable	Non-parametric	< 0.40		No		
MW-34	13/19	32%	0.2-0.4	1.9	0.4264	0.653	0.6442	No	No	Decreasing	Normal	< 0.40		No		
CCR Appendix-III: pH (lab) (SU)																
MW-32	19/19	0%	-	7.9	0.0269	0.164	0.02169	No	No	Stable	Normal	7.6	8.23			
MW-35	19/19	0%	-	7.5	0.01807	0.1344	0.01871	No	No	Stable		7.0				
MW-31R	19/19	0%	-	7.5	0.01778	0.1333	0.01826	No	No	Stable	Normal	7.2		No		
MW-33	19/19	0%	-	7.8	0.02649	0.1628	0.02192	Yes	No	Stable	Non-parametric	7.2		No		
MW-34	19/19	0%	-	7.9	0.02766	0.1663	0.02191	No	No	Decreasing	Normal	7.5		No		
CCR Appendix-III: Sulfate (mg/L)																
MW-32	19/19	0%	-	9.1	0.8961	0.9466	0.1393	No	No	Decreasing	Non-parametric	5.9	666			
MW-35	19/19	0%	-	666	1551	39.39	0.06408	Yes	No	Stable		566				
MW-31R	19/19	0%	-	187	1562	39.52	0.2731	No	No	Stable	Normal	157		No		
MW-33	19/19	0%	-	462	2352	48.49	0.1578	Yes	No	Decreasing	Non-parametric	290		No		
MW-34	19/19	0%	-	561	2611	51.09	0.1116	No	No	Stable	Normal	429		No		
CCR Appendix-III: Total Dissolved Solids (TDS) (mg/L)																
MW-32	19/19	0%	-	544	478.5	21.87	0.04359	No	No	Increasing	Non-parametric	544	28800			
MW-35	19/19	0%	-	28800	34220000	5850	0.2378	Yes	No	Increasing		27,600				
MW-31R	19/19	0%	-	9270	2295000	1515	0.2131	No	No	Stable	Normal	2,960		No		
MW-33	19/19	0%	-	14100	1179000	1086	0.08483	Yes	No	Stable	Normal	13,500		No		
MW-34	19/19	0%	-	14400	5487000	2342	0.2076	Yes	No	Increasing	Non-parametric	13,200		No		

Notes:

[1] Interwell background data collected from 08/16/2016 through 09/09/2022.
[2] Intrawell background data collected from 08/16/2016 through 09/15/2021.
CCR = coal combustion residuals
mg/L = milligrams per Liter
SSI = statistically significant increase
SU = standard unit
UPL = upper prediction limits

ATTACHMENT 2
Laboratory Analytical Reports

ATTACHMENT 2-1
March 2023 Semi-Annual Sampling Event
Laboratory Analytical Report

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

April 25, 2023

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

RE: Project: LEC 847 LF
Pace Project No.: 60423611

Dear Jake Humphrey:

Enclosed are the analytical results for sample(s) received by the laboratory on March 09, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Kansas City

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

Sincerely,

Alice Spiller

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

Enclosures

cc: Shelly Gomez, Evergy
Laura Hines, Evergy, Inc.
Shannon Hughes, Evergy
Adam Irvin, Evergy
Samantha Kaney, Haley & Aldrich
Adriana Sosa, Haley & Aldrich, Inc.
Andrew Watson, Haley & Aldrich

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

CERTIFICATIONS

Project: LEC 847 LF
Pace Project No.: 60423611

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: LEC 847 LF
Pace Project No.: 60423611

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60423611001	**MW-31R-030823**	Water	03/08/23 12:20	03/09/23 14:20
60423611002	**MW-32-030823**	Water	03/08/23 11:45	03/09/23 14:20
60423611003	**MW-33-030823**	Water	03/08/23 13:00	03/09/23 14:20
60423611004	**MW-34-030823**	Water	03/08/23 13:40	03/09/23 14:20
60423611005	**MW-35-030823**	Water	03/08/23 11:15	03/09/23 14:20
60423611006	**DUP01-LEC LF-030823**	Water	03/08/23 00:00	03/09/23 14:20

REPORT OF LABORATORY ANALYSIS

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

SAMPLE ANALYTE COUNT

Project: LEC 847 LF
Pace Project No.: 60423611

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60423611001	**MW-31R-030823**	EPA 200.7	ALH	2	PASI-K
		SM 2540C	MLD	1	PASI-K
		SM 4500-H+B	RB	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60423611002	**MW-32-030823**	EPA 200.7	ALH	2	PASI-K
		SM 2540C	MLD	1	PASI-K
		SM 4500-H+B	RB	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60423611003	**MW-33-030823**	EPA 200.7	ALH	2	PASI-K
		SM 2540C	MLD	1	PASI-K
		SM 4500-H+B	RB	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60423611004	**MW-34-030823**	EPA 200.7	ALH	2	PASI-K
		SM 2540C	MLD	1	PASI-K
		SM 4500-H+B	RB	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60423611005	**MW-35-030823**	EPA 200.7	ALH	2	PASI-K
		SM 2540C	MLD	1	PASI-K
		SM 4500-H+B	RB	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K
60423611006	**DUP01-LEC LF-030823**	EPA 200.7	ALH	2	PASI-K
		SM 2540C	MLD	1	PASI-K
		SM 4500-H+B	CRN2	1	PASI-K
		EPA 300.0	CRN2	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City

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PROJECT NARRATIVE

Project: LEC 847 LF
Pace Project No.: 60423611

Method: **EPA 200.7**
Description: 200.7 Metals, Total
Client: Evergy Kansas Central, Inc.
Date: April 25, 2023

