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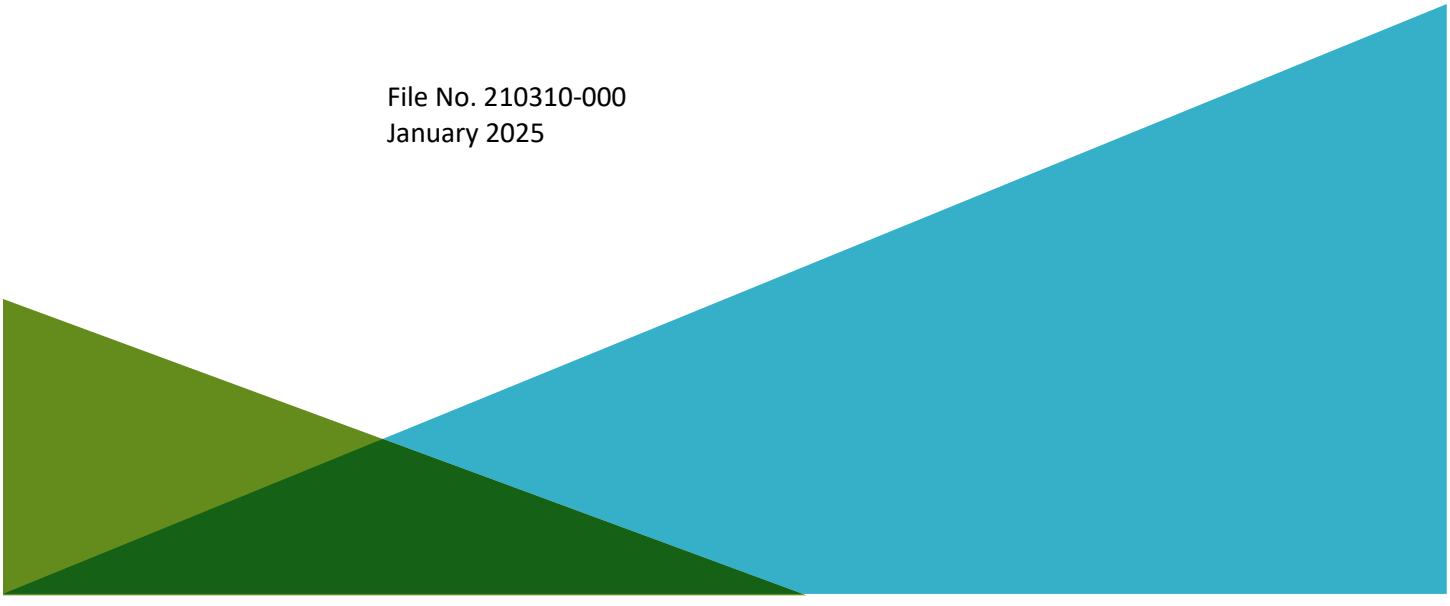
2024 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
322 LANDFILL
TECUMSEH ENERGY CENTER
TECUMSEH, KANSAS

by
Haley & Aldrich, Inc.
Cleveland, Ohio

for
Evergy Kansas Central, Inc.
Topeka, Kansas

File No. 210310-000
January 2025



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This Annual Groundwater Monitoring and Corrective Action Report documents the groundwater monitoring program for the Tecumseh Energy Center (TEC) 322 Landfill consistent with applicable sections of 257.90 through 257.98, and describes activities conducted in the prior calendar year (2024) and documents compliance with the U.S. Environmental Protection Agency Coal Combustion Residual Rule. I certify that the 2024 Annual Groundwater Monitoring and Corrective Action Report for the TEC 322 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 2024 Annual Groundwater Monitoring and Corrective Action Report (Annual Report) addresses the 322 Landfill at the Tecumseh Energy Center (TEC), 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 TEC 322 Landfill consistent with applicable sections of 257.90 through 257.98, and describes activities conducted in the prior calendar year (2024) 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, 2024), the 322 Landfill was operating under an assessment monitoring program in compliance with 40 CFR § 257.95.

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, 2024), the 322 Landfill was operating under an assessment monitoring program in compliance with 40 CFR § 257.95.

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

The 322 Landfill is operating under an assessment monitoring program; therefore, no statistical evaluations were completed on Appendix III constituents in 2024.

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.

An assessment monitoring program was initiated on July 17, 2018 for the 322 Landfill with a notification establishing assessment monitoring provided on August 15, 2018 to meet the requirements of 40 CFR § 257.95. The 322 Landfill remained in assessment monitoring in 2024.

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

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

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

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

No statistically significant levels were identified above the groundwater protection standard for those constituents listed in Appendix IV to this part in 2024 for the 322 Landfill. The statistical evaluation reports for semiannual assessment monitoring sampling events from September 2023 and March 2024 were completed in January 2024 and July 2024, respectively, and are included in Attachment 1.

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 2024 for this unit. The 322 Landfill remained in assessment monitoring during 2024.

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

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

An assessment of corrective measures was not required for the 322 Landfill in 2024; 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 2024 for this unit. The 322 Landfill remained in assessment monitoring during 2024.

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 322 Landfill remains in assessment 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 2024.

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 TEC 322 Landfill. The 322 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 322 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 and § 257.95 is also provided in this report. This Annual Report documents the applicable groundwater-related activities completed in the calendar year 2024.

2.2.1 Status of the Groundwater Monitoring Program

The 322 Landfill remained in the assessment monitoring program during 2024.

2.2.2 Key Actions Completed

The 2023 Annual Groundwater Monitoring and Corrective Action Report was completed in January 2024. Statistical evaluation was completed in January 2024 on analytical data from the September 2023 semiannual assessment monitoring sampling event.

A semiannual assessment monitoring sampling event was completed in March 2024 for detected Appendix IV constituents identified from the June 2023 annual assessment monitoring sampling event. Statistical evaluation was completed in July 2024 on analytical data from the March 2024 semiannual assessment monitoring sampling event.

An annual assessment monitoring sampling event was completed in June 2024 to identify detected Appendix IV constituents for subsequent semiannual sampling events in September 2024 and planned for March 2025.

In June 2024, Evergy completed the installation of seven additional monitoring wells in accordance with the 322 Landfill Well Placement/Development Plan (Development Plan) approved by the U.S. Environmental Protection Agency (USEPA) on March 14, 2024. The monitoring wells supplement the existing certified groundwater monitoring network. The initial baseline groundwater monitoring samples were collected in July 2024 from the newly installed monitoring wells. Groundwater monitoring is completed at the newly installed monitoring wells bi-monthly, in accordance with the Development Plan. Analytical results from groundwater samples collected from baseline monitoring wells will be provided when the monitoring wells are added to the certified monitoring network.

Semiannual assessment monitoring sampling was completed in September 2024 at the certified groundwater monitoring network for detected Appendix IV constituents identified during the June 2024 annual monitoring event. Statistical evaluation of the results from the September 2024 semiannual assessment monitoring sampling event are due to be completed in January 2025 and will be reported in the next annual report.

2.2.3 Problems Encountered

No noteworthy problems (i.e., problems could include damaged wells, issues with sample collection or lack of sampling, or problems with analytical analysis) were encountered at the 322 Landfill in 2024.

2.2.4 Actions to Resolve Problems

No problems were encountered at the 322 Landfill in 2024, therefore, no additional actions to resolve problems were required.

2.2.5 Project Key Activities for Upcoming Year

Key activities planned for 2025 include the completion of the 2024 Annual Groundwater Monitoring and Corrective Action Report, statistical evaluation of semiannual assessment monitoring analytical data collected in September 2024, semiannual assessment monitoring and subsequent statistical evaluations, and annual assessment monitoring. Baseline sampling will continue at newly installed compliance wells.

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 322 Landfill is included in this report as Figure 1.

As described in Sections 2.2.2 and 2.3.2, monitoring wells were installed to supplement the certified groundwater monitoring network at the 322 Landfill. These new well locations are shown on 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;

Seven monitoring wells were installed in June 2024 in accordance with the Development Plan approved by the USEPA on March 14, 2024. The new monitoring wells supplement the certified groundwater monitoring network and are shown on Figure 1.

No monitoring wells were decommissioned in 2024.

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 § 257.95(b) and § 257.95(d)(1), three independent assessment monitoring samples from each background and downgradient monitoring well were collected in 2024. A summary including sample names, dates of sample collection, field parameters, and monitoring data obtained for the groundwater monitoring program for the 322 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 2024 are provided in Figures 2 through 4.

The initial baseline groundwater sampling event was completed in July 2024 at newly installed monitoring wells. Groundwater monitoring is completed at the newly installed monitoring wells bi-monthly, in accordance with the Development Plan. Analytical results from groundwater samples collected from baseline monitoring wells will be provided upon inclusion of the monitoring wells into the certified monitoring network.

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

The assessment monitoring program was initiated on July 17, 2018 with a notification establishing assessment monitoring provided on August 15, 2018 to meet the requirements of 40 CFR § 257.95. The 322 Landfill remained in assessment monitoring during 2024.

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 257.95 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 activities completed in calendar year 2024.

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

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

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

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

The owner or operator may demonstrate that a source other than the CCR unit caused the statistically significant increase over background levels for a constituent or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The owner or operator must complete the written demonstration within 90 days of detecting a statistically significant increase over background levels to include obtaining a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority verifying the accuracy of the information in the report. If a successful demonstration is completed within the 90-day period, the owner or operator of the CCR unit may continue with a detection monitoring program under this section. If a

successful demonstration is not completed within the 90-day period, the owner or operator of the CCR unit must initiate an assessment monitoring program as required under § 257.95. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority.

This unit is in assessment monitoring. Therefore, no detection monitoring alternate source 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).

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).

An assessment monitoring program has been implemented at the CCR unit since July 17, 2018. Three rounds of assessment monitoring sampling were completed in 2024. Analytical results for both downgradient and upgradient wells are provided in Table I. The background concentrations (upper tolerance limits) and groundwater protection standards (GWPS) established for detected Appendix IV constituents for the 322 Landfill are included in Tables II and III. The background concentrations and GWPS values provided in Table II and Table III were utilized for statistical evaluations completed in 2024 for September 2023 and March 2024 semiannual assessment monitoring sampling events, respectively.

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 2024. The 322 Landfill remained in assessment monitoring during 2024.

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 monitoring of corrective measures was required to be initiated in 2024. Therefore, no demonstration or certification is applicable for this unit.

TABLES

TABLE I
SUMMARY OF ANALYTICAL RESULTS - 2024 ASSESSMENT MONITORING
EVERGY KANSAS CENTRAL, INC.
TECUMSEH ENERGY CENTER, 322 LANDFILL
TECUMSEH, KANSAS

Location	Upgradient				Downgradient							
	MW-4				MW-1							
Measure Point (TOC)	936.48				904.65							
Sample Name	MW-4-030724	MW-4-062024	MW-4-091124	MW-4-092524	MW-1-030724	TEC-322LF-DUP-030724	MW-1-062024	TEC-322LF-DUP-062024	MW-1-091124	TEC-322LF-DUP-091124	MW-1-092524	TEC-LANDFILL-DUP
Sample Date	3/7/2024	06/20/2024	9/11/2024	9/25/2024	3/7/2024	3/7/2024	06/20/2024	06/20/2024	9/11/2024	9/11/2024	9/25/2024	9/25/2024
Final Lab Report Date	3/25/2024	07/05/2024	9/30/2024	N/A	3/25/2024	3/25/2024	07/05/2024	07/05/2024	9/30/2024	9/30/2024	N/A	N/A
Lab Data Reviewed and Accepted	7/5/2024	09/10/2024	11/4/2024	11/4/2024	7/5/2024	7/5/2024	09/10/2024	09/10/2024	11/4/2024	11/4/2024	11/4/2024	11/4/2024
Depth to Water (ft btoc)	5.73	6.74	8.18	-	4.90	4.90	4.75	-	6.81	-	-	-
Temperature (Deg C)	9.36	18.72	17.52	-	11.25	-	15.95	-	15.45	-	-	-
Conductivity (µS/cm)	1,720	1640	1850	-	1,330	-	1250	-	1390	-	-	-
Turbidity (NTU)	4.9	0.0	12.9	-	0.0	-	0.0	-	1.6	-	-	-
Dissolved Oxygen (mg/L)	1.82	0.61	2.97	-	1.60	-	0.00	-	0.00	-	-	-
ORP (mV)	121	115	121	-	124	-	49	-	84	-	-	-
pH, Field (su)	7.34	7.01	6.71	-	7.28	-	6.72	-	6.75	-	-	-
Boron, Total (mg/L)	< 0.10	-	< 0.10	-	< 0.10	< 0.10	-	-	< 0.10	< 0.10	-	-
Calcium, Total (mg/L)	**182**	-	**192**	-	**160**	**150**	-	-	**180**	**167**	-	-
Chloride (mg/L)	**328**	-	**280**	-	**42.2**	**46.9**	-	-	**44.4**	**44.8**	-	-
Fluoride (mg/L)	< 0.20	-	**0.19**	-	< 0.20	< 0.20	-	-	**0.29**	**0.30**	-	-
Sulfate (mg/L)	**178**	-	**171**	-	**329**	**341**	-	-	**341**	**345**	-	-
pH (su)	**7.2**	-	**7.0**	-	**7.1**	**7.2**	-	-	**7.1**	**7.0**	-	-
TDS (mg/L)	**1,020**	-	**1130**	-	**828**	**901**	-	-	**928**	**927**	-	-
Antimony, Total (mg/L)	-	< 0.0010	-	-	-	-	< 0.0010	< 0.0010	-	-	-	-
Arsenic (mg/L)	-	**0.0012**	**0.0023**	-	-	-	< 0.0010	< 0.0010	< 0.0010	< 0.0010	-	-
Barium, Total (mg/L)	**0.083**	**0.098**	**0.12**	-	**0.045**	**0.041**	**0.050**	**0.045**	**0.051**	**0.049**	-	-
Beryllium, Total (mg/L)	-	< 0.0010	-	-	-	-	< 0.0010	< 0.0010	-	-	-	-
Cadmium, Total (mg/L)	-	< 0.00050	-	-	-	-	< 0.00050	< 0.00050	-	-	-	-
Chromium, Total (mg/L)	-	< 0.0050	-	-	-	-	< 0.0050	< 0.0050	-	-	-	-
Cobalt, Total (mg/L)	< 0.0010	< 0.0010	< 0.0010	-	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010	-	-
Lead, Total (mg/L)	-	< 0.010	-	-	-	-	< 0.010	< 0.010	-	-	-	-
Lithium, Total (mg/L)	< 0.010	< 0.010	< 0.010	-	**0.013**	< 0.010	**0.012**	**0.013**	**0.014**	**0.011**	-	-
Molybdenum, Total (mg/L)	-	< 0.0010	-	-	-	-	< 0.0010	< 0.0010	-	-	-	-
Selenium, Total (mg/L)	-	< 0.0010	-	-	-	-	< 0.0010	< 0.0010	-	-	-	-
Thallium, Total (mg/L)	-	< 0.0010	-	-	-	-	< 0.0010	< 0.0010	-	-	-	-
Mercury, Total (mg/L)	-	< 0.00020	-	-	-	-	< 0.00020	< 0.00020	-	-	-	-
Fluoride (mg/L)	< 0.20	< 0.20	**0.19**	-	< 0.20	< 0.20	< 0.20	**0.54**	**0.29**	**0.30**	-	-
Radium-226 & 228 Combined (pCi/L)	-	1.05 ± 0.898 (1.61)	-	**3.09 ± 1.25 (1.60)**	-	-	1.73 ± 1.52 (2.58)	0.342 ± 0.934 (1.88)	-	-	0.454 ± 0.701 (1.43)	0.809 ± 0.611 (1.11)

Notes:

Bold value: *Detection above laboratory reporting limit.*

Data presented in this table were verified against the laboratory and validation reports.

µS/cm = micro Siemens per centimeter

Deg C = degrees Celsius

ft btoc = feet below top of casing

mg/L = milligrams per liter

mV = millivolt

NA = Not Applicable

NTU = Nephelometric Turbidity Unit

ORP = oxidation reduction potential

pCi/L = picoCuries per liter

su = standard unit

TDS = total dissolved solids

TOC = top of casing

TABLE I
SUMMARY OF ANALYTICAL RESULTS - 2024 ASSESSMENT MONITORING
EVERGY KANSAS CENTRAL, INC.
TECUMSEH ENERGY CENTER, 322 LANDFILL
TECUMSEH, KANSAS

Location	Downgradient							
	MW-5				MW-6			
Measure Point (TOC)	916.18				911.28			
Sample Name	MW-5-030724	MW-5-062024	MW-5-091124	MW-5-092524	MW-6-030724	MW-6-062024	MW-6-091124	MW-6-09252
Sample Date	3/7/2024	06/20/2024	9/11/2024	9/25/2024	3/7/2024	06/20/2024	9/11/2024	9/25/2024
Final Lab Report Date	3/25/2024	07/05/2024	9/30/2024	N/A	3/25/2024	07/05/2024	9/30/2024	N/A
Lab Data Reviewed and Accepted	7/5/2024	09/10/2024	11/4/2024	11/4/2024	7/5/2024	09/10/2024	11/4/2024	11/4/2024
Depth to Water (ft btoc)	7.02	7.00	7.96	-	9.42	9.28	10.26	-
Temperature (Deg C)	10.68	20.70	19.75	-	10.92	16.99	16.43	-
Conductivity (µS/cm)	1,850	1690	1770	-	2,380	2440	2630	-
Turbidity (NTU)	1.9	0.0	3.1	-	19.8	0.0	7.4	-
Dissolved Oxygen (mg/L)	0.90	0.00	0.07	-	1.07	0.00	0.16	-
ORP (mV)	101	115	110	-	122	115	122	-
pH, Field (su)	7.20	6.70	7.1	-	7.27	6.86	6.71	-
Boron, Total (mg/L)	**0.38**	-	**0.36**	-	**0.45**	-	**0.47**	-
Calcium, Total (mg/L)	**250**	-	**253**	-	**400**	-	**405**	-
Chloride (mg/L)	**38.5**	-	**42.5**	-	**56.4**	-	**51.2**	-
Fluoride (mg/L)	**0.40**	-	**0.26**	-	**0.56**	-	**0.25**	-
Sulfate (mg/L)	**763**	-	**553**	-	**1,150**	-	**1110**	-
pH (su)	**6.9**	-	**6.9**	-	**7.1**	-	**7.0**	-
TDS (mg/L)	**1,390**	-	**1330**	-	**1,640**	-	**1850**	-
Antimony, Total (mg/L)	-	< 0.0010	-	-	-	< 0.0010	-	-
Arsenic (mg/L)	-	< 0.0010	< 0.0010	-	-	< 0.0010	< 0.0010	-
Barium, Total (mg/L)	**0.024**	**0.027**	**0.031**	-	**0.017**	**0.021**	**0.016**	-
Beryllium, Total (mg/L)	-	< 0.0010	-	-	-	< 0.0010	-	-
Cadmium, Total (mg/L)	-	< 0.00050	-	-	-	< 0.00050	-	-
Chromium, Total (mg/L)	-	< 0.0050	-	-	-	< 0.0050	-	-
Cobalt, Total (mg/L)	< 0.0010	< 0.0010	< 0.0010	-	**0.0014**	**0.0023**	**0.0024**	-
Lead, Total (mg/L)	-	< 0.010	-	-	-	< 0.010	-	-
Lithium, Total (mg/L)	**0.020**	**0.022**	**0.023**	-	**0.019**	**0.020**	**0.017**	-
Molybdenum, Total (mg/L)	-	< 0.0010	-	-	-	< 0.0010	-	-
Selenium, Total (mg/L)	-	< 0.0010	-	-	-	< 0.0010	-	-
Thallium, Total (mg/L)	-	< 0.0010	-	-	-	< 0.0010	-	-
Mercury, Total (mg/L)	-	< 0.00020	-	-	-	< 0.00020	-	-
Fluoride (mg/L)	**0.40**	< 0.20	**0.26**	-	**0.56**	**0.88**	**0.25**	-
Radium-226 & 228 Combined (pCi/L)	-	**1.17 ± 0.752 (0.971)**	-	0.930 ± 0.804 (1.51)	-	**1.45 ± 0.815 (1.14)**	-	**1.55 ± 0.931 (1.47)**

Notes:

Bold value: *Detection above laboratory reporting limit.*

Data presented in this table were verified against the laboratory and validation reports.