General Information:
6 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: 835936

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60423611001

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

- MS (Lab ID: 3315820)
  - Calcium

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: LEC 847 LF
Pace Project No.: 60423611

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: Evergy Kansas Central, Inc.
Date: April 25, 2023

General Information:
6 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:

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PROJECT NARRATIVE

Project: LEC 847 LF
Pace Project No.: 60423611

Method: **SM 4500-H+B**
Description: 4500H+ pH, Electrometric
Client: Evergy Kansas Central, Inc.
Date: April 25, 2023

General Information:
6 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.
- DUP01-LEC LF-030823 (Lab ID: 60423611006)
- MW-31R-030823 (Lab ID: 60423611001)
- MW-32-030823 (Lab ID: 60423611002)
- MW-33-030823 (Lab ID: 60423611003)
- MW-34-030823 (Lab ID: 60423611004)
- MW-35-030823 (Lab ID: 60423611005)

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:

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PROJECT NARRATIVE

Project: LEC 847 LF
Pace Project No.: 60423611

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: Evergy Kansas Central, Inc.
Date: April 25, 2023

General Information:
6 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.

Additional Comments:

Analyte Comments:

QC Batch: 836868

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

- MW-33-030823 (Lab ID: 60423611003)
  - Fluoride
- MW-34-030823 (Lab ID: 60423611004)
  - Fluoride
- MW-35-030823 (Lab ID: 60423611005)
  - Fluoride

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

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ANALYTICAL RESULTS

Project: LEC 847 LF
Pace Project No.: 60423611

Sample: MW-31R-030823 **Lab ID: 60423611001** Collected: 03/08/23 12:20 Received: 03/09/23 14:20 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	**0.43**	mg/L	0.10	1	03/13/23 07:21	03/20/23 15:43	7440-42-8	
Calcium, Total Recoverable	**204**	mg/L	0.20	1	03/13/23 07:21	03/20/23 15:43	7440-70-2	M1
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**2960**	mg/L	200	1		03/13/23 14:54		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Kansas City							
pH at 25 Degrees C	**7.2**	Std. Units	0.10	1		03/13/23 16:16		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**3490**	mg/L	200	200		03/16/23 17:13	16887-00-6	
Fluoride	**6.5**	mg/L	0.20	1		03/16/23 16:59	16984-48-8	
Sulfate	**157**	mg/L	20.0	20		03/20/23 15:01	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: LEC 847 LF
Pace Project No.: 60423611

Sample: MW-32-030823 **Lab ID: 60423611002** Collected: 03/08/23 11:45 Received: 03/09/23 14:20 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	**0.17**	mg/L	0.10	1	03/13/23 07:21	03/20/23 15:49	7440-42-8	
Calcium, Total Recoverable	**59.5**	mg/L	0.20	1	03/13/23 07:21	03/20/23 15:49	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**544**	mg/L	20.0	1		03/13/23 14:55		
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		03/13/23 16:13		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**105**	mg/L	20.0	20		03/20/23 15:14	16887-00-6	
Fluoride	**<0.20**	mg/L	0.20	1		03/16/23 17:26	16984-48-8	
Sulfate	**5.9**	mg/L	1.0	1		03/16/23 17:26	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: LEC 847 LF
Pace Project No.: 60423611

Sample: MW-33-030823 **Lab ID: 60423611003** Collected: 03/08/23 13:00 Received: 03/09/23 14:20 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	**1.4**	mg/L	0.10	1	03/13/23 07:21	03/20/23 15:51	7440-42-8	
Calcium, Total Recoverable	**244**	mg/L	0.20	1	03/13/23 07:21	03/20/23 15:51	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**13500**	mg/L	1000	1		03/13/23 14:55		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Kansas City							
pH at 25 Degrees C	**7.2**	Std. Units	0.10	1		03/13/23 16:23		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**6990**	mg/L	2000	2000		03/20/23 15:41	16887-00-6	
Fluoride	**<0.40**	mg/L	0.40	2		03/22/23 01:52	16984-48-8	D3
Sulfate	**290**	mg/L	200	200		03/16/23 18:33	14808-79-8	

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ANALYTICAL RESULTS

Project: LEC 847 LF
Pace Project No.: 60423611

Sample: MW-34-030823 **Lab ID: 60423611004** Collected: 03/08/23 13:40 Received: 03/09/23 14:20 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	**1.9**	mg/L	0.10	1	03/13/23 07:21	03/20/23 15:53	7440-42-8	
Calcium, Total Recoverable	**195**	mg/L	0.20	1	03/13/23 07:21	03/20/23 15:53	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**13200**	mg/L	1000	1		03/13/23 14:55		
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		03/13/23 16:28		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**6320**	mg/L	500	500		03/20/23 16:07	16887-00-6	
Fluoride	**<0.40**	mg/L	0.40	2		03/22/23 02:06	16984-48-8	D3
Sulfate	**429**	mg/L	200	200		03/16/23 19:00	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: LEC 847 LF
Pace Project No.: 60423611

Sample: MW-35-030823 **Lab ID: 60423611005** Collected: 03/08/23 11:15 Received: 03/09/23 14:20 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	**1.6**	mg/L	0.10	1	03/13/23 07:21	03/20/23 15:56	7440-42-8	
Calcium, Total Recoverable	**491**	mg/L	0.20	1	03/13/23 07:21	03/20/23 15:56	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**27600**	mg/L	1000	1		03/13/23 14:55		
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		03/13/23 16:10		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**13700**	mg/L	2000	2000		03/20/23 16:21	16887-00-6	
Fluoride	**<0.40**	mg/L	0.40	2		03/22/23 02:46	16984-48-8	D3
Sulfate	**566**	mg/L	200	200		03/16/23 19:26	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: LEC 847 LF
Pace Project No.: 60423611

Sample: DUP01-LEC LF-030823 **Lab ID: 60423611006** Collected: 03/08/23 00:00 Received: 03/09/23 14:20 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	**0.46**	mg/L	0.10	1	03/13/23 07:21	03/20/23 16:04	7440-42-8	
Calcium, Total Recoverable	**208**	mg/L	0.20	1	03/13/23 07:21	03/20/23 16:04	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**5480**	mg/L	250	1		03/13/23 14:55		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Kansas City							
pH at 25 Degrees C	**7.2**	Std. Units	0.10	1		03/13/23 15:54		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**3770**	mg/L	200	200		03/16/23 19:53	16887-00-6	
Fluoride	**8.7**	mg/L	0.20	1		03/16/23 19:40	16984-48-8	
Sulfate	**171**	mg/L	20.0	20		03/20/23 17:14	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: LEC 847 LF
Pace Project No.: 60423611

QC Batch: 835936 | 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: 60423611001, 60423611002, 60423611003, 60423611004, 60423611005, 60423611006

METHOD BLANK: 3315818 Matrix: Water
Associated Lab Samples: 60423611001, 60423611002, 60423611003, 60423611004, 60423611005, 60423611006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	mg/L	<0.10	0.10	03/20/23 15:39	
Calcium	mg/L	<0.20	0.20	03/20/23 15:39	

LABORATORY CONTROL SAMPLE: 3315819

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	0.94	94	85-115	
Calcium	mg/L	10	9.9	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3315820 3315821

Parameter	Units	60423611001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	mg/L	0.43	1	1	1.4	1.4	94	93	70-130	1	20	
Calcium	mg/L	204	10	10	219	213	145	86	70-130	3	20	M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: LEC 847 LF
Pace Project No.: 60423611

QC Batch: 836216
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60423611001

METHOD BLANK: 3317035 Matrix: Water
Associated Lab Samples: 60423611001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	03/13/23 14:50	

LABORATORY CONTROL SAMPLE: 3317036

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

SAMPLE DUPLICATE: 3317037

Parameter	Units	60423377001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	128	130	1	10	

SAMPLE DUPLICATE: 3317038

Parameter	Units	60423617009 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	463	445	4	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: LEC 847 LF
Pace Project No.: 60423611

QC Batch: 836217 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60423611002, 60423611003, 60423611004, 60423611005, 60423611006

METHOD BLANK: 3317039 Matrix: Water
Associated Lab Samples: 60423611002, 60423611003, 60423611004, 60423611005, 60423611006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	03/13/23 14:54	

LABORATORY CONTROL SAMPLE: 3317040

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

SAMPLE DUPLICATE: 3317041

Parameter	Units	60423611002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	544	552	1	10	

SAMPLE DUPLICATE: 3317042

Parameter	Units	60423617007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	3240	3540	9	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: LEC 847 LF
Pace Project No.: 60423611

QC Batch: 836208
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: 60423611006

SAMPLE DUPLICATE: 3317014

Parameter	Units	60423617017 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.6	7.8	2	5	H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: LEC 847 LF
Pace Project No.: 60423611

QC Batch: 836223
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: 60423611001, 60423611002, 60423611003, 60423611004, 60423611005

SAMPLE DUPLICATE: 3317062

Parameter	Units	60423617006 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.1	7.2	2	5	H6

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QUALITY CONTROL DATA

Project: LEC 847 LF
Pace Project No.: 60423611

QC Batch: 836868
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: 60423611001, 60423611002, 60423611003, 60423611004, 60423611005, 60423611006

METHOD BLANK: 3318984 Matrix: Water
Associated Lab Samples: 60423611001, 60423611002, 60423611003, 60423611004, 60423611005, 60423611006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<1.0	1.0	03/16/23 10:29	
Fluoride	mg/L	<0.20	0.20	03/16/23 10:29	
Sulfate	mg/L	<1.0	1.0	03/16/23 10:29	

METHOD BLANK: 3322671 Matrix: Water
Associated Lab Samples: 60423611001, 60423611002, 60423611003, 60423611004, 60423611005, 60423611006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<1.0	1.0	03/21/23 12:58	
Fluoride	mg/L	<0.20	0.20	03/21/23 12:58	
Sulfate	mg/L	<1.0	1.0	03/21/23 12:58	

METHOD BLANK: 3322772 Matrix: Water
Associated Lab Samples: 60423611001, 60423611002, 60423611003, 60423611004, 60423611005, 60423611006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<1.0	1.0	03/20/23 12:12	
Fluoride	mg/L	<0.20	0.20	03/20/23 12:12	
Sulfate	mg/L	<1.0	1.0	03/20/23 12:12	

LABORATORY CONTROL SAMPLE: 3318985

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	96	90-110	
Fluoride	mg/L	2.5	2.6	102	90-110	
Sulfate	mg/L	5	5.1	101	90-110	

LABORATORY CONTROL SAMPLE: 3322672

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	98	90-110	
Fluoride	mg/L	2.5	2.4	98	90-110	
Sulfate	mg/L	5	4.8	97	90-110	

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

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: LEC 847 LF
Pace Project No.: 60423611

LABORATORY CONTROL SAMPLE: 3322773

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	2.7	108	90-110	
Sulfate	mg/L	5	5.2	105	90-110	