µS/cm = micro Siemens per centimeter

Deg C = degrees Celsius

ft btoc = feet below top of casing

mg/L = milligrams per liter

mV = millivolt

NA = Not Applicable

NTU = Nephelometric Turbidity Unit

ORP = oxidation reduction potential

pCi/L = picoCuries per liter

su = standard unit

TDS = total dissolved solids

TOC = top of casing

TABLE II
ASSESSMENT GROUNDWATER MONITORING - DETECTED APPENDIX IV GWPS
SEPTEMBER 2023 SAMPLING EVENT
TECUMSEH ENERGY CENTER
322 LANDFILL
TECUMSEH, KANSAS

Well #	Background Value[1,2]	GWPS
CCR Appendix-IV Barium, Total (mg/L)		
MW-4 (upgradient)	0.132	NA
MW-1		2
MW-5		2
MW-6		2
CCR Appendix-IV Cobalt, Total (mg/L)		
MW-4 (upgradient)	0.001	NA
MW-1		0.006
MW-5		0.006
MW-6		0.006
CCR Appendix-IV Fluoride, Total (mg/L)		
MW-4 (upgradient)	0.350	NA
MW-1		4.0
MW-5		4.0
MW-6		4.0
CCR Appendix-IV Lithium, Total (mg/L)		
MW-4 (upgradient)	0.010[2]	NA
MW-1		0.040
MW-5		0.040
MW-6		0.040

Notes:

[1] *Based on background data collected from 08/17/2016 through 09/09/2022, unless otherwise noted.*

[2] *Based on background data collected from 08/17/2016 through 06/05/2023.*

CCR = coal combustion residuals

GWPS = groundwater protection standard

mg/L = milligrams per Liter

NA = not applicable

TABLE III
ASSESSMENT GROUNDWATER MONITORING - DETECTED APPENDIX IV GWPS
MARCH 2024 SAMPLING EVENT
TECUMSEH ENERGY CENTER
322 LANDFILL
TECUMSEH, KANSAS

Well #	Background Value[1,2]	GWPS
CCR Appendix-IV Barium, Total (mg/L)		
MW-4 (upgradient)	0.131	NA
MW-1		2
MW-5		2
MW-6		2
CCR Appendix-IV Cobalt, Total (mg/L)		
MW-4 (upgradient)	0.001	NA
MW-1		0.006
MW-5		0.006
MW-6		0.006
CCR Appendix-IV Fluoride, Total (mg/L)		
MW-4 (upgradient)	0.350	NA
MW-1		4.0
MW-5		4.0
MW-6		4.0
CCR Appendix-IV Lithium, Total (mg/L)		
MW-4 (upgradient)	0.010[2]	NA
MW-1		0.040
MW-5		0.040
MW-6		0.040

Notes:

[1] *Based on background data collected from 08/17/2016 through 03/07/2024, unless otherwise noted.*

[2] *Based on background data collected from 08/17/2016 through 06/05/2023.*

CCR = coal combustion residuals

GWPS = groundwater protection standard

mg/L = milligrams per Liter

NA = not applicable

FIGURES

LEGEND

- NEW COMPLIANCE WELL
- MONITORING WELL
- PIEZOMETER OBSERVATION ONLY
- 322 LANDFILL BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. AERIAL IMAGERY SOURCE: NEARMAP, 13 JULY 2024

N

0 300 600
SCALE IN FEET

HALEY ALDRICH

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

322 LANDFIELL MONITORING WELL LOCATION MAP

evergy

JANUARY 2025

FIGURE 1

GIS FILE PATH: \\haleyaldrich.com\share\phx_common\Projects\Westar\GIS\Tecumseh_Energy_Center\210310_001_TECUMSEH_ENERGY_CENTER.aprx - USER: khensen - LAST SAVED: 1/21/2025 4:17 AM

LEGEND

- MONITORING WELL
- PIEZOMETER OBSERVATION ONLY
- ESTIMATED GROUNDWATER POTENTIOMETRIC OBSERVATION ELEVATION CONTOUR, IN FEET
- GROUNDWATER FLOW DIRECTION AND APPROXIMATE GROUNDWATER FLOW RATE (FEET/YEAR)
- ASH LANDFILL

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.

2. GROUNDWATER POTENTIOMETRIC ELEVATIONS WERE MEASURED 7 MARCH 2024.

3. THE GROUNDWATER FLOW RATE WAS APPROXIMATED USING THE HYDRAULIC GRADIENT CALCULATED FROM GROUNDWATER POTENTIOMETIRIC ELEVATIONS MEASURED 7 MARCH 2024 AND THE CONDUCTIVITY VALUES AND EFFECTIVE POROSITY VALUES OBTAINED FROM SLUG TESTS COMPLETED APRIL 2016.

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

5. AERIAL IMAGERY SOURCE: NEARMAP, 13 JULY 2024

N

0 300 600
SCALE IN FEET

HALEY ALDRICH

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

322 LANDFILL GROUNDWATER POTENTIOMETRIC ELEVATION CONTOUR MAP MARCH 7, 2024

evergy

JANUARY 2025

FIGURE 2

GIS: \\haleyaldrich.com\share\phx_common\Projects\Westar\GIS\Tecumseh Energy Center\Maps\2024 041129778 056 0001 322_GDWTR_CONTOUR_MAP_MARCH_2024.mxd - khensen - 1/20/2025 4:28:57 PM

LEGEND

- MONITORING WELL
- PIEZOMETER
- ESTIMATED GROUNDWATER POTENTIOMETRIC OBSERVATION ELEVATION CONTOUR, IN FEET, DASHED WHERE INFERRED
- GROUNDWATER FLOW DIRECTION AND APPROXIMATE GROUNDWATER FLOW RATE (FT/YR)
- 322 LANDFILL BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.

2. GROUNDWATER POTENTIOMETRIC ELEVATIONS WERE MEASURED 20 JUNE, 2024.

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

4. THE GROUNDWATER FLOW RATE WAS APPROXIMATED USING THE HYDRAULIC GRADIENT CALCULATED FROM GROUNDWATER POTENTIOMETRIC ELEVATIONS MEASURED 20 JUNE, 2024 AND THE CONDUCTIVITY VALUES AND EFFECTIVE POROSITY VALUES OBTAINED FROM SLUG TESTS COMPLETED APRIL 2016.

5. AERIAL IMAGERY SOURCE: ESRI, 13 JULY 2024

N

0 300 600

SCALE IN FEET

HALEY ALDRICH

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

322 LANDFILL GROUNDWATER POTENTIOMETRIC ELEVATION CONTOUR MAP JUNE 20, 2024

evergy

JANUARY 2025

FIGURE 3

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LEGEND

- MONITORING WELL
- PIEZOMETER OBSERVATION ONLY
- ESTIMATED GROUNDWATER POTENTIOMETRIC OBSERVATION CONTOUR, IN FEET, DASHED WHERE INFERRED
- GROUNDWATER FLOW DIRECTION AND APPROXIMATE GROUNDWATER FLOW RATE (FEET/YEAR)
- 322 LANDFILL BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.

2. GROUNDWATER POTENTIOMETRIC ELEVATIONS WERE MEASURED 11 SEPTEMBER 2024.

3. THE GROUNDWATER FLOW RATE WAS APPROXIMATED USING THE HYDRAULIC GRADIENT CALCULATED FROM GROUNDWATER POTENTIOMETIRIC ELEVATIONS MEASURED 11 SEPTEMBER 2024 AND THE CONDUCTIVITY VALUES AND EFFECTIVE POROSITY VALUES OBTAINED FROM SLUG TESTS COMPLETED APRIL 2016.

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

5. AERIAL IMAGERY SOURCE: NEARMAP, 13 JULY 2024

N

0 300 600
SCALE IN FEET

HALEY ALDRICH

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

322 LANDFILL GROUNDWATER POTENTIOMETRIC ELEVATION CONTOUR MAP SEPTEMBER 11, 2024

evergy

JANUARY 2025

FIGURE 4

GIS FILE PATH: G:\Projects\Westar\GIS\Tecumseh_Energy_Center\210310_001_TECUMSEH_ENERGY_CENTER_GROUNDWATER_CONTOURS.aprx - USER: khensen - LAST SAVED: 1/28/2025 2:46 PM

ATTACHMENT 1
Statistical Analyses

ATTACHMENT 1-1
September 2023 Semiannual Groundwater Assessment Monitoring Data Statistical Evaluation

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

TECHNICAL MEMORANDUM

February 6, 2024
File No. 129778-048

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 2023 Semiannual Groundwater Assessment Monitoring Data Statistical Evaluation
Completed January 10, 2024
Tecumseh Energy Center
322 Landfill

Pursuant to Title 40 Code of Federal Regulations (40 CFR) §§ 257.93 and 257.95 (Rule), this memorandum summarizes the statistical evaluation of the analytical results for the **September 2023** semiannual assessment monitoring groundwater sampling event for the Tecumseh Energy Center (TEC) 322 Landfill. This semiannual assessment monitoring groundwater sampling event was completed on **September 5, 2023.** All laboratory results were received and validated on **December 18, 2023**.

The statistical evaluation discussed in this memorandum was conducted to determine if Appendix IV groundwater monitoring constituents have been detected in downgradient wells at concentrations that represent a statistically significant increase (SSI) above background values and if one or more of the constituents have been detected at statistically significant levels (SSL) above the groundwater protection standard (GWPS) consistent with the requirements of the Rule. GWPSs for each of the Appendix IV constituents have been set equal to the highest value of the maximum contaminant level, levels provided in 40 CFR § 257.95(h)(2) (from regional screening levels), or background concentrations.

Statistical Evaluation of Appendix IV Constituents

The Rule provides four specific options for statistical evaluation of groundwater quality data collected at a coal combustion residual (CCR) unit (40 CFR § 257.93(f)(1-4)). The statistical method used for these evaluations (tolerance limit [TL]) was certified by Haley & Aldrich, Inc. on January 14, 2019. The TL method, as determined applicable for this sampling event, was used to evaluate potential SSLs above background. Background levels for each constituent listed in Appendix IV were computed as upper tolerance limits (UTL), and a minimum 95 percent confidence coefficient and 95 percent coverage. The

most recent groundwater sampling event from each compliance well was compared to the corresponding background UTL to determine if a SSI existed.

STATISTICAL EVALUATION

An interwell evaluation was used to determine SSIs. Interwell evaluation compares the most recent values from downgradient compliance wells against a background dataset composed of upgradient well data. Because the CCR unit has transitioned into assessment monitoring, no statistical evaluations were conducted on Appendix III (detection monitoring) semiannual assessment monitoring data.

The TL method was used to complete statistical evaluations of the referenced dataset. The TL procedure is one in which a concentration limit for each constituent is established from the distribution of the background data, with a minimum 95 percent confidence level. The upper endpoint of a tolerance interval is called the UTL. Depending on the data distribution, parametric or non-parametric TL procedures are used to evaluate groundwater monitoring data using this method. Parametric TLs 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 TL. If all the background data are non-detect, a maximum reporting limit may serve as an appropriate UTL.

These statistical evaluations were conducted using the background dataset for all Appendix IV constituents that were detected in the annual assessment monitoring sample event using parametric TLs. If an Appendix IV constituent concentration from the **September 2023** sampling event was above the GWPS, the lower confidence limit (LCL) for the downgradient well constituent will be used to evaluate if a SSI is present. The LCL is the lower end of the confidence interval range, which is an estimated concentration range intended to contain the true mean or median of the population from which the sample is drawn. The confidence interval range is designed to locate the true population mean or median with a high degree of statistical confidence, or conversely, with a low probability of error.

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

BACKGROUND DISTRIBUTIONS

The groundwater analytical results for each sampling event from the background sample location MW-4 were combined to calculate the UTL for each detected Appendix IV constituent. The variability and distribution of the pooled dataset were evaluated to determine the method for UTL 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 all constituents except lithium, which was updated through **June 2023.**

RESULTS OF APPENDIX IV DOWNGRADIENT STATISTICAL COMPARISONS

Sample concentrations from the downgradient wells for each of the detected Appendix IV constituents from the **September 2023** semiannual assessment monitoring event were compared to their respective background UTLs and GWPSs (Table I). A sample concentration greater than the background UTL is considered to represent a SSI. A sample concentration greater than the GWPS is considered to represent a SSL. 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 2023, no SSLs above GWPS occurred at the TEC 322 Landfill.**

Attachments:

Table I – Summary of Semiannual Assessment Groundwater Monitoring Statistical Evaluation

TABLE

TABLE I
SUMMARY OF SEMIANNUAL ASSESSMENT GROUNDWATER MONITORING STATISTICAL EVALUATION
SEPTEMBER 2023 SAMPLING EVENT
TECUMSEH ENERGY CENTER 322 LANDFILL
TECUMSEH, KANSAS

										MCL Comparison							Interwell Analysis		Groundwater Protection Standard	
Location Id	Frequency of Detection	Percent Non-Detects	Range of Non-Detect	Maximum Detect	Variance	Standard Deviation	Coefficient of Variance	CCR MCL/RSL §257.95(h)(2)*	Report Result Unit	Number of Detection Exceedances	Number of Non-Detection Exceedances	Outlier Presence	Outlier Removed	Trend	Distribution Well	September 2023 Concentration (mg/L)	Background Limits[1] (UTL) mg/L	SSI	GWPS (Higher of MCL/RSL or Upper Tolerance Limit) mg/L	SSL
CCR Appendix-IV: Barium, Total (mg/L)																				
MW-4 (upgradient)	25/25	0%	-	0.14	0.0001779	0.01334	0.1244	2	mg/L	0	0	Yes	No	Decreasing	Normal	0.11	0.132		2	
MW-1	25/25	0%	-	0.2	0.002899	0.05384	0.5114	2	mg/L	0	0	No	No	Decreasing		0.051		No		No
MW-5	25/25	0%	-	0.04	0.00003391	0.005823	0.2434	2	mg/L	0	0	No	No	Decreasing		0.027		No		No
MW-6	25/25	0%	-	0.041	0.00004147	0.00644	0.309	2	mg/L	0	0	Yes	No	Decreasing		0.016		No		No
CCR Appendix-IV: Cobalt, Total (mg/L)																				
MW-4 (upgradient)	0/25	100%	0.001-0.001		0	0	0	0.006	mg/L	0	0	NA	NA	NA	NA	<0.0010	0.001		0.006	
MW-1	14/25	44%	0.001-0.001	0.0086	2.995E-06	0.001731	0.9185	0.006	mg/L	1	0	Yes	No	Decreasing		<0.0010		No		No
MW-5	21/25	16%	0.001-0.001	0.0021	1.687E-07	0.0004108	0.2574	0.006	mg/L	0	0	No	No	Decreasing		<0.0010		No		No
MW-6	25/25	0%	-	0.0033	2.258E-07	0.0004752	0.2031	0.006	mg/L	0	0	No	No	Stable		0.0022		Yes		No
CCR Appendix-IV: Fluoride (mg/L)																				
MW-4 (upgradient)	14/26	46%	0.2-0.2	0.35	0.00127	0.03564	0.1571	4.0	mg/L	0	0	Yes	No	Stable	Non-parametric	<0.20	0.350		4.0	
MW-1	17/26	35%	0.2-0.2	0.46	0.007927	0.08904	0.2865	4.0	mg/L	0	0	No	No	Decreasing		<0.20		No		No
MW-5	16/26	38%	0.2-0.2	0.46	0.005937	0.07705	0.281	4.0	mg/L	0	0	No	No	Stable		<0.20		No		No
MW-6	21/26	19%	0.2-0.2	0.56	0.009223	0.09604	0.2903	4.0	mg/L	0	0	No	No	Stable		0.40		Yes		No
CCR Appendix-IV: Lithium, Total (mg/L)																				
MW-4 (upgradient)	0/23	100%	0.01-0.01		0	0	0	0.040	mg/L	0	0	NA	NA	NA	NA	<0.010	0.010[2]		0.040	
MW-1	4/23	83%	0.01-0.01	0.011	1.186E-07	0.0003444	0.03399	0.040	mg/L	0	0	No	No	NA		0.011		No		No
MW-5	18/23	22%	0.01-0.01	0.024	0.00002371	0.004869	0.3128	0.040	mg/L	0	0	No	No	Stable		0.024		No		No
MW-6	17/23	26%	0.01-0.01	0.022	0.00001749	0.004183	0.2924	0.040	mg/L	0	0	No	No	Stable		0.020		No		No

Notes:

[1] *Based on background data collected from 08/17/2016 through 09/09/2022, unless otherwise noted.*

[2] *Based on background data collected from 08/17/2016 through 06/05/2023.*

** Values obtained from U.S. Environmental Protection Agency Federal CCR Rule Title 40 Code of Federal Regulations (CFR) § 257.95(h)(2)*

CCR = coal combustion residuals

GWPS = Groundwater Protection Standard

MCL = maximum contaminant level

mg/L = milligrams per Liter

NA = not analyzed

RSL = regional screening level

SSI = statistically significant increase

SSL = statistically significant level

UTL = upper tolerance limits

ATTACHMENT 1-2
March 2024 Semiannual Groundwater Assessment Monitoring Data Statistical Evaluation

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

TECHNICAL MEMORANDUM

August 14, 2024
File No. 0210310-000

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 2024 Semiannual Groundwater Assessment Monitoring Data
Statistical Evaluation
Completed July 18, 2024
Tecumseh Energy Center
322 Landfill

Pursuant to Title 40 Code of Federal Regulations (40 CFR) §§ 257.93 and 257.95 (Rule), this memorandum summarizes the statistical evaluation of the analytical results for the **March 2024** semiannual assessment monitoring groundwater sampling event for the Tecumseh Energy Center (TEC) 322 Landfill. This semiannual assessment monitoring groundwater sampling event was completed on **March 7, 2024.** All laboratory results were received and validated on **July 5, 2024**.