MATRIX SPIKE SAMPLE: 3318986

Parameter	Units	60423929001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	284	1000	1250	96	80-120	
Fluoride	mg/L	ND	500	580	116	80-120	
Sulfate	mg/L	1930	1000	3060	114	80-120	

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

REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: LEC 847 LF
Pace Project No.: 60423611

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

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

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: LEC 847 LF
Pace Project No.: 60423611

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60423611001	**MW-31R-030823**	EPA 200.7	835936	EPA 200.7	836205
60423611002	**MW-32-030823**	EPA 200.7	835936	EPA 200.7	836205
60423611003	**MW-33-030823**	EPA 200.7	835936	EPA 200.7	836205
60423611004	**MW-34-030823**	EPA 200.7	835936	EPA 200.7	836205
60423611005	**MW-35-030823**	EPA 200.7	835936	EPA 200.7	836205
60423611006	**DUP01-LEC LF-030823**	EPA 200.7	835936	EPA 200.7	836205
60423611001	**MW-31R-030823**	SM 2540C	836216		
60423611002	**MW-32-030823**	SM 2540C	836217		
60423611003	**MW-33-030823**	SM 2540C	836217		
60423611004	**MW-34-030823**	SM 2540C	836217		
60423611005	**MW-35-030823**	SM 2540C	836217		
60423611006	**DUP01-LEC LF-030823**	SM 2540C	836217		
60423611001	**MW-31R-030823**	SM 4500-H+B	836223		
60423611002	**MW-32-030823**	SM 4500-H+B	836223		
60423611003	**MW-33-030823**	SM 4500-H+B	836223		
60423611004	**MW-34-030823**	SM 4500-H+B	836223		
60423611005	**MW-35-030823**	SM 4500-H+B	836223		
60423611006	**DUP01-LEC LF-030823**	SM 4500-H+B	836208		
60423611001	**MW-31R-030823**	EPA 300.0	836868		
60423611002	**MW-32-030823**	EPA 300.0	836868		
60423611003	**MW-33-030823**	EPA 300.0	836868		
60423611004	**MW-34-030823**	EPA 300.0	836868		
60423611005	**MW-35-030823**	EPA 300.0	836868		
60423611006	**DUP01-LEC LF-030823**	EPA 300.0	836868		

WO# : 60423611

60423611

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

Client Name: Evergy Kansas 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: T296 **Type of Ice:** Wet Blue None

Cooler Temperature (°C): **As-read** 0.9 **Corr. Factor** -0.1 **Corrected** 0.8

Date and initials of person examining contents: AF 3/9

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#:** 6204001	☑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: _____

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:	Accounts Payable
Address:	400 E. Van Buren St	Copy To:	Laura Hines, Samantha Kaney, Melissa Michels	Company Name:	Evergy Kansas Central
Suite 545 Phoenix, AZ 85004				Address:	
Email:	skaney@haleyaldrich.com	Purchase Order #:		Pace Quote:	
Phone:	507-251-2232 Fax:	Project Name:	LEC 847 LF	Pace Project Manager:	alice.spiller@pacelabs.com,
Requested Due Date:		Project #:		Pace Profile #:	9657, line 5

Regulatory Agency
Groundwater
State / Location
KS

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample Ids must be un que	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)	
	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																	N	N	N	N			60423611
1	MW-31R-030823	WT	G	-	-	3/8/23	1220	-	4	3		1							X	X	X	X		
2	MW-32-030823	WT	G	-	-	3/8/23	1145	-	4	3		1							X	X	X	X		
3	MW-33-030823	WT	G	-	-	3/8/23	1300	-	4	3		1							X	X	X	X		
4	MW-34-030823	WT	G	-	-	3/8/23	1340	-	4	3		1							X	X	X	X		
5	MW-35-030823	WT	G	-	-	3/8/23	1115	-	4	3		1							X	X	X	X		
6	DUP01-LEC LF- 030823	WT	G	-	-	3/8/23	NA	-	4	3		1							X	X	X	X		
7																								
8																								
9																								
10																								
11																								
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Britta Coleman/ SCS Engineers	3/9/23	1300	Paul	3/9	1420	0.8	X	N	

SAMPLER NAME AND SIGNATURE					
PRINT Name of SAMPLER:	Britta Coleman		TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
SIGNATURE of SAMPLER:	DATE Signed: 3/9/23					

Client: Energy Kansas Central

Profile # 9657-S

Site: LEC 847 LF

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																			1		2		1									
3																			1		2		1									
4																			1		2		1									
5																			1		2		1									
6																			1		2		1									
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: 60423611

ATTACHMENT 2-2
September 2023 Semi-Annual Sampling Event
Laboratory Analytical Report

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

November 21, 2023

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

RE: Project: LEC 847 LF-Revised Report
Pace Project No.: 60437134

Dear Jake Humphrey:

Enclosed are the analytical results for sample(s) received by the laboratory on September 08, 2023. 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 to reflect corrections after secondary review *see narrative

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: Shelly Gomez, Evergy
Laura Hines, Evergy, Inc.
Shannon Hughes, Evergy
Adam Irvin, Evergy
Samantha Kaney, Haley & Aldrich
Melanie Satanek, Haley Aldrich
Adriana Sosa, Haley & Aldrich, Inc.
Andrew Watson, Haley & Aldrich

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
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CERTIFICATIONS

Project: LEC 847 LF-Revised Report
Pace Project No.: 60437134

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Inorganic Drinking Water Certification #: 10090
Arkansas Drinking Water
Arkansas Certification #: 88-00679
Illinois Certification #: 2000302023-5
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212023-1
Oklahoma Certification #: 2022-057
Florida: Cert E871149 SEKS WET
Texas Certification #: T104704407-22-16
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: LEC 847 LF-Revised Report
Pace Project No.: 60437134

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60437134001	**MW-31R-090723**	Water	09/07/23 12:25	09/08/23 15:00
60437134002	**MW-32-090723**	Water	09/07/23 11:45	09/08/23 15:00
60437134003	**MW-33-090723**	Water	09/07/23 13:10	09/08/23 15:00
60437134004	**MW-34-090723**	Water	09/07/23 13:15	09/08/23 15:00
60437134005	**MW-35-090723**	Water	09/07/23 14:30	09/08/23 15:00
60437134006	**LEC 847LF-DUP-090723**	Water	09/07/23 12:25	09/08/23 15:00

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

SAMPLE ANALYTE COUNT

Project: LEC 847 LF-Revised Report
Pace Project No.: 60437134

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60437134001	**MW-31R-090723**	EPA 200.7	JXD	2	PASI-K
		SM 2540C	ZVF	1	PASI-K
		SM 4500-H+B	RKA	1	PASI-K
		EPA 300.0	CRN2, MLD	3	PASI-K
60437134002	**MW-32-090723**	EPA 200.7	JXD	2	PASI-K
		SM 2540C	BDH1	1	PASI-K
		SM 4500-H+B	RKA	1	PASI-K
		EPA 300.0	MLD	3	PASI-K
60437134003	**MW-33-090723**	EPA 200.7	JXD	2	PASI-K
		SM 2540C	BDH1	1	PASI-K
		SM 4500-H+B	RKA	1	PASI-K
		EPA 300.0	CRN2, MLD	3	PASI-K
60437134004	**MW-34-090723**	EPA 200.7	JXD	2	PASI-K
		SM 2540C	BDH1	1	PASI-K
		SM 4500-H+B	RKA	1	PASI-K
		EPA 300.0	MLD	3	PASI-K
60437134005	**MW-35-090723**	EPA 200.7	JXD	2	PASI-K
		SM 2540C	BDH1	1	PASI-K
		SM 4500-H+B	RKA	1	PASI-K
		EPA 300.0	CRN2, MLD	3	PASI-K
60437134006	**LEC 847LF-DUP-090723**	EPA 200.7	JXD	2	PASI-K
		SM 2540C	BDH1	1	PASI-K
		SM 4500-H+B	RKA	1	PASI-K
		EPA 300.0	MLD	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City

REPORT OF LABORATORY ANALYSIS

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

PROJECT NARRATIVE

Project: LEC 847 LF-Revised Report
Pace Project No.: 60437134

Date: November 21, 2023

60437134005 300.0 chloride reanalysis confirmed & sulfate prep error corrected. Chloride both sets of data posted. Sulfate reanalysis posted.

60437134001 300.0 Chloride & Sulfate confirmed, both sets of data posted. TDS reanalysis was higher, data posted. B, Ca results were also updated.
60437134003 300.0 sulfate reanalysis data posted. B, Ca results were also updated.

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

PROJECT NARRATIVE

Project: LEC 847 LF-Revised Report
Pace Project No.: 60437134

Method: **EPA 200.7**
Description: 200.7 Metals, Total
Client: Evergy Kansas Central, Inc.
Date: November 21, 2023

General Information:
6 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.

Additional Comments:

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

PROJECT NARRATIVE

Project: LEC 847 LF-Revised Report
Pace Project No.: 60437134

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: Evergy Kansas Central, Inc.
Date: November 21, 2023

General Information:
6 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.

H1: Analysis conducted outside the EPA method holding time.
- MW-31R-090723 (Lab ID: 60437134001)

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: LEC 847 LF-Revised Report
Pace Project No.: 60437134

Method: **SM 4500-H+B**
Description: 4500H+ pH, Electrometric
Client: Evergy Kansas Central, Inc.
Date: November 21, 2023

General Information:
6 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.
- LEC 847LF-DUP-090723 (Lab ID: 60437134006)
- MW-31R-090723 (Lab ID: 60437134001)
- MW-32-090723 (Lab ID: 60437134002)
- MW-33-090723 (Lab ID: 60437134003)
- MW-34-090723 (Lab ID: 60437134004)
- MW-35-090723 (Lab ID: 60437134005)

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: LEC 847 LF-Revised Report
Pace Project No.: 60437134

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: Evergy Kansas Central, Inc.
Date: November 21, 2023

General Information:
6 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: 865032

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60437134001,60437138004

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

- MS (Lab ID: 3425460)
  - Chloride
  - Fluoride
- MS (Lab ID: 3425462)
  - Chloride
  - Sulfate
- MSD (Lab ID: 3425461)
  - Chloride
  - Fluoride

R1: RPD value was outside control limits.

- MSD (Lab ID: 3425461)
  - Chloride

QC Batch: 866771

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60437134001

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

- MS (Lab ID: 3432433)
  - Chloride

R1: RPD value was outside control limits.