The statistical evaluation discussed in this memorandum was conducted to determine if Appendix IV groundwater monitoring constituents have been detected in downgradient wells at concentrations that represent a statistically significant increase (SSI) above background values and if one or more of the constituents have been detected at statistically significant levels (SSL) above the groundwater protection standard (GWPS) consistent with the requirements of the Rule. GWPSs for each of the Appendix IV constituents have been set equal to the highest value of the maximum contaminant level, levels provided in 40 CFR § 257.95(h)(2) (from regional screening levels), or background concentrations.

Statistical Evaluation of Appendix IV Constituents

The Rule provides four specific options for statistical evaluation of groundwater quality data collected at a coal combustion residual (CCR) unit (40 CFR § 257.93(f)(1-4)). The statistical method used for these evaluations (tolerance limit [TL]) was certified by Haley & Aldrich, Inc. on January 14, 2019. The TL method, as determined applicable for this sampling event, was used to evaluate potential SSLs above

background. Background levels for each constituent listed in Appendix IV were computed as upper tolerance limits (UTL), and a minimum 95 percent confidence coefficient and 95 percent coverage. The most recent groundwater sampling event from each compliance well was compared to the corresponding background UTL to determine if a SSI existed.

STATISTICAL EVALUATION

An interwell evaluation was used to determine SSIs. Interwell evaluation compares the most recent values from downgradient compliance wells against a background dataset composed of upgradient well data. Because the CCR unit has transitioned into assessment monitoring, no statistical evaluations were conducted on Appendix III (detection monitoring) semiannual assessment monitoring data.

The TL method was used to complete statistical evaluations of the referenced dataset. The TL procedure is one in which a concentration limit for each constituent is established from the distribution of the background data, with a minimum 95 percent confidence level. The upper endpoint of a tolerance interval is called the UTL. Depending on the data distribution, parametric or non-parametric TL procedures are used to evaluate groundwater monitoring data using this method. Parametric TLs 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 TL. If all the background data are non-detect, a maximum reporting limit may serve as an appropriate UTL.

These statistical evaluations were conducted using the background dataset for all Appendix IV constituents that were detected in the annual assessment monitoring sample event using parametric TLs. If an Appendix IV constituent concentration from the **March 2024** sampling event was above the GWPS, the lower confidence limit (LCL) for the downgradient well constituent will be used to evaluate if a SSI is present. The LCL is the lower end of the confidence interval range, which is an estimated concentration range intended to contain the true mean or median of the population from which the sample is drawn. The confidence interval range is designed to locate the true population mean or median with a high degree of statistical confidence, or conversely, with a low probability of error.

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

BACKGROUND DISTRIBUTIONS

The groundwater analytical results for each sampling event from the background sample location MW-4 were combined to calculate the UTL for each detected Appendix IV constituent. The variability and distribution of the pooled dataset were evaluated to determine the method for UTL 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 **March 2024** for all constituents except lithium, which was updated through **June 2023.**

RESULTS OF APPENDIX IV DOWNGRADIENT STATISTICAL COMPARISONS

Sample concentrations from the downgradient wells for each of the detected Appendix IV constituents from the **March 2024** semiannual assessment monitoring event were compared to their respective background UTLs and GWPSs (Table I). A sample concentration greater than the background UTL is considered to represent a SSI. A sample concentration greater than the GWPS is considered to represent a SSL. 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 2024, no SSLs above GWPS occurred at the TEC 322 Landfill.**

Attachments:

Table I – Summary of Semiannual Assessment Groundwater Monitoring Statistical Evaluation

TABLE

TABLE I
SUMMARY OF SEMIANNUAL ASSESSMENT GROUNDWATER MONITORING STATISTICAL EVALUATION
MARCH 2024 SAMPLING EVENT
TECUMSEH ENERGY CENTER 322 LANDFILL
TECUMSEH, KANSAS

										MCL Comparison							Interwell Analysis		Groundwater Protection Standard	
Location Id	Frequency of Detection	Percent Non-Detects	Range of Non-Detect	Maximum Detect	Variance	Standard Deviation	Coefficient of Variance	CCR MCL/RSL §257.95(h)(2)*	Report Result Unit	Number of Detection Exceedances	Number of Non-Detection Exceedances	Outlier Presence	Outlier Removed	Trend	Distribution Well	March 2024 Concentration (mg/L)	Background Limits[1] (UTL) mg/L	SSI	GWPS (Higher of MCL/RSL or UTL) mg/L	SSL
CCR Appendix-IV: Barium, Total (mg/L)																				
MW-4	26/26	0%	-	0.14	0.0001934	0.01391	0.1308	2	mg/L	0	0	No	No	Decreasing	Normal	0.083	0.131		2	
MW-1	26/26	0%	-	0.2	0.002923	0.05406	0.5251	2	mg/L	0	0	Yes	No	Decreasing		0.045		No		No
MW-5	26/26	0%	-	0.04	0.00003255	0.005706	0.2385	2	mg/L	0	0	No	No	Stable		0.024		No		No
MW-6	26/26	0%	-	0.041	0.00004038	0.006355	0.3071	2	mg/L	0	0	Yes	No	Decreasing		0.017		No		No
CCR Appendix-IV: Cobalt, Total (mg/L)																				
MW-4	0/26	100%	0.001-0.001		0	0	0	0.006	mg/L	0	0	NA	NA	NA	NA	< 0.0010	0.001		0.006	
MW-1	14/26	46%	0.001-0.001	0.0086	0.000002905	0.001704	0.9213	0.006	mg/L	1	0	Yes	No	Decreasing		< 0.0010		No		No
MW-5	21/26	19%	0.001-0.001	0.0021	1.756E-07	0.0004191	0.2664	0.006	mg/L	0	0	Yes	No	Decreasing		< 0.0010		No		No
MW-6	26/26	0%	-	0.0033	2.508E-07	0.0005008	0.2174	0.006	mg/L	0	0	No	No	Stable		0.0014		Yes		No
CCR Appendix-IV: Fluoride (mg/L)																				
MW-4	14/27	48%	0.2-0.2	0.35	0.001248	0.03533	0.1564	4	mg/L	0	0	Yes	No	Decreasing	Non-parametric	< 0.20	0.350		4.0	
MW-1	17/27	37%	0.2-0.2	0.46	0.008077	0.08987	0.2931	4	mg/L	0	0	No	No	Decreasing		< 0.20		No		No
MW-5	17/27	37%	0.2-0.2	0.46	0.006295	0.07934	0.2845	4	mg/L	0	0	No	No	Stable		0.40		Yes		No
MW-6	22/27	19%	0.2-0.2	0.56	0.01081	0.104	0.3065	4	mg/L	0	0	No	No	Stable		0.56		Yes		No
CCR Appendix-IV: Lithium, Total (mg/L)																				
MW-4	0/24	100%	0.01-0.01		0	0	0	0.04	mg/L	0	0	NA	NA	NA	NA	< 0.010	0.010[2]		0.040	
MW-1	5/24	79%	0.01-0.01	0.013	4.565E-07	0.0006757	0.06592	0.04	mg/L	0	0	Yes	No	NA		0.013		Yes		No
MW-5	19/24	21%	0.01-0.01	0.024	0.0000235	0.004848	0.3078	0.04	mg/L	0	0	No	No	Stable		0.020		Yes		No
MW-6	18/24	25%	0.01-0.01	0.022	0.00001765	0.004201	0.2898	0.04	mg/L	0	0	No	No	Stable		0.019		Yes		No

Notes:

[1] Based on background data collected from 08/17/2016 through 03/07/2024, unless otherwise noted.

[2] Based on background data collected from 08/17/2016 through 06/05/2023.

** Values obtained from U.S. Environmental Protection Agency Federal CCR Rule Title 40 Code of Federal Regulations (CFR) § 257.95(h)(2)*

CCR = coal combustion residuals

GWPS = Groundwater Protection Standard

MCL = maximum contaminant level

mg/L = milligrams per Liter

NA = not analyzed

RSL = regional screening level

SSI = statistically significant increase

SSL = statistically significant level

UTL = upper tolerance limits

ATTACHMENT 2
Laboratory Analytical Reports

ATTACHMENT 2-1
March 2024 Semiannual Sampling Event
Laboratory Analytical Report

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

March 25, 2024

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

RE: Project: TEC LF 322 CCR
Pace Project No.: 60448640

Dear Jake Humphrey:

Enclosed are the analytical results for sample(s) received by the laboratory on March 07, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Kansas City

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

Sincerely,

Alice Spiller

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

Enclosures

cc: Shelly Gomez, Evergy
Laura Hines, Evergy, Inc.
Heath Horyna, Evergy, Inc.
Shannon Hughes, Evergy
Adam Irvin, Evergy
Samantha Kaney, Haley & Aldrich
Danielle Oberbroeckling, Haley & Aldrich
Zach Phillips, Evergy, Inc.
Melanie Satanek, Haley & Aldrich, Inc.
Adriana Sosa, Haley & Aldrich, Inc.
Andrew Watson, Haley & Aldrich

Pace Analytical Services, LLC
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CERTIFICATIONS

Project: TEC LF 322 CCR
Pace Project No.: 60448640

Pace Analytical Services Kansas

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

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: TEC LF 322 CCR
Pace Project No.: 60448640

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60448640001	**MW-1-030724**	Water	03/07/24 10:35	03/07/24 16:50
60448640002	**MW-4-030724**	Water	03/07/24 10:05	03/07/24 16:50
60448640003	**MW-5-030724**	Water	03/07/24 09:25	03/07/24 16:50
60448640004	**MW-6-030724**	Water	03/07/24 11:15	03/07/24 16:50
60448640005	**TEC-322LF-DUP-030724**	Water	03/07/24 00:00	03/07/24 16:50

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SAMPLE ANALYTE COUNT

Project: TEC LF 322 CCR
Pace Project No.: 60448640

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60448640001	**MW-1-030724**	EPA 200.7	JXD	3	PASI-K
		EPA 6010	JXD	1	PASI-K
		EPA 200.8	JGP	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 4500-H+B	SR1	1	PASI-K
		EPA 300.0	PL, RKA	3	PASI-K
60448640002	**MW-4-030724**	EPA 200.7	JXD	3	PASI-K
		EPA 6010	JXD	1	PASI-K
		EPA 200.8	JGP	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 4500-H+B	SR1	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60448640003	**MW-5-030724**	EPA 200.7	JXD	3	PASI-K
		EPA 6010	JXD	1	PASI-K
		EPA 200.8	JGP	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 4500-H+B	SR1	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60448640004	**MW-6-030724**	EPA 200.7	JXD	3	PASI-K
		EPA 6010	JXD	1	PASI-K
		EPA 200.8	JGP	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 4500-H+B	SR1	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60448640005	**TEC-322LF-DUP-030724**	EPA 200.7	JXD	3	PASI-K
		EPA 6010	JXD	1	PASI-K
		EPA 200.8	JGP	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 4500-H+B	SR1	1	PASI-K
		EPA 300.0	PL	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: TEC LF 322 CCR
Pace Project No.: 60448640

Method: **EPA 200.7**
Description: 200.7 Metals, Total
Client: Evergy Kansas Central, Inc.
Date: March 25, 2024

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

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

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

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

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

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

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

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

QC Batch: 886172

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60448635016,60448640004

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

- MS (Lab ID: 3507998)
  - Calcium

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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

PROJECT NARRATIVE

Project: TEC LF 322 CCR
Pace Project No.: 60448640

Method: **EPA 6010**
Description: 6010 MET ICP
Client: Evergy Kansas Central, Inc.
Date: March 25, 2024

General Information:
5 samples were analyzed for EPA 6010 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 3010 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
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(913)599-5665

PROJECT NARRATIVE

Project: TEC LF 322 CCR
Pace Project No.: 60448640

Method: **EPA 200.8**
Description: 200.8 MET ICPMS
Client: Evergy Kansas Central, Inc.
Date: March 25, 2024

General Information:
5 samples were analyzed for EPA 200.8 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 200.8 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.

Internal Standards:
All internal standards were within QC limits 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: TEC LF 322 CCR
Pace Project No.: 60448640

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: Evergy Kansas Central, Inc.
Date: March 25, 2024

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

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

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

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

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

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

Additional Comments:

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PROJECT NARRATIVE

Project: TEC LF 322 CCR
Pace Project No.: 60448640

Method: **SM 4500-H+B**
Description: 4500H+ pH, Electrometric
Client: Evergy Kansas Central, Inc.
Date: March 25, 2024

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

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

H6: Analysis initiated outside of the 15 minute EPA required holding time.
- MW-1-030724 (Lab ID: 60448640001)
- MW-4-030724 (Lab ID: 60448640002)
- MW-5-030724 (Lab ID: 60448640003)
- MW-6-030724 (Lab ID: 60448640004)
- TEC-322LF-DUP-030724 (Lab ID: 60448640005)

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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(913)599-5665

PROJECT NARRATIVE

Project: TEC LF 322 CCR
Pace Project No.: 60448640

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: Evergy Kansas Central, Inc.
Date: March 25, 2024

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

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

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

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

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

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

Additional Comments:

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

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

ANALYTICAL RESULTS

Project: TEC LF 322 CCR
Pace Project No.: 60448640

Sample: MW-1-030724 **Lab ID: 60448640001** Collected: 03/07/24 10:35 Received: 03/07/24 16:50 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							
Barium, Total Recoverable	**0.045**	mg/L	0.0050	1	03/12/24 10:19	03/13/24 15:15	7440-39-3	
Boron, Total Recoverable	**<0.10**	mg/L	0.10	1	03/12/24 10:19	03/13/24 15:15	7440-42-8	
Calcium, Total Recoverable	**160**	mg/L	0.20	1	03/12/24 10:19	03/13/24 15:15	7440-70-2	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Pace Analytical Services - Kansas City							
Lithium, Total Recoverable	**0.013**	mg/L	0.010	1	03/12/24 10:19	03/13/24 16:53	7439-93-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Cobalt, Total Recoverable	**<0.0010**	mg/L	0.0010	1	03/12/24 10:19	03/18/24 13:42	7440-48-4	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**828**	mg/L	13.3	1		03/14/24 11:29		
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		03/13/24 11:24		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**42.2**	mg/L	10.0	10		03/15/24 23:11	16887-00-6	
Fluoride	**<0.20**	mg/L	0.20	1		03/14/24 20:30	16984-48-8	
Sulfate	**329**	mg/L	100	100		03/14/24 20:42	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: TEC LF 322 CCR
Pace Project No.: 60448640

Sample: MW-4-030724 **Lab ID: 60448640002** Collected: 03/07/24 10:05 Received: 03/07/24 16:50 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							
Barium, Total Recoverable	**0.083**	mg/L	0.0050	1	03/12/24 10:19	03/13/24 15:17	7440-39-3	
Boron, Total Recoverable	**<0.10**	mg/L	0.10	1	03/12/24 10:19	03/13/24 15:17	7440-42-8	
Calcium, Total Recoverable	**182**	mg/L	0.20	1	03/12/24 10:19	03/13/24 15:17	7440-70-2	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Pace Analytical Services - Kansas City							
Lithium, Total Recoverable	**<0.010**	mg/L	0.010	1	03/12/24 10:19	03/13/24 16:55	7439-93-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Cobalt, Total Recoverable	**<0.0010**	mg/L	0.0010	1	03/12/24 10:19	03/18/24 13:44	7440-48-4	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**1020**	mg/L	20.0	1		03/14/24 11:29		
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		03/13/24 11:23		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**328**	mg/L	100	100		03/14/24 21:07	16887-00-6	
Fluoride	**<0.20**	mg/L	0.20	1		03/14/24 20:55	16984-48-8	
Sulfate	**178**	mg/L	100	100		03/14/24 21:07	14808-79-8	

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ANALYTICAL RESULTS

Project: TEC LF 322 CCR
Pace Project No.: 60448640

Sample: MW-5-030724 **Lab ID: 60448640003** Collected: 03/07/24 09:25 Received: 03/07/24 16:50 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							
Barium, Total Recoverable	**0.024**	mg/L	0.0050	1	03/12/24 10:19	03/13/24 15:19	7440-39-3	
Boron, Total Recoverable	**0.38**	mg/L	0.10	1	03/12/24 10:19	03/13/24 15:19	7440-42-8	
Calcium, Total Recoverable	**250**	mg/L	0.20	1	03/12/24 10:19	03/13/24 15:19	7440-70-2	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Pace Analytical Services - Kansas City							
Lithium, Total Recoverable	**0.020**	mg/L	0.010	1	03/12/24 10:19	03/13/24 16:56	7439-93-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Cobalt, Total Recoverable	**<0.0010**	mg/L	0.0010	1	03/12/24 10:19	03/18/24 13:46	7440-48-4	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**1390**	mg/L	20.0	1		03/14/24 11:30		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Kansas City							
pH at 25 Degrees C	**6.9**	Std. Units	0.10	1		03/13/24 11:21		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**38.5**	mg/L	20.0	20		03/14/24 17:35	16887-00-6	
Fluoride	**0.40**	mg/L	0.20	1		03/14/24 17:22	16984-48-8	
Sulfate	**763**	mg/L	200	200		03/14/24 17:49	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: TEC LF 322 CCR
Pace Project No.: 60448640

Sample: MW-6-030724 **Lab ID: 60448640004** Collected: 03/07/24 11:15 Received: 03/07/24 16:50 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							
Barium, Total Recoverable	**0.017**	mg/L	0.0050	1	03/12/24 10:19	03/13/24 15:21	7440-39-3	
Boron, Total Recoverable	**0.45**	mg/L	0.10	1	03/12/24 10:19	03/13/24 15:21	7440-42-8	
Calcium, Total Recoverable	**400**	mg/L	0.20	1	03/12/24 10:19	03/13/24 15:21	7440-70-2	M1
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Pace Analytical Services - Kansas City							
Lithium, Total Recoverable	**0.019**	mg/L	0.010	1	03/12/24 10:19	03/13/24 16:58	7439-93-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Cobalt, Total Recoverable	**0.0014**	mg/L	0.0010	1	03/12/24 10:19	03/18/24 13:50	7440-48-4	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**1640**	mg/L	40.0	1		03/14/24 11:32		
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		03/13/24 11:26		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**56.4**	mg/L	20.0	20		03/14/24 18:42	16887-00-6	
Fluoride	**0.56**	mg/L	0.20	1		03/14/24 18:29	16984-48-8	
Sulfate	**1150**	mg/L	200	200		03/14/24 18:56	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: TEC LF 322 CCR
Pace Project No.: 60448640

Sample: TEC-322LF-DUP-030724 **Lab ID: 60448640005** Collected: 03/07/24 00:00 Received: 03/07/24 16:50 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							
Barium, Total Recoverable	**0.041**	mg/L	0.0050	1	03/12/24 10:19	03/13/24 15:25	7440-39-3	
Boron, Total Recoverable	**<0.10**	mg/L	0.10	1	03/12/24 10:19	03/13/24 15:25	7440-42-8	
Calcium, Total Recoverable	**150**	mg/L	0.20	1	03/12/24 10:19	03/13/24 15:25	7440-70-2	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Pace Analytical Services - Kansas City							
Lithium, Total Recoverable	**<0.010**	mg/L	0.010	1	03/12/24 10:19	03/13/24 17:00	7439-93-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Cobalt, Total Recoverable	**<0.0010**	mg/L	0.0010	1	03/12/24 10:19	03/18/24 13:52	7440-48-4	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**901**	mg/L	13.3	1		03/14/24 11:32		
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		03/13/24 11:20		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Chloride	**46.9**	mg/L	20.0	20		03/14/24 19:22	16887-00-6	
Fluoride	**<0.20**	mg/L	0.20	1		03/14/24 19:09	16984-48-8	
Sulfate	**341**	mg/L	20.0	20		03/14/24 19:22	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: TEC LF 322 CCR
Pace Project No.: 60448640

QC Batch: 886172
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: 60448640001, 60448640002, 60448640003, 60448640004, 60448640005

METHOD BLANK: 3507994 Matrix: Water
Associated Lab Samples: 60448640001, 60448640002, 60448640003, 60448640004, 60448640005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Barium	mg/L	<0.0050	0.0050	03/13/24 14:50	
Boron	mg/L	<0.10	0.10	03/13/24 14:50	
Calcium	mg/L	<0.20	0.20	03/13/24 14:50	

LABORATORY CONTROL SAMPLE: 3507995

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	mg/L	1	0.97	97	85-115	
Boron	mg/L	1	0.92	92	85-115	
Calcium	mg/L	10	9.8	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3507996 3507997

Parameter	Units	60448635016 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	mg/L	0.23	1	1	1.2	1.2	95	95	70-130	0	20	
Boron	mg/L	0.85	1	1	1.8	1.8	93	92	70-130	0	20	
Calcium	mg/L	203	10	10	213	211	93	76	70-130	1	20	

MATRIX SPIKE SAMPLE: 3507998

Parameter	Units	60448640004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	mg/L	0.017	1	0.99	97	70-130	
Boron	mg/L	0.45	1	1.4	92	70-130	
Calcium	mg/L	400	10	394	-62	70-130	M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: TEC LF 322 CCR
Pace Project No.: 60448640

QC Batch: 886173 | Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 | Analysis Description: 200.8 MET
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60448640001, 60448640002, 60448640003, 60448640004, 60448640005

METHOD BLANK: 3507999 Matrix: Water
Associated Lab Samples: 60448640001, 60448640002, 60448640003, 60448640004, 60448640005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cobalt	mg/L	<0.0010	0.0010	03/18/24 13:16	

LABORATORY CONTROL SAMPLE: 3508000

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cobalt	mg/L	0.04	0.040	100	85-115	

MATRIX SPIKE SAMPLE: 3508001

Parameter	Units	60448635017 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cobalt	mg/L	<0.0010	0.08	0.076	94	70-130	

MATRIX SPIKE SAMPLE: 3508003

Parameter	Units	60448640005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cobalt	mg/L	<0.0010	0.04	0.037	93	70-130	

SAMPLE DUPLICATE: 3511816

Parameter	Units	60448635017 Result	Dup Result	RPD	Max RPD	Qualifiers
Cobalt	mg/L	<0.0010	<0.0010		20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: TEC LF 322 CCR
Pace Project No.: 60448640

QC Batch: 886175
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60448640001, 60448640002, 60448640003, 60448640004, 60448640005

METHOD BLANK: 3508004 Matrix: Water
Associated Lab Samples: 60448640001, 60448640002, 60448640003, 60448640004, 60448640005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lithium	mg/L	<0.010	0.010	03/13/24 16:27	

LABORATORY CONTROL SAMPLE: 3508005

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lithium	mg/L	1	0.95	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3508006 3508007

Parameter	Units	60448635016 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lithium	mg/L	0.034	1	1	0.95	0.97	91	94	75-125	3	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: TEC LF 322 CCR
Pace Project No.: 60448640

QC Batch: 886566 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60448640001, 60448640002, 60448640003, 60448640004, 60448640005

METHOD BLANK: 3509574 Matrix: Water
Associated Lab Samples: 60448640001, 60448640002, 60448640003, 60448640004, 60448640005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	03/14/24 11:28	

LABORATORY CONTROL SAMPLE: 3509575

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	882	88	80-120	

SAMPLE DUPLICATE: 3509576

Parameter	Units	60448640001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	828	872	5	10	

SAMPLE DUPLICATE: 3509577

Parameter	Units	60448736003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1220	1260	3	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: TEC LF 322 CCR
Pace Project No.: 60448640

QC Batch: 886370
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: 60448640001, 60448640002, 60448640003, 60448640004, 60448640005

SAMPLE DUPLICATE: 3508657

Parameter	Units	60448635012 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.1	7.2	1	5	H6

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: TEC LF 322 CCR
Pace Project No.: 60448640

QC Batch: 886491
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: 60448640001, 60448640002

METHOD BLANK: 3509182 Matrix: Water
Associated Lab Samples: 60448640001, 60448640002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<1.0	1.0	03/14/24 08:38	
Fluoride	mg/L	<0.20	0.20	03/14/24 08:38	
Sulfate	mg/L	<1.0	1.0	03/14/24 08:38	

LABORATORY CONTROL SAMPLE: 3509183

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	100	90-110	
Sulfate	mg/L	5	4.6	91	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3509184 3509185

Parameter	Units	60448635004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	257	500	500	706	701	90	89	80-120	1	15	
Fluoride	mg/L	0.53	2.5	2.5	2.9	3.0	96	98	80-120	1	15	
Sulfate	mg/L	633	500	500	1080	1080	90	90	80-120	0	15	

MATRIX SPIKE SAMPLE: 3509186

Parameter	Units	60448635013 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20.5	25	43.0	90	80-120	
Fluoride	mg/L	0.47	2.5	3.3	112	80-120	
Sulfate	mg/L	28.1	25	51.6	94	80-120	

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REPORT OF LABORATORY ANALYSIS

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(913)599-5665

QUALITY CONTROL DATA

Project: TEC LF 322 CCR
Pace Project No.: 60448640

QC Batch: 886492
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: 60448640003, 60448640004, 60448640005

METHOD BLANK: 3509190 Matrix: Water
Associated Lab Samples: 60448640003, 60448640004, 60448640005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<1.0	1.0	03/14/24 16:56	
Fluoride	mg/L	<0.20	0.20	03/14/24 16:56	
Sulfate	mg/L	<1.0	1.0	03/14/24 16:56	

LABORATORY CONTROL SAMPLE: 3509191

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	92	90-110	
Fluoride	mg/L	2.5	2.5	100	90-110	
Sulfate	mg/L	5	4.8	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3513549 3513550

Parameter	Units	60448574002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	ND	500	500	530	523	106	105	80-120	1	15	
Fluoride	mg/L	ND	250	250	295	292	118	117	80-120	1	15	
Sulfate	mg/L	571	500	500	1070	1080	100	102	80-120	1	15	

SAMPLE DUPLICATE: 3513551

Parameter	Units	60448574002 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	ND	<100		15	
Fluoride	mg/L	ND	<20.0		15	
Sulfate	mg/L	571	565	1	15	

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REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: TEC LF 322 CCR
Pace Project No.: 60448640

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

H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: TEC LF 322 CCR
Pace Project No.: 60448640

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60448640001	**MW-1-030724**	EPA 200.7	886172	EPA 200.7	886237
60448640002	**MW-4-030724**	EPA 200.7	886172	EPA 200.7	886237
60448640003	**MW-5-030724**	EPA 200.7	886172	EPA 200.7	886237
60448640004	**MW-6-030724**	EPA 200.7	886172	EPA 200.7	886237
60448640005	**TEC-322LF-DUP-030724**	EPA 200.7	886172	EPA 200.7	886237
60448640001	**MW-1-030724**	EPA 3010	886175	EPA 6010	886238
60448640002	**MW-4-030724**	EPA 3010	886175	EPA 6010	886238
60448640003	**MW-5-030724**	EPA 3010	886175	EPA 6010	886238
60448640004	**MW-6-030724**	EPA 3010	886175	EPA 6010	886238
60448640005	**TEC-322LF-DUP-030724**	EPA 3010	886175	EPA 6010	886238
60448640001	**MW-1-030724**	EPA 200.8	886173	EPA 200.8	886236
60448640002	**MW-4-030724**	EPA 200.8	886173	EPA 200.8	886236
60448640003	**MW-5-030724**	EPA 200.8	886173	EPA 200.8	886236
60448640004	**MW-6-030724**	EPA 200.8	886173	EPA 200.8	886236
60448640005	**TEC-322LF-DUP-030724**	EPA 200.8	886173	EPA 200.8	886236
60448640001	**MW-1-030724**	SM 2540C	886566		
60448640002	**MW-4-030724**	SM 2540C	886566		
60448640003	**MW-5-030724**	SM 2540C	886566		
60448640004	**MW-6-030724**	SM 2540C	886566		
60448640005	**TEC-322LF-DUP-030724**	SM 2540C	886566		
60448640001	**MW-1-030724**	SM 4500-H+B	886370		
60448640002	**MW-4-030724**	SM 4500-H+B	886370		
60448640003	**MW-5-030724**	SM 4500-H+B	886370		
60448640004	**MW-6-030724**	SM 4500-H+B	886370		
60448640005	**TEC-322LF-DUP-030724**	SM 4500-H+B	886370		
60448640001	**MW-1-030724**	EPA 300.0	886491		
60448640002	**MW-4-030724**	EPA 300.0	886491		
60448640003	**MW-5-030724**	EPA 300.0	886492		
60448640004	**MW-6-030724**	EPA 300.0	886492		
60448640005	**TEC-322LF-DUP-030724**	EPA 300.0	886492		

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-LENE-0009_Sam	WO# : 60448640
	Revision: 2 / Effective Date: 01/12/2	60448640

Client Name: Evergy

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

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

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

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

Thermometer Used: T296 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 2.5 **Corr. Factor** -0.3 **Corrected** 2.2

Date and initials of person examining contents: 03-11-2024 4

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#:** 67182	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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

CHAIN-OF-CUSTODY Analytical Request Document

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

LAB USE ONLY- Affix Workorder/Login Label Here

60441 8640

Scan QR Code for instructions

Company Name:	Evergy Kansas Central, Inc.	Contact/Report To:	Jake Humphrey
Street Address:	818 S Kansas Avenue, Topeka, KS 66612	Phone #:	(913)634-0605
		E-Mail:	jake.humphrey@evergy.com
		Cc E-Mail:	skaney@haleyaldrich.com
Customer Project #:			
Project Name:	TEC LF 322 CCR	Invoice To:	Tecumseh Center
		Invoice E-Mail:	evergyap@onlinecapturecenter.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	WSTR-2000018660
		Quote #:	

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

County / State origin of sample(s): Kansas

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

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

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

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

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

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

Specify Container Size **: 3 2 3
Identify Container Preservative Type***: 2 1 1
Analysis Requested

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	200.7 B,Ca,Ba 200.8 Co 6010 Li	2540C Total Dissolved Solids	pH, 300.0 Cl,F,SO4	Sample Comment
MW-1-030724	GW	Grab	-	-	3/7/2024	10:35	3	-	-	X	X	X	
MW-4-030724	GW	Grab	-	-	3/7/2024	10:05	3	-	-	X	X	X	
MW-5-030724	GW	Grab	-	-	3/7/2024	9:25	3	-	-	X	X	X	
MW-6-030724	GW	Grab	-	-	3/7/2024	11:15	3	-	-	X	X	X	
TEC-322LF-DUP-030724	GW	Grab	-	-	3/7/2024	-	3	-	-	X	X	X	

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

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

Lab Use Only
Proj. Mgr: Alice Spiller
AcctNum / Client ID:
Table #:
Profile / Template: 9656
Prelog / Bottle Ord. ID: EZ 3080051

Preservation non-conformance identified for sample.

Additional Instructions from Pace®:

Collected By:
(Printed Name): Jason R. Franks
Signature:

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:
	T298	-0.3	2.5	2.2	

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Tracking Number:
/ SCS	03/07/2024 / 16:30	JA Pace	3/7/24 1650	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In- Person [ ] Courier
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	[ ] FedEX [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: 1 of 1

Client: Evergy

Profile #

Site: TEC CF 322 CCR

Notes

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

Container Codes

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

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

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

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

Work Order Number: 60448640

ATTACHMENT 2-2
June 2024 Annual Assessment Sampling Event
Laboratory Analytical Report

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

July 19, 2024

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

RE: Project: TEC 322 LF CCR App IV RADCHEM
Pace Project No.: 60455357

Dear Jake Humphrey:

Enclosed are the analytical results for sample(s) received by the laboratory on June 20, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Greensburg

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
Nick Williams, Haley Aldrich

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CERTIFICATIONS

Project: TEC 322 LF CCR App IV RADCHEM
Pace Project No.: 60455357

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

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SAMPLE SUMMARY

Project: TEC 322 LF CCR App IV RADCHEM
Pace Project No.: 60455357

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60455357001	**MW-1-062024**	Water	06/20/24 08:25	06/20/24 14:00
60455357002	**MW-4-062024**	Water	06/20/24 11:20	06/20/24 14:00
60455357003	**MW-5-062024**	Water	06/20/24 10:20	06/20/24 14:00
60455357004	**MW-6-062024**	Water	06/20/24 09:15	06/20/24 14:00
60455357005	**TEC-322LF-DUP-062024**	Water	06/20/24 08:25	06/20/24 14:00

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SAMPLE ANALYTE COUNT

Project: TEC 322 LF CCR App IV RADCHEM
Pace Project No.: 60455357

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60455357001	**MW-1-062024**	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60455357002	**MW-4-062024**	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60455357003	**MW-5-062024**	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60455357004	**MW-6-062024**	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60455357005	**TEC-322LF-DUP-062024**	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

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PROJECT NARRATIVE

Project: TEC 322 LF CCR App IV RADCHEM
Pace Project No.: 60455357

Method: **EPA 903.1**
Description: 903.1 Radium 226
Client: Evergy Kansas Central, Inc.
Date: July 19, 2024

General Information:
5 samples were analyzed for EPA 903.1 by Pace Analytical Services Greensburg. 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:

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PROJECT NARRATIVE

Project: TEC 322 LF CCR App IV RADCHEM
Pace Project No.: 60455357

Method: **EPA 904.0**
Description: 904.0 Radium 228
Client: Evergy Kansas Central, Inc.
Date: July 19, 2024

General Information:
5 samples were analyzed for EPA 904.0 by Pace Analytical Services Greensburg. 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:

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PROJECT NARRATIVE

Project: TEC 322 LF CCR App IV RADCHEM
Pace Project No.: 60455357

Method: **Total Radium Calculation**
Description: Total Radium 228+226
Client: Evergy Kansas Central, Inc.
Date: July 19, 2024

General Information:
5 samples were analyzed for Total Radium Calculation by Pace Analytical Services Greensburg. 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:

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

Pace Analytical Services, LLC
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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: TEC 322 LF CCR App IV RADCHEM
Pace Project No.: 60455357

Sample: MW-1-062024 **Lab ID: 60455357001** Collected: 06/20/24 08:25 Received: 06/20/24 14:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.512 ± 1.01 (1.76) C:NA T:85%**	pCi/L	07/05/24 14:57	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**1.22 ± 0.506 (0.822) C:79% T:83%**	pCi/L	07/08/24 11:35	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.73 ± 1.52 (2.58)**	pCi/L	07/09/24 09:49	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: TEC 322 LF CCR App IV RADCHEM
Pace Project No.: 60455357

Sample: MW-4-062024 **Lab ID: 60455357002** Collected: 06/20/24 11:20 Received: 06/20/24 14:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.184 ± 0.466 (0.864) C:NA T:85%**	pCi/L	07/05/24 15:11	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.865 ± 0.432 (0.748) C:78% T:86%**	pCi/L	07/08/24 11:35	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.05 ± 0.898 (1.61)**	pCi/L	07/09/24 09:49	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: TEC 322 LF CCR App IV RADCHEM
Pace Project No.: 60455357