- MSD (Lab ID: 3432434)
  - Chloride

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: LEC 847 LF-Revised Report
Pace Project No.: 60437134

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: Evergy Kansas Central, Inc.
Date: November 21, 2023

Analyte Comments:

QC Batch: 865032

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

- MS (Lab ID: 3425460)
  - Chloride

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

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ANALYTICAL RESULTS

Project: LEC 847 LF-Revised Report
Pace Project No.: 60437134

Sample: MW-31R-090723 **Lab ID: 60437134001** Collected: 09/07/23 12:25 Received: 09/08/23 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	**0.47**	mg/L	0.10	1	09/29/23 07:07	09/29/23 12:07	7440-42-8	
Calcium, Total Recoverable	**220**	mg/L	0.20	1	09/29/23 07:07	09/29/23 12:07	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**7740**	mg/L	200	1		10/02/23 11:30		H1
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		09/12/23 15:44		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**3150**	mg/L	200	200		09/21/23 18:24	16887-00-6	M1,R1
Chloride	**3080**	mg/L	500	500		10/04/23 10:26	16887-00-6	M1,R1
Fluoride	**<0.20**	mg/L	0.20	1		09/20/23 14:37	16984-48-8	M1
Sulfate	**119**	mg/L	20.0	20		09/20/23 15:17	14808-79-8	
Sulfate	**98.7**	mg/L	10.0	10		09/29/23 15:59	14808-79-8	

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ANALYTICAL RESULTS

Project: LEC 847 LF-Revised Report
Pace Project No.: 60437134

Sample: MW-32-090723 **Lab ID: 60437134002** Collected: 09/07/23 11:45 Received: 09/08/23 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	**0.18**	mg/L	0.10	1	09/14/23 12:10	09/18/23 13:54	7440-42-8	
Calcium, Total Recoverable	**63.4**	mg/L	0.20	1	09/14/23 12:10	09/18/23 13:54	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**526**	mg/L	10.0	1		09/13/23 10:37		
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		09/12/23 15:27		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**95.6**	mg/L	20.0	20		09/20/23 16:10	16887-00-6	
Fluoride	**0.24**	mg/L	0.20	1		09/20/23 15:57	16984-48-8	
Sulfate	**5.9**	mg/L	1.0	1		09/20/23 15:57	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: LEC 847 LF-Revised Report
Pace Project No.: 60437134

Sample: MW-33-090723 **Lab ID: 60437134003** Collected: 09/07/23 13:10 Received: 09/08/23 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	**1.6**	mg/L	0.10	1	09/29/23 07:07	09/29/23 12:14	7440-42-8	
Calcium, Total Recoverable	**265**	mg/L	0.20	1	09/29/23 07:07	09/29/23 12:14	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**13600**	mg/L	500	1		09/13/23 10:37		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Kansas City							
pH at 25 Degrees C	**7.3**	Std. Units	0.10	1		09/12/23 15:50		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**6950**	mg/L	2000	2000		09/21/23 19:26	16887-00-6	
Fluoride	**<0.20**	mg/L	0.20	1		09/20/23 16:50	16984-48-8	
Sulfate	**606**	mg/L	50.0	50		09/29/23 17:32	14808-79-8	

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ANALYTICAL RESULTS

Project: LEC 847 LF-Revised Report
Pace Project No.: 60437134

Sample: MW-34-090723 **Lab ID: 60437134004** Collected: 09/07/23 13:15 Received: 09/08/23 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	**1.9**	mg/L	0.10	1	09/14/23 12:10	09/18/23 13:58	7440-42-8	
Calcium, Total Recoverable	**203**	mg/L	0.20	1	09/14/23 12:10	09/18/23 13:58	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**12800**	mg/L	500	1		09/13/23 10:38		
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		09/12/23 15:52		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**6310**	mg/L	2000	2000		09/21/23 19:52	16887-00-6	
Fluoride	**<0.20**	mg/L	0.20	1		09/20/23 17:17	16984-48-8	
Sulfate	**508**	mg/L	50.0	50		09/21/23 19:39	14808-79-8	

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ANALYTICAL RESULTS

Project: LEC 847 LF-Revised Report
Pace Project No.: 60437134

Sample: MW-35-090723 **Lab ID: 60437134005** Collected: 09/07/23 14:30 Received: 09/08/23 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	**1.7**	mg/L	0.10	1	09/14/23 12:10	09/18/23 14:00	7440-42-8	
Calcium, Total Recoverable	**515**	mg/L	0.20	1	09/14/23 12:10	09/18/23 14:00	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**28200**	mg/L	1000	1		09/13/23 10:38		
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		09/12/23 15:56		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**15000**	mg/L	2000	2000		09/21/23 20:17	16887-00-6	
Chloride	**13400**	mg/L	2000	2000		10/04/23 11:19	16887-00-6	
Fluoride	**<0.20**	mg/L	0.20	1		09/20/23 17:43	16984-48-8	
Sulfate	**287**	mg/L	50.0	50		09/29/23 18:25	14808-79-8	

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ANALYTICAL RESULTS

Project: LEC 847 LF-Revised Report
Pace Project No.: 60437134

Sample: LEC 847LF-DUP-090723 **Lab ID: 60437134006** Collected: 09/07/23 12:25 Received: 09/08/23 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	**0.44**	mg/L	0.10	1	09/14/23 12:10	09/18/23 14:02	7440-42-8	
Calcium, Total Recoverable	**217**	mg/L	0.20	1	09/14/23 12:10	09/18/23 14:02	7440-70-2	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**2590**	mg/L	66.7	1		09/13/23 10:38		
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		09/12/23 15:48		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**3650**	mg/L	500	500		09/21/23 20:29	16887-00-6	
Fluoride	**<0.20**	mg/L	0.20	1		09/20/23 18:10	16984-48-8	
Sulfate	**107**	mg/L	20.0	20		09/20/23 18:24	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: LEC 847 LF-Revised Report
Pace Project No.: 60437134