Sample: MW-5-062024 **Lab ID: 60455357003** Collected: 06/20/24 10:20 Received: 06/20/24 14:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.406 ± 0.304 (0.157) C:NA T:94%**	pCi/L	07/05/24 15:11	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.762 ± 0.448 (0.814) C:77% T:75%**	pCi/L	07/08/24 11:35	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.17 ± 0.752 (0.971)**	pCi/L	07/09/24 09:49	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: TEC 322 LF CCR App IV RADCHEM
Pace Project No.: 60455357

Sample: MW-6-062024 **Lab ID: 60455357004** Collected: 06/20/24 09:15 Received: 06/20/24 14:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.573 ± 0.394 (0.421) C:NA T:93%**	pCi/L	07/05/24 15:11	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.875 ± 0.421 (0.714) C:75% T:85%**	pCi/L	07/08/24 11:35	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.45 ± 0.815 (1.14)**	pCi/L	07/09/24 09:49	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: TEC 322 LF CCR App IV RADCHEM
Pace Project No.: 60455357

Sample: TEC-322LF-DUP-062024 **Lab ID: 60455357005** Collected: 06/20/24 08:25 Received: 06/20/24 14:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.125 ± 0.548 (1.04) C:NA T:85%**	pCi/L	07/05/24 15:11	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.217 ± 0.386 (0.844) C:82% T:77%**	pCi/L	07/08/24 14:49	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.342 ± 0.934 (1.88)**	pCi/L	07/09/24 09:49	7440-14-4	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: TEC 322 LF CCR App IV RADCHEM
Pace Project No.: 60455357

QC Batch: 678396
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 60455357001, 60455357002, 60455357003, 60455357004, 60455357005

METHOD BLANK: 3303056 Matrix: Water
Associated Lab Samples: 60455357001, 60455357002, 60455357003, 60455357004, 60455357005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.220 ± 0.311 (0.528) C:NA T:96%	pCi/L	07/05/24 14:45	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: TEC 322 LF CCR App IV RADCHEM
Pace Project No.: 60455357

QC Batch: 678398
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 60455357001, 60455357002, 60455357003, 60455357004, 60455357005

METHOD BLANK: 3303057 Matrix: Water
Associated Lab Samples: 60455357001, 60455357002, 60455357003, 60455357004, 60455357005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.381 ± 0.362 (0.735) C:78% T:78%	pCi/L	07/08/24 15:09	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: TEC 322 LF CCR App IV RADCHEM
Pace Project No.: 60455357

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

Act - Activity

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

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

Pace Analytical Services, LLC
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: TEC 322 LF CCR App IV RADCHEM
Pace Project No.: 60455357

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60455357001	**MW-1-062024**	EPA 903.1	678396		
60455357002	**MW-4-062024**	EPA 903.1	678396		
60455357003	**MW-5-062024**	EPA 903.1	678396		
60455357004	**MW-6-062024**	EPA 903.1	678396		
60455357005	**TEC-322LF-DUP-062024**	EPA 903.1	678396		
60455357001	**MW-1-062024**	EPA 904.0	678398		
60455357002	**MW-4-062024**	EPA 904.0	678398		
60455357003	**MW-5-062024**	EPA 904.0	678398		
60455357004	**MW-6-062024**	EPA 904.0	678398		
60455357005	**TEC-322LF-DUP-062024**	EPA 904.0	678398		
60455357001	**MW-1-062024**	Total Radium Calculation	681002		
60455357002	**MW-4-062024**	Total Radium Calculation	681002		
60455357003	**MW-5-062024**	Total Radium Calculation	681002		
60455357004	**MW-6-062024**	Total Radium Calculation	681002		
60455357005	**TEC-322LF-DUP-062024**	Total Radium Calculation	681002		

WO# : 60455357

60455357

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-LENE-0009_Samp		
	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: T299 **Type of Ice:** Wet Blue (None)

Cooler Temperature (°C): **As-read** 27.4 **Corr. Factor** 0.0 **Corrected** 27.4

Date and initials of person examining contents: PV 6/21/24

Temperature should be above freezing to 6°C

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

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Qualtrax Document ID: 30468

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

CHAIN-OF-CUSTODY Analytical Request Document

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

LAB USE ONLY- Affix Workorder/Login Label Here

60455357

Scan QR Code for instructions

Company Name:	Evergy Kansas Central, Inc.	Contact/Report To:	Jake Humphrey
Street Address:	818 S Kansas Avenue, Topeka, KS 66612	Phone #:	(913)634-0605
		E-Mail:	jake.humphrey@evergy.com
		Cc E-Mail:	skaney@haleyaldrich.com
Customer Project #:			
Project Name:	TEC 322 LF CCR App IV RADCHEM	Invoice To:	Tecumseh Center
		Invoice E-Mail:	evergyap@onlinecapturecenter.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	WSTR-2000018660
		Quote #:	

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

County / State origin of sample(s): Kansas

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

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

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

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

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

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

Specify Container Size **: 1 1
Identify Container Preservative Type***: 2 2
Analysis Requested

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

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

Lab Use Only
Proj. Mgr: Alice Spiller
AcctNum / Client ID:
Table #:
Profile / Template: 9655
Prelog / Bottle Ord. ID: EZ 3118428

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	Radium 226	Radium 228, combined, QC Sheets	Sample Comment	Preservation non-conformance identified for sample.
MW-1-061~~9~~2024	GW	Grab	-	-	6/~~19~~20/2024	825	2	-	-	X	X		
MW-4-061~~9~~2024	GW	Grab	-	-	6/~~19~~20/2024	1120	2	-	-	X	X		
MW-5-061~~9~~2024	GW	Grab	-	-	6/~~19~~20/2024	1020	2	-	-	X	X		
MW-6-061~~9~~2024	GW	Grab	-	-	6/~~19~~20/2024	915	2	-	-	X	X		
TEC-322LF-DUP-061~~9~~2024	GW	Grab	-	-	6/~~19~~20/2024	825	2	-	-	X	X		

Additional Instructions from Pace®:

Collected By: (Printed Name) Matt VanderPutten
Signature: Matt VanderPutten

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:
1	T299	0.0	27.4	27.4	

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Tracking Number:
Matt VanderPutten / SCS	06/19/24 / ~~16:00~~ 1400		6/20/24 1400	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In- Person [ ] Courier
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	[ ] FedEx [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: 1 of 1

DC#_Title: ENV-FRM-LENE-0001_Sample Container Count
Revision: 3 | Effective Date: 12/22/2021 | Issued by: Lenexa
Client: Evergy KS Central Profile/EZ #: 3118428

Site: _____ Notes _____

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

Container Codes

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

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

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

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

Work Order Number: 60455357

Internal Transfer Chain of Custody

Pace

Workorder: 60455357 Workorder Name: TEC 322 LF CCR App IV RADCHEM

☐ Rush Multiplier_____X
☐ Samples Pre-Logged into eCOC

State Of Origin: KS
Cert. Needed: ☒ Yes ☐ No
Owner Received Date: 6/20/2024 Results Requested By: 7/19/2024

Report To	Subcontract To
Alice Spiller Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone (913)599-5665	Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4 Greensburg, PA 15601 Phone (724)850-5600

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: HNO3	Requested Analysis: QC Sheets	Radium 226	Radium 228, & combined	LAB USE ONLY
1	MW-1-062024	PS	6/20/2024 08:25	60455357001	Water	2	X	X	X	001
2	MW-4-062024	PS	6/20/2024 11:20	60455357002	Water	2	X	X	X	002
3	MW-5-062024	PS	6/20/2024 10:20	60455357003	Water	2	X	X	X	003
4	MW-6-062024	PS	6/20/2024 09:15	60455357004	Water	2	X	X	X	004
5	TEC-322LF-DUP-062024	PS	6/20/2024 08:25	60455357005	Water	2	X	X	X	~~005~~ 6-25-24

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature]	6/24/24 1600	[signature]	6/25/24 955
2				
3				

Comments: KS sample location: RECEIVING

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

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

WO#: 30694879

30694879

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

Effective Date: 01/04/2024

WO# : 30694879

PM: MAR Due Date: 07/17/24

CLIENT: PACE_60_LEKS

Client Name: Pace - Lenexa, KS

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

Tracking Number: 7146 2380 8727

Initial / Date

Examined By: BR 6.25.24

Labeled By: BR 6.25.24

Temped By: —

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

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

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

Temp should be above freezing to 6°C

pH paper Lot# 102931 D.P.D. Residual Chlorine Lot # —

Comments:	Yes	No	NA	
Chain of Custody Present	✓			1.
Chain of Custody Filled Out:	✓			2.
-Were client corrections present on COC		✓		
Chain of Custody Relinquished	✓			3.
Sampler Name & Signature on COC:		✓		4.
Sample Labels match COC:	✓			5.
-Includes date/time/ID	✓			
Matrix: WT				
Samples Arrived within Hold Time:	✓			6.
Short Hold Time Analysis (<72hr remaining):		✓		7.
Rush Turn Around Time Requested:		✓		8.
Sufficient Volume:	✓			9.
Correct Containers Used:	✓			10.
-Pace Containers Used	✓			
Containers Intact:	✓			11.
Orthophosphate field filtered:			✓	12.
Hex Cr Aqueous samples field filtered:			✓	13.
Organic Samples checked for dichlorination			✓	14:
Filtered volume received for dissolved tests:			✓	15:
All containers checked for preservation:	✓			16.
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix				PH<2
All containers meet method preservation requirements:	✓			Initial when completed BR Date/Time of Preservation
				Lot# of added Preservative
8260C/D: Headspace in VOA Vials (> 6mm)			✓	17.
624.1: Headspace in VOA Vials (0mm)			✓	18.
Radon: Headspace in RAD Vials (0mm)			✓	19.
Trip Blank Present:			✓	Trip blank custody seal present? YES or NO
Rad Samples Screened <.05 mrem/hr.	✓			Initial when completed EJ Date: 6/25/24 Survey Meter SN: 250143B0

Comments: Sample 005 not received on 6.25.24

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

Qualtrax ID: 55680

Quality Control Sample Performance Assessment

Pace Analytical™ www.pacelabs.com

Test:	Ra-226
Analyst:	LL1
Date:	6/26/2024
Batch ID:	79983
Matrix:	DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	3303056
MB concentration:	0.220
M/B Counting Uncertainty:	0.310
MB MDC:	0.528
MB Numerical Performance Indicator:	1.39
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	y
	LCS79983	LCSD79983
Count Date:	7/5/2024	7/5/2024
Spike I.D.:	23-063	23-063
Spike Concentration (pCi/mL):	32.298	32.298
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.653	0.652
Target Conc. (pCi/L, g, F):	4.943	4.957
Uncertainty (Calculated):	0.232	0.233
Result (pCi/L, g, F):	5.000	5.271
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	1.024	1.190
Numerical Performance Indicator:	0.11	0.51
Percent Recovery:	101.14%	106.32%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	133%	133%
Lower % Recovery Limits:	73%	73%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.		
Sample MS I.D.		
Sample MSD I.D.		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc.(pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	LCS79983	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	LCSD79983	
Sample Result (pCi/L, g, F):	5.000	
Sample Result Counting Uncertainty (pCi/L, g, F):	1.024	
Sample Duplicate Result (pCi/L, g, F):	5.271	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	1.190	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	-0.338	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	4.99%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	32%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.		
Sample MS I.D.		
Sample MSD I.D.		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:		
MS/ MSD Duplicate Status vs Numerical Indicator:		
MS/ MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the RL.

Comments:

CLM 7/5/24 DMC 7/8/24

Quality Control Sample Performance Assessment

Pace Analytical™ www.pacelabs.com

Test:	Ra-228
Analyst:	ZPC
Date:	7/2/2024
Worklist:	79984
Matrix:	Wt

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	3303057
MB concentration:	0.381
M/B 2 Sigma CSU:	0.362
MB MDC:	0.735
MB Numerical Performance Indicator:	2.06
MB Status vs Numerical Indicator:	Warning
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCS79984	LCSD79984
Count Date:	7/8/2024	7/8/2024
Spike I.D.:	23-043	23-043
Decay Corrected Spike Concentration (pCi/mL):	36.095	36.095
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.817	0.817
Target Conc. (pCi/L, g, F):	4.418	4.416
Uncertainty (Calculated):	0.216	0.216
Result (pCi/L, g, F):	3.692	3.748
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	0.872	0.878
Numerical Performance Indicator:	-1.58	-1.45
Percent Recovery:	83.58%	84.87%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.		
Sample MS I.D.		
Sample MSD I.D.		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc.(pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	LCS79984	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	LCSD79984	
Sample Result (pCi/L, g, F):	3.692	
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.872	
Sample Duplicate Result (pCi/L, g, F):	3.748	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.878	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	-0.089	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	1.53%	
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.		
Sample MS I.D.		
Sample MSD I.D.		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:		
MS/ MSD Duplicate Status vs Numerical Indicator:		
MS/ MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

VAL
7/9/24

VAM 7/9/24

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

July 05, 2024

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

RE: Project: TEC 322 LANDFILL CCR APP IV
Pace Project No.: 60455358

Dear Jake Humphrey:

Enclosed are the analytical results for sample(s) received by the laboratory on June 20, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Kansas City

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
Andrew Watson, Haley & Aldrich

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

CERTIFICATIONS

Project: TEC 322 LANDFILL CCR APP IV
Pace Project No.: 60455358

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

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SAMPLE SUMMARY

Project: TEC 322 LANDFILL CCR APP IV
Pace Project No.: 60455358

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60455358001	**MW-1-062024**	Water	06/20/24 08:25	06/20/24 14:00
60455358002	**MW-4-062024**	Water	06/20/24 11:20	06/20/24 14:00
60455358003	**MW-5-062024**	Water	06/20/24 10:20	06/20/24 14:00
60455358004	**MW-6-062024**	Water	06/20/24 09:15	06/20/24 14:00
60455358005	**TEC-322LF-DUP-062024**	Water	06/20/24 08:25	06/20/24 14:00

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SAMPLE ANALYTE COUNT

Project: TEC 322 LANDFILL CCR APP IV
Pace Project No.: 60455358

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60455358001	**MW-1-062024**	EPA 200.7	ARMN	4	PASI-K
		EPA 6010	ARMN	1	PASI-K
		EPA 200.8	JXD	7	PASI-K
		EPA 245.1	MLD	1	PASI-K
		EPA 300.0	PL	1	PASI-K
60455358002	**MW-4-062024**	EPA 200.7	ARMN	4	PASI-K
		EPA 6010	ARMN	1	PASI-K
		EPA 200.8	JXD	7	PASI-K
		EPA 245.1	MLD	1	PASI-K
		EPA 300.0	PL	1	PASI-K
60455358003	**MW-5-062024**	EPA 200.7	ARMN	4	PASI-K
		EPA 6010	ARMN	1	PASI-K
		EPA 200.8	JXD	7	PASI-K
		EPA 245.1	MLD	1	PASI-K
		EPA 300.0	PL	1	PASI-K
60455358004	**MW-6-062024**	EPA 200.7	ARMN	4	PASI-K
		EPA 6010	ARMN	1	PASI-K
		EPA 200.8	JXD	7	PASI-K
		EPA 245.1	MLD	1	PASI-K
		EPA 300.0	PL	1	PASI-K
60455358005	**TEC-322LF-DUP-062024**	EPA 200.7	ARMN	4	PASI-K
		EPA 6010	ARMN	1	PASI-K
		EPA 200.8	JXD	7	PASI-K
		EPA 245.1	MLD	1	PASI-K
		EPA 300.0	PL	1	PASI-K

PASI-K = Pace Analytical Services - Kansas City

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PROJECT NARRATIVE

Project: TEC 322 LANDFILL CCR APP IV
Pace Project No.: 60455358

Method: **EPA 200.7**
Description: 200.7 Metals, Total
Client: Evergy Kansas Central, Inc.
Date: July 05, 2024

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

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

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

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

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

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

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

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

Additional Comments:

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PROJECT NARRATIVE

Project: TEC 322 LANDFILL CCR APP IV
Pace Project No.: 60455358

Method: **EPA 6010**
Description: 6010 MET ICP
Client: Evergy Kansas Central, Inc.
Date: July 05, 2024

General Information:
5 samples were analyzed for EPA 6010 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 3010 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:

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PROJECT NARRATIVE

Project: TEC 322 LANDFILL CCR APP IV
Pace Project No.: 60455358

Method: **EPA 200.8**
Description: 200.8 MET ICPMS
Client: Evergy Kansas Central, Inc.
Date: July 05, 2024

General Information:
5 samples were analyzed for EPA 200.8 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 200.8 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.

Internal Standards:
All internal standards were within QC limits 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:

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PROJECT NARRATIVE

Project: TEC 322 LANDFILL CCR APP IV
Pace Project No.: 60455358

Method: **EPA 245.1**
Description: 245.1 Mercury
Client: Evergy Kansas Central, Inc.
Date: July 05, 2024

General Information:
5 samples were analyzed for EPA 245.1 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 245.1 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:

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PROJECT NARRATIVE

Project: TEC 322 LANDFILL CCR APP IV
Pace Project No.: 60455358

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: Evergy Kansas Central, Inc.
Date: July 05, 2024

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

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

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

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

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

QC Batch: 899727

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60455348002,60455572001

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

- MS (Lab ID: 3561257)
  - Fluoride
- MS (Lab ID: 3561259)
  - Fluoride
- MSD (Lab ID: 3561258)
  - Fluoride

QC Batch: 899728

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60455319001,60455574002

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

- MS (Lab ID: 3561264)
  - Fluoride

Additional Comments:

Analyte Comments:

QC Batch: 899727

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3561255)
  - Fluoride
- LCS (Lab ID: 3561256)
  - Fluoride
- MS (Lab ID: 3561257)
  - Fluoride

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PROJECT NARRATIVE

Project: TEC 322 LANDFILL CCR APP IV
Pace Project No.: 60455358

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: Evergy Kansas Central, Inc.
Date: July 05, 2024

Analyte Comments:

QC Batch: 899727

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- MS (Lab ID: 3561259)
  - Fluoride
- MSD (Lab ID: 3561258)
  - Fluoride
- MW-1-062024 (Lab ID: 60455358001)
  - Fluoride
- MW-4-062024 (Lab ID: 60455358002)
  - Fluoride
- MW-5-062024 (Lab ID: 60455358003)
  - Fluoride

QC Batch: 899728

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 3561260)
  - Fluoride
- LCS (Lab ID: 3561261)
  - Fluoride
- MS (Lab ID: 3561262)
  - Fluoride
- MS (Lab ID: 3561264)
  - Fluoride
- MSD (Lab ID: 3561263)
  - Fluoride
- MW-6-062024 (Lab ID: 60455358004)
  - Fluoride
- TEC-322LF-DUP-062024 (Lab ID: 60455358005)
  - Fluoride

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

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ANALYTICAL RESULTS

Project: TEC 322 LANDFILL CCR APP IV
Pace Project No.: 60455358

Sample: MW-1-062024 **Lab ID: 60455358001** Collected: 06/20/24 08:25 Received: 06/20/24 14:00 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							
Barium, Total Recoverable	**0.050**	mg/L	0.0050	1	06/24/24 08:50	06/27/24 09:28	7440-39-3	
Beryllium, Total Recoverable	**<0.0010**	mg/L	0.0010	1	06/24/24 08:50	06/27/24 09:28	7440-41-7	
Chromium, Total Recoverable	**<0.0050**	mg/L	0.0050	1	06/24/24 08:50	06/27/24 09:28	7440-47-3	
Lead, Total Recoverable	**<0.010**	mg/L	0.010	1	06/24/24 08:50	06/27/24 09:28	7439-92-1	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Pace Analytical Services - Kansas City							
Lithium, Total Recoverable	**0.012**	mg/L	0.010	1	06/24/24 08:50	07/03/24 12:55	7439-93-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony, Total Recoverable	**<0.0010**	mg/L	0.0010	1	06/25/24 14:03	06/28/24 14:00	7440-36-0	
Arsenic, Total Recoverable	**<0.0010**	mg/L	0.0010	1	06/25/24 14:03	06/28/24 14:00	7440-38-2	
Cadmium, Total Recoverable	**<0.00050**	mg/L	0.00050	1	06/25/24 14:03	06/28/24 14:00	7440-43-9	
Cobalt, Total Recoverable	**<0.0010**	mg/L	0.0010	1	06/25/24 14:03	06/28/24 14:00	7440-48-4	
Molybdenum, Total Recoverable	**<0.0010**	mg/L	0.0010	1	06/25/24 14:03	06/28/24 14:00	7439-98-7	
Selenium, Total Recoverable	**<0.0010**	mg/L	0.0010	1	06/25/24 14:03	06/28/24 14:00	7782-49-2	
Thallium, Total Recoverable	**<0.0010**	mg/L	0.0010	1	06/25/24 14:03	06/28/24 14:00	7440-28-0	
245.1 Mercury	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1 Pace Analytical Services - Kansas City							
Mercury	**<0.20**	ug/L	0.20	1	06/27/24 13:39	06/28/24 14:29	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Fluoride	**<0.20**	mg/L	0.20	1		06/27/24 21:56	16984-48-8	N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: TEC 322 LANDFILL CCR APP IV
Pace Project No.: 60455358

Sample: MW-4-062024 **Lab ID: 60455358002** Collected: 06/20/24 11:20 Received: 06/20/24 14:00 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							
Barium, Total Recoverable	**0.098**	mg/L	0.0050	1	06/24/24 08:50	06/27/24 09:35	7440-39-3	
Beryllium, Total Recoverable	**<0.0010**	mg/L	0.0010	1	06/24/24 08:50	06/27/24 09:35	7440-41-7	
Chromium, Total Recoverable	**<0.0050**	mg/L	0.0050	1	06/24/24 08:50	06/27/24 09:35	7440-47-3	
Lead, Total Recoverable	**<0.010**	mg/L	0.010	1	06/24/24 08:50	06/27/24 09:35	7439-92-1	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Pace Analytical Services - Kansas City							
Lithium, Total Recoverable	**<0.010**	mg/L	0.010	1	06/24/24 08:50	07/03/24 12:57	7439-93-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony, Total Recoverable	**<0.0010**	mg/L	0.0010	1	06/25/24 14:03	06/28/24 14:10	7440-36-0	
Arsenic, Total Recoverable	**0.0012**	mg/L	0.0010	1	06/25/24 14:03	06/28/24 14:10	7440-38-2	
Cadmium, Total Recoverable	**<0.00050**	mg/L	0.00050	1	06/25/24 14:03	06/28/24 14:10	7440-43-9	
Cobalt, Total Recoverable	**<0.0010**	mg/L	0.0010	1	06/25/24 14:03	06/28/24 14:10	7440-48-4	
Molybdenum, Total Recoverable	**<0.0010**	mg/L	0.0010	1	06/25/24 14:03	06/28/24 14:10	7439-98-7	
Selenium, Total Recoverable	**<0.0010**	mg/L	0.0010	1	06/25/24 14:03	06/28/24 14:10	7782-49-2	
Thallium, Total Recoverable	**<0.0010**	mg/L	0.0010	1	06/25/24 14:03	06/28/24 14:10	7440-28-0	
245.1 Mercury	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1 Pace Analytical Services - Kansas City							
Mercury	**<0.20**	ug/L	0.20	1	06/27/24 13:39	06/28/24 14:36	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Fluoride	**<0.20**	mg/L	0.20	1		06/27/24 22:23	16984-48-8	N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: TEC 322 LANDFILL CCR APP IV
Pace Project No.: 60455358

Sample: MW-5-062024 **Lab ID: 60455358003** Collected: 06/20/24 10:20 Received: 06/20/24 14:00 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							
Barium, Total Recoverable	**0.027**	mg/L	0.0050	1	06/24/24 08:50	06/27/24 09:37	7440-39-3	
Beryllium, Total Recoverable	**<0.0010**	mg/L	0.0010	1	06/24/24 08:50	06/27/24 09:37	7440-41-7	
Chromium, Total Recoverable	**<0.0050**	mg/L	0.0050	1	06/24/24 08:50	06/27/24 09:37	7440-47-3	
Lead, Total Recoverable	**<0.010**	mg/L	0.010	1	06/24/24 08:50	06/27/24 09:37	7439-92-1	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Pace Analytical Services - Kansas City							
Lithium, Total Recoverable	**0.022**	mg/L	0.010	1	06/24/24 08:50	07/03/24 12:59	7439-93-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony, Total Recoverable	**<0.0010**	mg/L	0.0010	1	06/25/24 14:03	06/28/24 14:13	7440-36-0	
Arsenic, Total Recoverable	**<0.0010**	mg/L	0.0010	1	06/25/24 14:03	06/28/24 14:13	7440-38-2	
Cadmium, Total Recoverable	**<0.00050**	mg/L	0.00050	1	06/25/24 14:03	06/28/24 14:13	7440-43-9	
Cobalt, Total Recoverable	**<0.0010**	mg/L	0.0010	1	06/25/24 14:03	06/28/24 14:13	7440-48-4	
Molybdenum, Total Recoverable	**<0.0010**	mg/L	0.0010	1	06/25/24 14:03	06/28/24 14:13	7439-98-7	
Selenium, Total Recoverable	**<0.0010**	mg/L	0.0010	1	06/25/24 14:03	06/28/24 14:13	7782-49-2	
Thallium, Total Recoverable	**<0.0010**	mg/L	0.0010	1	06/25/24 14:03	06/28/24 14:13	7440-28-0	
245.1 Mercury	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1 Pace Analytical Services - Kansas City							
Mercury	**<0.20**	ug/L	0.20	1	06/27/24 13:39	06/28/24 14:38	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Fluoride	**<0.20**	mg/L	0.20	1		06/27/24 23:33	16984-48-8	N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: TEC 322 LANDFILL CCR APP IV
Pace Project No.: 60455358

Sample: MW-6-062024 **Lab ID: 60455358004** Collected: 06/20/24 09:15 Received: 06/20/24 14:00 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							
Barium, Total Recoverable	**0.021**	mg/L	0.0050	1	06/24/24 08:50	06/27/24 09:38	7440-39-3	
Beryllium, Total Recoverable	**<0.0010**	mg/L	0.0010	1	06/24/24 08:50	06/27/24 09:38	7440-41-7	
Chromium, Total Recoverable	**<0.0050**	mg/L	0.0050	1	06/24/24 08:50	06/27/24 09:38	7440-47-3	
Lead, Total Recoverable	**<0.010**	mg/L	0.010	1	06/24/24 08:50	06/27/24 09:38	7439-92-1	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Pace Analytical Services - Kansas City							
Lithium, Total Recoverable	**0.020**	mg/L	0.010	1	06/24/24 09:39	07/03/24 10:04	7439-93-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony, Total Recoverable	**<0.0010**	mg/L	0.0010	1	06/25/24 14:03	06/28/24 14:19	7440-36-0	
Arsenic, Total Recoverable	**<0.0010**	mg/L	0.0010	1	06/25/24 14:03	06/28/24 14:19	7440-38-2	
Cadmium, Total Recoverable	**<0.00050**	mg/L	0.00050	1	06/25/24 14:03	06/28/24 14:19	7440-43-9	
Cobalt, Total Recoverable	**0.0023**	mg/L	0.0010	1	06/25/24 14:03	06/28/24 14:19	7440-48-4	
Molybdenum, Total Recoverable	**<0.0010**	mg/L	0.0010	1	06/25/24 14:03	06/28/24 14:19	7439-98-7	
Selenium, Total Recoverable	**<0.0010**	mg/L	0.0010	1	06/25/24 14:03	06/28/24 14:19	7782-49-2	
Thallium, Total Recoverable	**<0.0010**	mg/L	0.0010	1	06/25/24 14:03	06/28/24 14:19	7440-28-0	
245.1 Mercury	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1 Pace Analytical Services - Kansas City							
Mercury	**<0.20**	ug/L	0.20	1	06/27/24 13:39	06/28/24 14:41	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Fluoride	**0.88**	mg/L	0.20	1		06/27/24 16:43	16984-48-8	N2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: TEC 322 LANDFILL CCR APP IV
Pace Project No.: 60455358

Sample: TEC-322LF-DUP-062024 **Lab ID: 60455358005** Collected: 06/20/24 08:25 Received: 06/20/24 14:00 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							
Barium, Total Recoverable	**0.045**	mg/L	0.0050	1	06/24/24 08:50	06/27/24 09:40	7440-39-3	
Beryllium, Total Recoverable	**<0.0010**	mg/L	0.0010	1	06/24/24 08:50	06/27/24 09:40	7440-41-7	
Chromium, Total Recoverable	**<0.0050**	mg/L	0.0050	1	06/24/24 08:50	06/27/24 09:40	7440-47-3	
Lead, Total Recoverable	**<0.010**	mg/L	0.010	1	06/24/24 08:50	06/27/24 09:40	7439-92-1	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Pace Analytical Services - Kansas City							
Lithium, Total Recoverable	**0.013**	mg/L	0.010	1	06/24/24 09:39	07/03/24 10:09	7439-93-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Antimony, Total Recoverable	**<0.0010**	mg/L	0.0010	1	06/25/24 14:03	06/28/24 14:22	7440-36-0	
Arsenic, Total Recoverable	**<0.0010**	mg/L	0.0010	1	06/25/24 14:03	06/28/24 14:22	7440-38-2	
Cadmium, Total Recoverable	**<0.00050**	mg/L	0.00050	1	06/25/24 14:03	06/28/24 14:22	7440-43-9	
Cobalt, Total Recoverable	**<0.0010**	mg/L	0.0010	1	06/25/24 14:03	06/28/24 14:22	7440-48-4	
Molybdenum, Total Recoverable	**<0.0010**	mg/L	0.0010	1	06/25/24 14:03	06/28/24 14:22	7439-98-7	
Selenium, Total Recoverable	**<0.0010**	mg/L	0.0010	1	06/25/24 14:03	06/28/24 14:22	7782-49-2	
Thallium, Total Recoverable	**<0.0010**	mg/L	0.0010	1	06/25/24 14:03	06/28/24 14:22	7440-28-0	
245.1 Mercury	Analytical Method: EPA 245.1 Preparation Method: EPA 245.1 Pace Analytical Services - Kansas City							
Mercury	**<0.20**	ug/L	0.20	1	06/27/24 13:39	06/28/24 14:43	7439-97-6	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City							
Fluoride	**0.54**	mg/L	0.20	1		06/27/24 17:19	16984-48-8	N2

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: TEC 322 LANDFILL CCR APP IV
Pace Project No.: 60455358

QC Batch: 899929
QC Batch Method: EPA 245.1
Analysis Method: EPA 245.1
Analysis Description: 245.1 Mercury
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60455358001, 60455358002, 60455358003, 60455358004, 60455358005

METHOD BLANK: 3562080 Matrix: Water
Associated Lab Samples: 60455358001, 60455358002, 60455358003, 60455358004, 60455358005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.20	0.20	06/28/24 13:41	

LABORATORY CONTROL SAMPLE: 3562081

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.3	86	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3562082 3562083

Parameter	Units	60455226001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.20	5	5	4.4	4.3	88	86	70-130	2	20	

MATRIX SPIKE SAMPLE: 3562084

Parameter	Units	60455244003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	<0.20	5	4.4	87	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: TEC 322 LANDFILL CCR APP IV
Pace Project No.: 60455358

QC Batch: 899289
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: 60455358001, 60455358002, 60455358003, 60455358004, 60455358005

METHOD BLANK: 3559743 Matrix: Water
Associated Lab Samples: 60455358001, 60455358002, 60455358003, 60455358004, 60455358005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Barium	mg/L	<0.0050	0.0050	06/27/24 09:15	
Beryllium	mg/L	<0.0010	0.0010	06/27/24 09:15	
Chromium	mg/L	<0.0050	0.0050	06/27/24 09:15	
Lead	mg/L	<0.010	0.010	06/27/24 09:15	

LABORATORY CONTROL SAMPLE: 3559744

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	mg/L	1	0.93	93	85-115	
Beryllium	mg/L	1	0.94	94	85-115	
Chromium	mg/L	1	0.94	94	85-115	
Lead	mg/L	1	0.99	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3559745 3559746

Parameter	Units	60455376001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	mg/L	0.057	1	1	1.0	1.0	98	98	70-130	0	20	
Beryllium	mg/L	ND	1	1	0.99	1.0	99	101	70-130	2	20	
Chromium	mg/L	0.014	1	1	0.99	1.0	98	100	70-130	2	20	
Lead	mg/L	ND	1	1	1.0	1.0	100	102	70-130	2	20	

MATRIX SPIKE SAMPLE: 3559747

Parameter	Units	60455414001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	mg/L	31.5 ug/L	1	1.0	97	70-130	
Beryllium	mg/L	ND	1	0.98	98	70-130	
Chromium	mg/L	ND	1	0.97	97	70-130	
Lead	mg/L	ND	1	0.98	98	70-130	

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REPORT OF LABORATORY ANALYSIS

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(913)599-5665

QUALITY CONTROL DATA

Project: TEC 322 LANDFILL CCR APP IV
Pace Project No.: 60455358

QC Batch: 899465
QC Batch Method: EPA 200.8
Analysis Method: EPA 200.8
Analysis Description: 200.8 MET
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60455358001, 60455358002, 60455358003, 60455358004, 60455358005

METHOD BLANK: 3560374 Matrix: Water
Associated Lab Samples: 60455358001, 60455358002, 60455358003, 60455358004, 60455358005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	mg/L	<0.0010	0.0010	06/28/24 13:54	
Arsenic	mg/L	<0.0010	0.0010	06/28/24 13:54	
Cadmium	mg/L	<0.00050	0.00050	06/28/24 13:54	
Cobalt	mg/L	<0.0010	0.0010	06/28/24 13:54	
Molybdenum	mg/L	<0.0010	0.0010	06/28/24 13:54	
Selenium	mg/L	<0.0010	0.0010	06/28/24 13:54	
Thallium	mg/L	<0.0010	0.0010	06/28/24 13:54	

LABORATORY CONTROL SAMPLE: 3560375

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.04	0.038	96	85-115	
Arsenic	mg/L	0.04	0.038	95	85-115	
Cadmium	mg/L	0.04	0.039	97	85-115	
Cobalt	mg/L	0.04	0.039	96	85-115	
Molybdenum	mg/L	0.04	0.038	96	85-115	
Selenium	mg/L	0.04	0.039	98	85-115	
Thallium	mg/L	0.04	0.040	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3560376 3560377

Parameter	Units	60455358001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	<0.0010	0.04	0.04	0.038	0.037	95	93	70-130	2	20	
Arsenic	mg/L	<0.0010	0.04	0.04	0.039	0.038	97	94	70-130	3	20	
Cadmium	mg/L	<0.00050	0.04	0.04	0.037	0.036	93	90	70-130	3	20	
Cobalt	mg/L	<0.0010	0.04	0.04	0.037	0.036	92	89	70-130	3	20	
Molybdenum	mg/L	<0.0010	0.04	0.04	0.041	0.040	101	99	70-130	2	20	
Selenium	mg/L	<0.0010	0.04	0.04	0.039	0.036	96	91	70-130	6	20	
Thallium	mg/L	<0.0010	0.04	0.04	0.039	0.038	97	95	70-130	2	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: TEC 322 LANDFILL CCR APP IV
Pace Project No.: 60455358

QC Batch: 899281
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60455358001, 60455358002, 60455358003

METHOD BLANK: 3559716 Matrix: Water
Associated Lab Samples: 60455358001, 60455358002, 60455358003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lithium	mg/L	<0.010	0.010	07/03/24 12:11	

LABORATORY CONTROL SAMPLE: 3559717

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lithium	mg/L	1	1.0	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3559718 3559719

Parameter	Units	60455244005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lithium	mg/L	<0.010	1	1	1.1	1.1	106	107	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: TEC 322 LANDFILL CCR APP IV
Pace Project No.: 60455358

QC Batch: 899282
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60455358004, 60455358005

METHOD BLANK: 3559720 Matrix: Water
Associated Lab Samples: 60455358004, 60455358005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lithium	mg/L	<0.010	0.010	07/03/24 10:01	

LABORATORY CONTROL SAMPLE: 3559721

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lithium	mg/L	1	1.1	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3559722 3559723

Parameter	Units	60455358004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lithium	mg/L	0.020	1	1	1.0	1.0	101	101	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: TEC 322 LANDFILL CCR APP IV
Pace Project No.: 60455358

QC Batch: 899727
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: 60455358001, 60455358002, 60455358003

METHOD BLANK: 3561255 Matrix: Water
Associated Lab Samples: 60455358001, 60455358002, 60455358003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fluoride	mg/L	<0.20	0.20	06/27/24 08:53	N2

LABORATORY CONTROL SAMPLE: 3561256

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.5	98	90-110	N2

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3561257 3561258

Parameter	Units	60455572001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	ND	2500	2500	1810	1870	72	75	80-120	3	15	M1,N2