QC Batch: 864481
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: 60437134002, 60437134004, 60437134005, 60437134006

METHOD BLANK: 3422951 Matrix: Water
Associated Lab Samples: 60437134002, 60437134004, 60437134005, 60437134006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	mg/L	<0.10	0.10	09/18/23 13:03	
Calcium	mg/L	<0.20	0.20	09/18/23 13:03	

LABORATORY CONTROL SAMPLE: 3422952

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	0.95	95	85-115	
Calcium	mg/L	10	10.4	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3422953 3422954

Parameter	Units	60437056001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	mg/L	0.50	1	1	1.5	1.5	97	97	70-130	0	20	
Calcium	mg/L	232	10	10	242	242	102	102	70-130	0	20	

MATRIX SPIKE SAMPLE: 3422955

Parameter	Units	60437062001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	<0.10	1	1.0	95	70-130	
Calcium	mg/L	101	10	111	97	70-130	

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QUALITY CONTROL DATA

Project: LEC 847 LF-Revised Report
Pace Project No.: 60437134

QC Batch: 866730
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: 60437134001, 60437134003

METHOD BLANK: 3432274 Matrix: Water
Associated Lab Samples: 60437134001, 60437134003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	mg/L	<0.10	0.10	09/29/23 12:03	
Calcium	mg/L	<0.20	0.20	09/29/23 12:03	

LABORATORY CONTROL SAMPLE: 3432275

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	1.0	103	85-115	
Calcium	mg/L	10	10.9	109	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3432276 3432277

Parameter	Units	60437134001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	mg/L	0.47	1	1	1.5	1.5	100	101	70-130	1	20	
Calcium	mg/L	220	10	10	227	231	73	106	70-130	1	20	

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QUALITY CONTROL DATA

Project: LEC 847 LF-Revised Report
Pace Project No.: 60437134

QC Batch: 864208
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60437134002, 60437134003, 60437134004, 60437134005, 60437134006

METHOD BLANK: 3421941 Matrix: Water
Associated Lab Samples: 60437134002, 60437134003, 60437134004, 60437134005, 60437134006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	09/13/23 10:33	

LABORATORY CONTROL SAMPLE: 3421942

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

SAMPLE DUPLICATE: 3421943

Parameter	Units	60437056004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1320	1370	4	10	

SAMPLE DUPLICATE: 3421944

Parameter	Units	60436986003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	24500	25000	2	10	

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QUALITY CONTROL DATA

Project: LEC 847 LF-Revised Report
Pace Project No.: 60437134

QC Batch: 866941
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60437134001

METHOD BLANK: 3433157 Matrix: Water
Associated Lab Samples: 60437134001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	10/02/23 11:11	

LABORATORY CONTROL SAMPLE: 3433158

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1070	107	80-120	

SAMPLE DUPLICATE: 3433159

Parameter	Units	60436735002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1210	1180	3	10	H1

SAMPLE DUPLICATE: 3433160

Parameter	Units	60438710001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2640	2650	0	10	

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QUALITY CONTROL DATA

Project: LEC 847 LF-Revised Report
Pace Project No.: 60437134

QC Batch: 863911
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: 60437134002

SAMPLE DUPLICATE: 3421007

Parameter	Units	60437056001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.9	7.0	1	5	H6

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QUALITY CONTROL DATA

Project: LEC 847 LF-Revised Report
Pace Project No.: 60437134

QC Batch: 864085
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: 60437134001, 60437134003, 60437134004, 60437134005, 60437134006

SAMPLE DUPLICATE: 3421508

Parameter	Units	60437134001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.0	7.1	1	5	H6

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QUALITY CONTROL DATA

Project: LEC 847 LF-Revised Report
Pace Project No.: 60437134

QC Batch: 865032
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: 60437134001, 60437134002, 60437134003, 60437134004, 60437134005, 60437134006

METHOD BLANK: 3425458 Matrix: Water
Associated Lab Samples: 60437134001, 60437134002, 60437134003, 60437134004, 60437134005, 60437134006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<1.0	1.0	09/20/23 13:11	
Fluoride	mg/L	<0.20	0.20	09/20/23 13:11	
Sulfate	mg/L	<1.0	1.0	09/20/23 13:11	

METHOD BLANK: 3429169 Matrix: Water
Associated Lab Samples: 60437134001, 60437134002, 60437134003, 60437134004, 60437134005, 60437134006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<1.0	1.0	09/21/23 17:59	
Fluoride	mg/L	<0.20	0.20	09/21/23 17:59	
Sulfate	mg/L	<1.0	1.0	09/21/23 17:59	

LABORATORY CONTROL SAMPLE: 3425459

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	95	90-110	
Fluoride	mg/L	2.5	2.5	99	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

LABORATORY CONTROL SAMPLE: 3429170

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	96	90-110	
Fluoride	mg/L	2.5	2.5	101	90-110	
Sulfate	mg/L	5	5.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3425460 3425461

Parameter	Units	60437134001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	3080	1000	1000	4490	3450	134	30	80-120	26	15	E,M1, R1
Fluoride	mg/L	<0.20	2.5	2.5	1.1	1.1	45	44	80-120	0	15	M1
Sulfate	mg/L	98.7	100	100	202	202	83	83	80-120	0	15	

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QUALITY CONTROL DATA

Project: LEC 847 LF-Revised Report
Pace Project No.: 60437134

MATRIX SPIKE SAMPLE: 3425462

Parameter	Units	60437138004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	260	100	360	100	80-120	M1
Fluoride	mg/L	<0.20	50	50.8	101	80-120	
Sulfate	mg/L	1450	100	<20.0	-1330	80-120	M1