MATRIX SPIKE SAMPLE: 3561259

Parameter	Units	60455348002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	ND	50	36.8	74	80-120	M1,N2

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REPORT OF LABORATORY ANALYSIS

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(913)599-5665

QUALITY CONTROL DATA

Project: TEC 322 LANDFILL CCR APP IV
Pace Project No.: 60455358

QC Batch: 899728
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: 60455358004, 60455358005

METHOD BLANK: 3561260 Matrix: Water
Associated Lab Samples: 60455358004, 60455358005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fluoride	mg/L	<0.20	0.20	06/27/24 09:07	N2

LABORATORY CONTROL SAMPLE: 3561261

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.5	99	90-110	N2

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3561262 3561263

Parameter	Units	60455574002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/L	ND	250	250	256	254	102	102	80-120	1	15	N2

MATRIX SPIKE SAMPLE: 3561264

Parameter	Units	60455319001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	0.71	2.5	2.7	78	80-120	M1,N2

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REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: TEC 322 LANDFILL CCR APP IV
Pace Project No.: 60455358

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: TEC 322 LANDFILL CCR APP IV
Pace Project No.: 60455358

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60455358001	**MW-1-062024**	EPA 200.7	899289	EPA 200.7	899337
60455358002	**MW-4-062024**	EPA 200.7	899289	EPA 200.7	899337
60455358003	**MW-5-062024**	EPA 200.7	899289	EPA 200.7	899337
60455358004	**MW-6-062024**	EPA 200.7	899289	EPA 200.7	899337
60455358005	**TEC-322LF-DUP-062024**	EPA 200.7	899289	EPA 200.7	899337
60455358001	**MW-1-062024**	EPA 3010	899281	EPA 6010	899338
60455358002	**MW-4-062024**	EPA 3010	899281	EPA 6010	899338
60455358003	**MW-5-062024**	EPA 3010	899281	EPA 6010	899338
60455358004	**MW-6-062024**	EPA 3010	899282	EPA 6010	899363
60455358005	**TEC-322LF-DUP-062024**	EPA 3010	899282	EPA 6010	899363
60455358001	**MW-1-062024**	EPA 200.8	899465	EPA 200.8	899619
60455358002	**MW-4-062024**	EPA 200.8	899465	EPA 200.8	899619
60455358003	**MW-5-062024**	EPA 200.8	899465	EPA 200.8	899619
60455358004	**MW-6-062024**	EPA 200.8	899465	EPA 200.8	899619
60455358005	**TEC-322LF-DUP-062024**	EPA 200.8	899465	EPA 200.8	899619
60455358001	**MW-1-062024**	EPA 245.1	899929	EPA 245.1	900010
60455358002	**MW-4-062024**	EPA 245.1	899929	EPA 245.1	900010
60455358003	**MW-5-062024**	EPA 245.1	899929	EPA 245.1	900010
60455358004	**MW-6-062024**	EPA 245.1	899929	EPA 245.1	900010
60455358005	**TEC-322LF-DUP-062024**	EPA 245.1	899929	EPA 245.1	900010
60455358001	**MW-1-062024**	EPA 300.0	899727		
60455358002	**MW-4-062024**	EPA 300.0	899727		
60455358003	**MW-5-062024**	EPA 300.0	899727		
60455358004	**MW-6-062024**	EPA 300.0	899728		
60455358005	**TEC-322LF-DUP-062024**	EPA 300.0	899728		

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-LENE-0009_Sample (	WO# : 60455358
	Revision: 2	Effective Date: 01/12/2022

Client Name: Evergy

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

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

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

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

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

Cooler Temperature (°C): **As-read** 2.4 **Corr. Factor** 0 **Corrected** 2.4

Date and initials of person examining contents: CE/20

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:	☐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#:**	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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

CHAIN-OF-CUSTODY Analytical Request Document

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

LAB USE ONLY- Affix Workorder/Login Label Here

WO# : 60455358

PM: AS Due Date: 07/05/24

CLIENT: WESTAR ENRGY

Company Name:	Evergy Kansas Central, Inc.	Contact/Report To:	Jake Humphrey
Street Address:	400 E Van Buren St, Phoenix, AZ 85004	Phone #:	(913)634-0605
		E-Mail:	jake.humphrey@evergy.com
		Cc E-Mail:	skaney@haleyaldrich.com
Customer Project #:			
Project Name:	TEC 322 Landfill CCR App IV	Invoice To:	Tecumseh Center
		Invoice E-Mail:	evergyap@onlinecapturecenter.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	WSTR-2000018660
		Quote #:	

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

County / State origin of sample(s): Kansas

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

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

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

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

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

Analysis:

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

Specify Container Size **: 3 3

Identify Container Preservative Type***: 2 1

Analysis Requested

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	200.7/200.8/245.1/6040 *see lists	300.0 Fluoride	Sample Comment
MW-1-06~~1~~2024	GW	Grab	-	-	6/~~19~~20/2024	825	2	-	-	X	X	
MW-4-06~~1~~2024	GW	Grab	-	-	6/~~16~~20/2024	1126	2	-	-	X	X	
MW-5-06~~1~~2024	GW	Grab	-	-	6/~~19~~20/2024	1020	2	-	-	X	X	
MW-6-06~~1~~2024	GW	Grab	-	-	6/~~16~~20/2024	915	2	-	-	X	X	
TEC-322LF-DUP-06~~1~~2024	GW	Grab	-	-	6/~~19~~20/2024	825	2	-	-	X	X	

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

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

Lab Use Only

Proj. Mgr: Alice Spiller

AcctNum / Client ID:

Table #:

Profile / Template: 9655, line 3

Prelog / Bottle Ord. ID: 1177970

Preservation non-conformance identified for sample.

Additional Instructions from Pace®:
200.8 Sb,As,Cd,Co,Mo,Se,Tl
200.7 Ba,Be,Cr, Pb
6010 Li
245.1 Hg

Collected By: (Printed Name) Matt VanderPutten

Signature: Matt VanderPutten

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:
1	TL49	0.0	2.4	2.4	

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Tracking Number:
Matt VanderPutten / SCS	06/~~19~~20/24 / ~~16:00~~ 1400		6/20/24 1400	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In- Person [ ] Courier
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	[ ] FedEX [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: 1 of 1

Client: Evergy Profile/EZ # 9655.3

Site: TEC 322 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																					1		1									
2																					1		1									
3																					1		1									
4																					1		1									
5																					1		1									
6																																
7																																
8																																
9																																
10																																
11																																
12																																

Container Codes

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

Work Order Number:

ATTACHMENT 2-3
September 2024 Semiannual Sampling Event
Laboratory Analytical Report

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

September 30, 2024

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

RE: Project: TEC 322 LF CCR
Pace Project No.: 60460524

Dear Jake Humphrey:

Enclosed are the analytical results for sample(s) received by the laboratory on September 13, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Kansas City
- Pace Analytical Services - Salina

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: Heath Horyna, Evergy, Inc.
Samantha Kaney, Haley & Aldrich
Melanie Satanek, Haley & Aldrich, Inc.
Adriana Sosa, Haley & Aldrich, Inc.
Nick Williams, Haley Aldrich

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

CERTIFICATIONS

Project: TEC 322 LF CCR
Pace Project No.: 60460524

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

Pace Analytical Services Salina
528 N 9th Street, Salina, KS 67401
Kansas/NELAP Certification: # E-10146
Oklahoma Certification: 2023-074
Texas Certification: T104704246-23-15

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

SAMPLE SUMMARY

Project: TEC 322 LF CCR
Pace Project No.: 60460524

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60460524001	**MW-1-091124**	Water	09/11/24 11:10	09/13/24 16:00
60460524002	**MW-4-091124**	Water	09/11/24 10:30	09/13/24 16:00
60460524003	**MW-5-091124**	Water	09/11/24 13:45	09/13/24 16:00
60460524004	**MW-6-091124**	Water	09/11/24 11:40	09/13/24 16:00
60460524005	**TEC-322LF-DUP-091124**	Water	09/11/24 11:10	09/13/24 16:00

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SAMPLE ANALYTE COUNT

Project: TEC 322 LF CCR
Pace Project No.: 60460524

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60460524001	**MW-1-091124**	EPA 200.7	ARMN	3	PASI-K
		EPA 6010	ARMN	1	PASI-K
		EPA 200.8	JGP	2	PASI-K
		EPA 300.0	MLL	3	PASI-SA
		SM 2540C	TML	1	PASI-K
		SM 4500-H+B	TML	1	PASI-K
60460524002	**MW-4-091124**	EPA 200.7	ARMN	3	PASI-K
		EPA 6010	ARMN	1	PASI-K
		EPA 200.8	JGP	2	PASI-K
		EPA 300.0	MLL	3	PASI-SA
		SM 2540C	TML	1	PASI-K
		SM 4500-H+B	TML	1	PASI-K
60460524003	**MW-5-091124**	EPA 200.7	ARMN	3	PASI-K
		EPA 6010	ARMN	1	PASI-K
		EPA 200.8	JGP	2	PASI-K
		EPA 300.0	MLL	3	PASI-SA
		SM 2540C	TML	1	PASI-K
		SM 4500-H+B	TML	1	PASI-K
60460524004	**MW-6-091124**	EPA 200.7	ARMN	3	PASI-K
		EPA 6010	ARMN	1	PASI-K
		EPA 200.8	JGP	2	PASI-K
		EPA 300.0	MLL	3	PASI-SA
		SM 2540C	TML	1	PASI-K
		SM 4500-H+B	TML	1	PASI-K
60460524005	**TEC-322LF-DUP-091124**	EPA 200.7	ARMN	3	PASI-K
		EPA 6010	ARMN	1	PASI-K
		EPA 200.8	JGP	2	PASI-K
		EPA 300.0	MLL	3	PASI-SA
		SM 2540C	TML	1	PASI-K
		SM 4500-H+B	TML	1	PASI-K

PASI-K = Pace Analytical Services - Kansas City
PASI-SA = Pace Analytical Services - Salina

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

Project: TEC 322 LF CCR
Pace Project No.: 60460524

Method: **EPA 200.7**
Description: 200.7 Metals, Total
Client: Evergy_Haley & Aldrich
Date: September 30, 2024

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

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

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

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

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

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

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

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

QC Batch: 908815

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 60460523001,60460527001

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

- MS (Lab ID: 3596993)
  - Calcium
- MSD (Lab ID: 3596992)
  - Calcium

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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

PROJECT NARRATIVE

Project: TEC 322 LF CCR
Pace Project No.: 60460524

Method: **EPA 6010**
Description: 6010 MET ICP
Client: Evergy_Haley & Aldrich
Date: September 30, 2024

General Information:
5 samples were analyzed for EPA 6010 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 3010 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: TEC 322 LF CCR
Pace Project No.: 60460524

Method: **EPA 200.8**
Description: 200.8 MET ICPMS
Client: Evergy_Haley & Aldrich
Date: September 30, 2024

General Information:
5 samples were analyzed for EPA 200.8 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 200.8 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.

Internal Standards:
All internal standards were within QC limits 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: TEC 322 LF CCR
Pace Project No.: 60460524

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: Evergy_Haley & Aldrich
Date: September 30, 2024

General Information:
5 samples were analyzed for EPA 300.0 by Pace Analytical Services Salina. 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.

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.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits 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:

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(913)599-5665

PROJECT NARRATIVE

Project: TEC 322 LF CCR
Pace Project No.: 60460524

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: Evergy_Haley & Aldrich
Date: September 30, 2024

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

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

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

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

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

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

Additional Comments:

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

PROJECT NARRATIVE

Project: TEC 322 LF CCR
Pace Project No.: 60460524

Method: **SM 4500-H+B**
Description: 4500H+ pH, Electrometric
Client: Evergy_Haley & Aldrich
Date: September 30, 2024

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

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

H6: Analysis initiated outside of the 15 minute EPA required holding time.
- MW-1-091124 (Lab ID: 60460524001)
- MW-4-091124 (Lab ID: 60460524002)
- MW-5-091124 (Lab ID: 60460524003)
- MW-6-091124 (Lab ID: 60460524004)
- TEC-322LF-DUP-091124 (Lab ID: 60460524005)

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:

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

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

ANALYTICAL RESULTS

Project: TEC 322 LF CCR
Pace Project No.: 60460524

Sample: MW-1-091124 **Lab ID: 60460524001** Collected: 09/11/24 11:10 Received: 09/13/24 16:00 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							
Barium, Total Recoverable	**0.051**	mg/L	0.0050	1	09/17/24 09:19	09/27/24 12:58	7440-39-3	
Boron, Total Recoverable	**<0.10**	mg/L	0.10	1	09/17/24 09:19	09/27/24 12:58	7440-42-8	
Calcium, Total Recoverable	**180**	mg/L	0.20	1	09/17/24 09:19	09/27/24 12:58	7440-70-2	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Pace Analytical Services - Kansas City							
Lithium, Total Recoverable	**0.014**	mg/L	0.010	1	09/17/24 09:19	09/26/24 19:45	7439-93-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Arsenic, Total Recoverable	**<0.0010**	mg/L	0.0010	1	09/19/24 08:18	09/27/24 13:48	7440-38-2	
Cobalt, Total Recoverable	**<0.0010**	mg/L	0.0010	1	09/19/24 08:18	09/27/24 13:48	7440-48-4	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Salina							
Chloride	**44.4**	mg/L	5.0	5		09/19/24 16:52	16887-00-6	
Fluoride	**0.29**	mg/L	0.10	1		09/19/24 09:47	16984-48-8	
Sulfate	**341**	mg/L	50.0	50		09/19/24 18:05	14808-79-8	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**928**	mg/L	13.3	1		09/18/24 15:22		
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		09/24/24 13:19		H6

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: TEC 322 LF CCR
Pace Project No.: 60460524

Sample: MW-4-091124 **Lab ID: 60460524002** Collected: 09/11/24 10:30 Received: 09/13/24 16:00 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							
Barium, Total Recoverable	**0.12**	mg/L	0.0050	1	09/17/24 09:19	09/27/24 13:05	7440-39-3	
Boron, Total Recoverable	**<0.10**	mg/L	0.10	1	09/17/24 09:19	09/27/24 13:05	7440-42-8	
Calcium, Total Recoverable	**192**	mg/L	0.20	1	09/17/24 09:19	09/27/24 13:05	7440-70-2	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
	Pace Analytical Services - Kansas City							
Lithium, Total Recoverable	**<0.010**	mg/L	0.010	1	09/17/24 09:19	09/26/24 19:47	7439-93-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8							
	Pace Analytical Services - Kansas City							
Arsenic, Total Recoverable	**0.0023**	mg/L	0.0010	1	09/19/24 08:18	09/27/24 14:01	7440-38-2	
Cobalt, Total Recoverable	**<0.0010**	mg/L	0.0010	1	09/19/24 08:18	09/27/24 14:01	7440-48-4	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
	Pace Analytical Services - Salina							
Chloride	**280**	mg/L	20.0	20		09/19/24 18:49	16887-00-6	
Fluoride	**0.19**	mg/L	0.10	1		09/19/24 10:31	16984-48-8	
Sulfate	**171**	mg/L	20.0	20		09/19/24 18:49	14808-79-8	
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
	Pace Analytical Services - Kansas City							
Total Dissolved Solids	**1130**	mg/L	20.0	1		09/18/24 15:22		
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		09/24/24 13:12		H6

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: TEC 322 LF CCR
Pace Project No.: 60460524

Sample: MW-5-091124 **Lab ID: 60460524003** Collected: 09/11/24 13:45 Received: 09/13/24 16:00 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							
Barium, Total Recoverable	**0.031**	mg/L	0.0050	1	09/17/24 09:19	09/27/24 13:07	7440-39-3	
Boron, Total Recoverable	**0.36**	mg/L	0.10	1	09/17/24 09:19	09/27/24 13:07	7440-42-8	
Calcium, Total Recoverable	**253**	mg/L	0.20	1	09/17/24 09:19	09/27/24 13:07	7440-70-2	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Pace Analytical Services - Kansas City							
Lithium, Total Recoverable	**0.023**	mg/L	0.010	1	09/17/24 09:19	09/26/24 19:49	7439-93-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Arsenic, Total Recoverable	**<0.0010**	mg/L	0.0010	1	09/19/24 08:18	09/27/24 14:04	7440-38-2	
Cobalt, Total Recoverable	**<0.0010**	mg/L	0.0010	1	09/19/24 08:18	09/27/24 14:04	7440-48-4	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Salina							
Chloride	**42.5**	mg/L	5.0	5		09/19/24 19:03	16887-00-6	
Fluoride	**0.26**	mg/L	0.10	1		09/19/24 10:46	16984-48-8	
Sulfate	**553**	mg/L	50.0	50		09/19/24 19:18	14808-79-8	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**1330**	mg/L	20.0	1		09/18/24 15:16		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Kansas City							
pH at 25 Degrees C	**6.9**	Std. Units	0.10	1		09/24/24 13:32		H6

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: TEC 322 LF CCR
Pace Project No.: 60460524

Sample: MW-6-091124 **Lab ID: 60460524004** Collected: 09/11/24 11:40 Received: 09/13/24 16:00 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							
Barium, Total Recoverable	**0.016**	mg/L	0.0050	1	09/17/24 09:19	09/27/24 13:08	7440-39-3	
Boron, Total Recoverable	**0.47**	mg/L	0.10	1	09/17/24 09:19	09/27/24 13:08	7440-42-8	
Calcium, Total Recoverable	**405**	mg/L	0.20	1	09/17/24 09:19	09/27/24 13:08	7440-70-2	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Pace Analytical Services - Kansas City							
Lithium, Total Recoverable	**0.017**	mg/L	0.010	1	09/17/24 09:19	09/26/24 19:56	7439-93-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Arsenic, Total Recoverable	**<0.0010**	mg/L	0.0010	1	09/19/24 08:18	09/27/24 14:07	7440-38-2	
Cobalt, Total Recoverable	**0.0024**	mg/L	0.0010	1	09/19/24 08:18	09/27/24 14:07	7440-48-4	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Salina							
Chloride	**51.2**	mg/L	5.0	5		09/19/24 19:33	16887-00-6	
Fluoride	**0.25**	mg/L	0.10	1		09/19/24 11:01	16984-48-8	
Sulfate	**1110**	mg/L	100	100		09/19/24 19:47	14808-79-8	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**1850**	mg/L	66.7	1		09/18/24 15:16		
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		09/24/24 13:23		H6