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QUALITY CONTROL DATA

Project: LEC 847 LF-Revised Report
Pace Project No.: 60437134

QC Batch: 866771
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: 60437134001, 60437134003, 60437134005

METHOD BLANK: 3432431 Matrix: Water
Associated Lab Samples: 60437134001, 60437134003, 60437134005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<1.0	1.0	09/29/23 15:32	
Sulfate	mg/L	<1.0	1.0	09/29/23 15:32	

METHOD BLANK: 3435484 Matrix: Water
Associated Lab Samples: 60437134001, 60437134003, 60437134005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<1.0	1.0	10/04/23 10:00	
Sulfate	mg/L	<1.0	1.0	10/04/23 10:00	

LABORATORY CONTROL SAMPLE: 3432432

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

LABORATORY CONTROL SAMPLE: 3435485

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	98	90-110	
Sulfate	mg/L	5	5.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3432433 3432434

Parameter	Units	60437134001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	3080	2500	2500	6880	5810	152	109	80-120	17	15	M1,R1
Sulfate	mg/L	98.7	50	50	153	158	108	118	80-120	3	15	

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

REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: LEC 847 LF-Revised Report
Pace Project No.: 60437134

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: LEC 847 LF-Revised Report
Pace Project No.: 60437134

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60437134001	**MW-31R-090723**	EPA 200.7	866730	EPA 200.7	866772
60437134002	**MW-32-090723**	EPA 200.7	864481	EPA 200.7	864587
60437134003	**MW-33-090723**	EPA 200.7	866730	EPA 200.7	866772
60437134004	**MW-34-090723**	EPA 200.7	864481	EPA 200.7	864587
60437134005	**MW-35-090723**	EPA 200.7	864481	EPA 200.7	864587
60437134006	**LEC 847LF-DUP-090723**	EPA 200.7	864481	EPA 200.7	864587
60437134001	**MW-31R-090723**	SM 2540C	866941		
60437134002	**MW-32-090723**	SM 2540C	864208		
60437134003	**MW-33-090723**	SM 2540C	864208		
60437134004	**MW-34-090723**	SM 2540C	864208		
60437134005	**MW-35-090723**	SM 2540C	864208		
60437134006	**LEC 847LF-DUP-090723**	SM 2540C	864208		
60437134001	**MW-31R-090723**	SM 4500-H+B	864085		
60437134002	**MW-32-090723**	SM 4500-H+B	863911		
60437134003	**MW-33-090723**	SM 4500-H+B	864085		
60437134004	**MW-34-090723**	SM 4500-H+B	864085		
60437134005	**MW-35-090723**	SM 4500-H+B	864085		
60437134006	**LEC 847LF-DUP-090723**	SM 4500-H+B	864085		
60437134001	**MW-31R-090723**	EPA 300.0	865032		
60437134001	**MW-31R-090723**	EPA 300.0	866771		
60437134002	**MW-32-090723**	EPA 300.0	865032		
60437134003	**MW-33-090723**	EPA 300.0	865032		
60437134003	**MW-33-090723**	EPA 300.0	866771		
60437134004	**MW-34-090723**	EPA 300.0	865032		
60437134005	**MW-35-090723**	EPA 300.0	865032		
60437134005	**MW-35-090723**	EPA 300.0	866771		
60437134006	**LEC 847LF-DUP-090723**	EPA 300.0	865032		

WO#: 60437134

60437134

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

Client Name: Evergy KS 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: T298 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 4.9 **Corr. Factor** -0.3 **Corrected** 4.6

Date and initials of person examining contents: AV 9/8/23

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#:** 67181	☑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

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:	Accounts Payable
Address:	400 E. Van Buren St	Copy To:	Laura Hines, Samantha Kaney	Company Name:	Evergy Kansas Central
	Suite 545 Phoenix, AZ 85004			Address:	
Email:	skaney@haleyaldrich.com	Purchase Order #:		Pace Quote:	
Phone:	507-251-2232 Fax:	Project Name:	LEC 847 LF	Pace Project Manager:	alice.spiller@pacelabs.com,
Requested Due Date:		Project #:		Pace Profile #:	9657, line 5

Regulatory Agency
Groundwater
State / Location
KS

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique 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	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	Analyses Test Y/N	Requested Analysis Filtered (Y/N): 200.7 Metals B,Ca	300.0 Anions Cl,F,S	Total Dissolved Solids (TDS)	pH	Residual Chlorine (Y/N)	60437134
1	MW-31R-090723	WT	G	-	-	9/7/23	12:25	-	4	3		1						X	X	X	X		2 BP3U BP3N BP1U
2	MW-32-090723	WT	G	-	-	9/7/23	11:45	-	4	3		1						X	X	X	X		
3	MW-33-090723	WT	G	-	-	9/7/23	13:10	-	4	3		1						X	X	X	X		
4	MW-34-090723	WT	G	-	-	9/7/23	13:15	-	4	3		1						X	X	X	X		
5	MW-35-090723	WT	G	-	-	9/7/23	14:30	-	4	3		1						X	X	X	X		
6	LEC 847LF-DUP- 090723	WT	G	-	-	9/7/23	12:25	-	4	3		1						X	X	X	X		
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)
	Jason R. Franks / SCS Enginers	9/8/2023	15:00	JA Pace	9/8/23	1500	4.6	Y	Y	X

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jason R. Franks

SIGNATURE of SAMPLER: Jason R. Franks DATE Signed: 9/8/2023