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: TEC 322 LF CCR
Pace Project No.: 60460524

Sample: TEC-322LF-DUP-091124 **Lab ID: 60460524005** Collected: 09/11/24 11:10 Received: 09/13/24 16:00 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							
Barium, Total Recoverable	**0.049**	mg/L	0.0050	1	09/17/24 09:19	09/27/24 13:10	7440-39-3	
Boron, Total Recoverable	**<0.10**	mg/L	0.10	1	09/17/24 09:19	09/27/24 13:10	7440-42-8	
Calcium, Total Recoverable	**167**	mg/L	0.20	1	09/17/24 09:19	09/27/24 13:10	7440-70-2	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Pace Analytical Services - Kansas City							
Lithium, Total Recoverable	**0.011**	mg/L	0.010	1	09/17/24 09:19	09/26/24 19:58	7439-93-2	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City							
Arsenic, Total Recoverable	**<0.0010**	mg/L	0.0010	1	09/19/24 08:18	09/27/24 14:10	7440-38-2	
Cobalt, Total Recoverable	**<0.0010**	mg/L	0.0010	1	09/19/24 08:18	09/27/24 14:10	7440-48-4	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Salina							
Chloride	**44.8**	mg/L	5.0	5		09/19/24 20:02	16887-00-6	
Fluoride	**0.30**	mg/L	0.10	1		09/19/24 11:15	16984-48-8	
Sulfate	**345**	mg/L	50.0	50		09/19/24 20:17	14808-79-8	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City							
Total Dissolved Solids	**927**	mg/L	13.3	1		09/18/24 15:16		
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		09/24/24 13:20		H6

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: TEC 322 LF CCR
Pace Project No.: 60460524

QC Batch: 908815
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: 60460524001, 60460524002, 60460524003, 60460524004, 60460524005

METHOD BLANK: 3596989 Matrix: Water
Associated Lab Samples: 60460524001, 60460524002, 60460524003, 60460524004, 60460524005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Barium	mg/L	<0.0050	0.0050	09/27/24 12:44	
Boron	mg/L	<0.10	0.10	09/27/24 12:44	
Calcium	mg/L	<0.20	0.20	09/27/24 12:44	

LABORATORY CONTROL SAMPLE: 3596990

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	mg/L	1	1.0	102	85-115	
Boron	mg/L	1	0.98	98	85-115	
Calcium	mg/L	10	11.2	112	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3596991 3596992

Parameter	Units	60460523001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	mg/L	43.8 ug/L	1	1	1.0	1.0	98	100	70-130	2	20	
Boron	mg/L	367 ug/L	1	1	1.3	1.4	97	100	70-130	2	20	
Calcium	mg/L	235000 ug/L	10	10	243	248	80	133	70-130	2	20	M1

MATRIX SPIKE SAMPLE: 3596993

Parameter	Units	60460527001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	mg/L	0.050	1	1.1	101	70-130	
Boron	mg/L	0.38	1	1.4	100	70-130	
Calcium	mg/L	239	10	253	141	70-130	M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: TEC 322 LF CCR
Pace Project No.: 60460524

QC Batch: 908886
QC Batch Method: EPA 200.8
Analysis Method: EPA 200.8
Analysis Description: 200.8 MET
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60460524001, 60460524002, 60460524003, 60460524004, 60460524005

METHOD BLANK: 3597284 Matrix: Water
Associated Lab Samples: 60460524001, 60460524002, 60460524003, 60460524004, 60460524005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	<0.0010	0.0010	09/27/24 13:34	
Cobalt	mg/L	<0.0010	0.0010	09/27/24 13:34	

LABORATORY CONTROL SAMPLE: 3597285

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.04	0.040	99	85-115	
Cobalt	mg/L	0.04	0.041	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3597286 3597287

Parameter	Units	60460524001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	<0.0010	0.04	0.04	0.042	0.041	104	102	70-130	2	20	
Cobalt	mg/L	<0.0010	0.04	0.04	0.040	0.039	99	98	70-130	1	20	

MATRIX SPIKE SAMPLE: 3597288

Parameter	Units	60460531002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	0.0014	0.04	0.042	100	70-130	
Cobalt	mg/L	<0.0010	0.04	0.039	96	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: TEC 322 LF CCR
Pace Project No.: 60460524

QC Batch: 908810
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60460524001, 60460524002, 60460524003, 60460524004, 60460524005

METHOD BLANK: 3596971 Matrix: Water
Associated Lab Samples: 60460524001, 60460524002, 60460524003, 60460524004, 60460524005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lithium	mg/L	<0.010	0.010	09/26/24 19:11	

LABORATORY CONTROL SAMPLE: 3596972

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lithium	mg/L	1	1.0	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3596973 3596974

Parameter	Units	60460491004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lithium	mg/L	12.0 ug/L	1	1	1.0	1.0	100	100	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: TEC 322 LF CCR
Pace Project No.: 60460524

QC Batch: 909076
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Salina
Associated Lab Samples: 60460524001, 60460524002, 60460524003, 60460524004, 60460524005

METHOD BLANK: 3598110 Matrix: Water
Associated Lab Samples: 60460524001, 60460524002, 60460524003, 60460524004, 60460524005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<1.0	1.0	09/19/24 09:18	
Fluoride	mg/L	<0.10	0.10	09/19/24 09:18	
Sulfate	mg/L	<1.0	1.0	09/19/24 09:18	

LABORATORY CONTROL SAMPLE: 3598111

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	99	90-110	
Fluoride	mg/L	2.5	2.5	101	90-110	
Sulfate	mg/L	5	5.1	102	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3598112 3598113

Parameter	Units	60460524001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	44.4	25	25	70.3	70.5	103	104	80-120	0	15	
Fluoride	mg/L	0.29	2.5	2.5	2.8	2.7	98	98	80-120	1	15	
Sulfate	mg/L	341	250	250	609	603	107	105	80-120	1	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3598114 3598115

Parameter	Units	60460531002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	22.9	25	25	49.6	49.2	107	105	80-120	1	15	
Fluoride	mg/L	0.24	2.5	2.5	2.7	2.7	100	98	80-120	2	15	
Sulfate	mg/L	246	250	250	498	498	101	101	80-120	0	15	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: TEC 322 LF CCR
Pace Project No.: 60460524

QC Batch: 909000
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60460524001, 60460524002

METHOD BLANK: 3597749 Matrix: Water
Associated Lab Samples: 60460524001, 60460524002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	09/18/24 15:20	

LABORATORY CONTROL SAMPLE: 3597750

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	963	96	80-120	

SAMPLE DUPLICATE: 3597751

Parameter	Units	60460278001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	465	465	0	10	

SAMPLE DUPLICATE: 3598136

Parameter	Units	60460444005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	3230	3170	2	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: TEC 322 LF CCR
Pace Project No.: 60460524

QC Batch: 909002
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60460524003, 60460524004, 60460524005

METHOD BLANK: 3597756 Matrix: Water
Associated Lab Samples: 60460524003, 60460524004, 60460524005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	09/18/24 15:15	

LABORATORY CONTROL SAMPLE: 3597757

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	972	97	80-120	

SAMPLE DUPLICATE: 3597758

Parameter	Units	60460524003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1330	1340	0	10	

SAMPLE DUPLICATE: 3597764

Parameter	Units	60460191019 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	988	986	0	10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: TEC 322 LF CCR
Pace Project No.: 60460524

QC Batch: 909694
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: 60460524001, 60460524002, 60460524003, 60460524004, 60460524005

SAMPLE DUPLICATE: 3600994

Parameter	Units	60460669003 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.9	7.0	0	5	H6

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: TEC 322 LF CCR
Pace Project No.: 60460524

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

H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: TEC 322 LF CCR
Pace Project No.: 60460524

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60460524001	**MW-1-091124**	EPA 200.7	908815	EPA 200.7	908897
60460524002	**MW-4-091124**	EPA 200.7	908815	EPA 200.7	908897
60460524003	**MW-5-091124**	EPA 200.7	908815	EPA 200.7	908897
60460524004	**MW-6-091124**	EPA 200.7	908815	EPA 200.7	908897
60460524005	**TEC-322LF-DUP-091124**	EPA 200.7	908815	EPA 200.7	908897
60460524001	**MW-1-091124**	EPA 3010	908810	EPA 6010	908898
60460524002	**MW-4-091124**	EPA 3010	908810	EPA 6010	908898
60460524003	**MW-5-091124**	EPA 3010	908810	EPA 6010	908898
60460524004	**MW-6-091124**	EPA 3010	908810	EPA 6010	908898
60460524005	**TEC-322LF-DUP-091124**	EPA 3010	908810	EPA 6010	908898
60460524001	**MW-1-091124**	EPA 200.8	908886	EPA 200.8	909138
60460524002	**MW-4-091124**	EPA 200.8	908886	EPA 200.8	909138
60460524003	**MW-5-091124**	EPA 200.8	908886	EPA 200.8	909138
60460524004	**MW-6-091124**	EPA 200.8	908886	EPA 200.8	909138
60460524005	**TEC-322LF-DUP-091124**	EPA 200.8	908886	EPA 200.8	909138
60460524001	**MW-1-091124**	EPA 300.0	909076		
60460524002	**MW-4-091124**	EPA 300.0	909076		
60460524003	**MW-5-091124**	EPA 300.0	909076		
60460524004	**MW-6-091124**	EPA 300.0	909076		
60460524005	**TEC-322LF-DUP-091124**	EPA 300.0	909076		
60460524001	**MW-1-091124**	SM 2540C	909000		
60460524002	**MW-4-091124**	SM 2540C	909000		
60460524003	**MW-5-091124**	SM 2540C	909002		
60460524004	**MW-6-091124**	SM 2540C	909002		
60460524005	**TEC-322LF-DUP-091124**	SM 2540C	909002		
60460524001	**MW-1-091124**	SM 4500-H+B	909694		
60460524002	**MW-4-091124**	SM 4500-H+B	909694		
60460524003	**MW-5-091124**	SM 4500-H+B	909694		
60460524004	**MW-6-091124**	SM 4500-H+B	909694		
60460524005	**TEC-322LF-DUP-091124**	SM 4500-H+B	909694		

WO# : 60460524

60460524

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

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: D18 **Type of Ice:** Wet Blue None

Cooler Temperature (°C): **As-read** 6.0 **Corr. Factor** -0.1 **Corrected** 5.9

Date and initials of person examining contents: AT 9/16

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) **LOT#:** 88727	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

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

CHAIN-OF-CUSTODY Analytical Request Document

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

LAB USE ONLY- Affix Workorder/Login Label Here

60460924

Scan QR Code for instructions

Company Name:	Evergy Kansas Central, Inc.	Contact/Report To:	Jake Humphrey
Street Address:	818 S Kansas Avenue, Topeka, KS 66612	Phone #:	(913)634-0605
		E-Mail:	jake.humphrey@evergy.com
		Cc E-Mail:	skaney@haleyaldrich.com
Customer Project #:			
Project Name:	TEC LF 322 CCR	Invoice To:	Tecumseh Center
		Invoice E-Mail:	evergyap@onlinecapturecenter.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	WSTR-2000018660
		Quote #:	

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

County / State origin of sample(s): Kansas

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

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

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

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

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

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

Specify Container Size **: 3 2 3 3
Identify Container Preservative Type***: 2 1 1 1

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

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

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	200.7 / 200.8 / 6010	2540C Total Dissolved Solids	300.0 IC Cl,F,SO4	4500H+ pH, Electrometric	Sample Comment
MW-1-091124	GW	Grab	-	-	9/11/2024	1110	4	-	-	X	X	X	X	
MW-4-091124	GW	Grab	-	-	9/11/2024	1030	4	-	-	X	X	X	X	
MW-5-091124	GW	Grab	-	-	9/11/2024	1345	4	-	-	X	X	X	X	
MW-6-091124	GW	Grab	-	-	9/11/2024	1140	4	-	-	X	X	X	X	
TEC-322LF-DUP-091124	GW	Grab	-	-	9/11/2024	1110	4	-	-	X	X	X	X	

Lab Use Only

Proj. Mgr: Alice Spiller
AcctNum / Client ID:
Table #:
Profile / Template: 16502
Prelog / Bottle Ord. ID: EZ 3150900

Preservation non-conformance identified for sample.

Additional Instructions from Pace®:
Metals; B,Ca,Sb,As,Ba,Be,Cd,Cr,Co,Pb,Li,Hg,Mo,Se,Tl

Collected By:
(Printed Name): Jason R. Franks
Signature: Jason R. Franks

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp (°C):	On Ice:
				5.9	

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Jason R. Franks / SCS	09/13/2024 / 15:00		9/13 1600
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

Tracking Number:

Delivered by: [ ] In- Person [ ] Courier
[ ] FedEX [ ] UPS [ ] Other

Page: 1 of 1

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

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9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

October 23, 2024

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

RE: Project: TEC 322 LF CCR RADCHEM
Pace Project No.: 60461249

Dear Jake Humphrey:

Enclosed are the analytical results for sample(s) received by the laboratory on September 25, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Greensburg

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: Heath Horyna, Evergy, Inc.
Samantha Kaney, Haley & Aldrich
Melanie Satanek, Haley & Aldrich, Inc.
Adriana Sosa, Haley & Aldrich, Inc.
Nick Williams, Haley Aldrich

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CERTIFICATIONS

Project: TEC 322 LF CCR RADCHEM
Pace Project No.: 60461249

Pace Analytical Services Pennsylvania

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

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SAMPLE SUMMARY

Project: TEC 322 LF CCR RADCHEM
Pace Project No.: 60461249

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60461249001	**MW-1**	Water	09/25/24 12:05	09/25/24 16:08
60461249002	**MW-4**	Water	09/25/24 14:15	09/25/24 16:08
60461249003	**MW-5**	Water	09/25/24 13:30	09/25/24 16:08
60461249004	**MW-6**	Water	09/25/24 12:40	09/25/24 16:08
60461249005	**TEC-LANDFILL-DUP**	Water	09/25/24 12:05	09/25/24 16:08

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SAMPLE ANALYTE COUNT

Project: TEC 322 LF CCR RADCHEM
Pace Project No.: 60461249

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60461249001	**MW-1**	EPA 903.1	REH1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60461249002	**MW-4**	EPA 903.1	REH1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60461249003	**MW-5**	EPA 903.1	REH1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60461249004	**MW-6**	EPA 903.1	REH1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
60461249005	**TEC-LANDFILL-DUP**	EPA 903.1	REH1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

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PROJECT NARRATIVE

Project: TEC 322 LF CCR RADCHEM
Pace Project No.: 60461249

Method: **EPA 903.1**
Description: 903.1 Radium 226
Client: Evergy_Haley & Aldrich
Date: October 23, 2024

General Information:
5 samples were analyzed for EPA 903.1 by Pace Analytical Services Greensburg. 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:

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PROJECT NARRATIVE

Project: TEC 322 LF CCR RADCHEM
Pace Project No.: 60461249

Method: **EPA 904.0**
Description: 904.0 Radium 228
Client: Evergy_Haley & Aldrich
Date: October 23, 2024

General Information:
5 samples were analyzed for EPA 904.0 by Pace Analytical Services Greensburg. 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:

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PROJECT NARRATIVE

Project: TEC 322 LF CCR RADCHEM
Pace Project No.: 60461249

Method: **Total Radium Calculation**
Description: Total Radium 228+226
Client: Evergy_Haley & Aldrich
Date: October 23, 2024

General Information:
5 samples were analyzed for Total Radium Calculation by Pace Analytical Services Greensburg. 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:

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

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: TEC 322 LF CCR RADCHEM
Pace Project No.: 60461249

Sample: MW-1 **Lab ID: 60461249001** Collected: 09/25/24 12:05 Received: 09/25/24 16:08 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.0454 ± 0.295 (0.595) C:NA T:92%**	pCi/L	10/14/24 12:38	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.409 ± 0.406 (0.838) C:77% T:84%**	pCi/L	10/14/24 11:23	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.454 ± 0.701 (1.43)**	pCi/L	10/21/24 16:16	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: TEC 322 LF CCR RADCHEM
Pace Project No.: 60461249

Sample: MW-4 **Lab ID: 60461249002** Collected: 09/25/24 14:15 Received: 09/25/24 16:08 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.499 ± 0.557 (0.906) C:NA T:94%**	pCi/L	10/14/24 12:38	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**2.59 ± 0.691 (0.691) C:78% T:87%**	pCi/L	10/14/24 11:23	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**3.09 ± 1.25 (1.60)**	pCi/L	10/21/24 16:16	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: TEC 322 LF CCR RADCHEM
Pace Project No.: 60461249

Sample: MW-5 **Lab ID: 60461249003** Collected: 09/25/24 13:30 Received: 09/25/24 16:08 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.0463 ± 0.327 (0.653) C:NA T:92%**	pCi/L	10/14/24 12:51	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.884 ± 0.477 (0.860) C:72% T:86%**	pCi/L	10/14/24 11:23	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.930 ± 0.804 (1.51)**	pCi/L	10/21/24 16:16	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: TEC 322 LF CCR RADCHEM
Pace Project No.: 60461249

Sample: MW-6 **Lab ID: 60461249004** Collected: 09/25/24 12:40 Received: 09/25/24 16:08 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.340 ± 0.458 (0.770) C:NA T:96%**	pCi/L	10/14/24 12:51	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**1.21 ± 0.473 (0.695) C:74% T:90%**	pCi/L	10/14/24 11:23	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.55 ± 0.931 (1.47)**	pCi/L	10/21/24 16:16	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: TEC 322 LF CCR RADCHEM
Pace Project No.: 60461249

Sample: TEC-LANDFILL-DUP **Lab ID: 60461249005** Collected: 09/25/24 12:05 Received: 09/25/24 16:08 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.0437 ± 0.226 (0.470) C:NA T:96%**	pCi/L	10/14/24 12:51	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.765 ± 0.385 (0.639) C:77% T:89%**	pCi/L	10/14/24 11:24	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.809 ± 0.611 (1.11)**	pCi/L	10/21/24 16:16	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: TEC 322 LF CCR RADCHEM
Pace Project No.: 60461249

QC Batch: 699237
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 60461249001, 60461249002, 60461249003, 60461249004, 60461249005

METHOD BLANK: 3405683 Matrix: Water
Associated Lab Samples: 60461249001, 60461249002, 60461249003, 60461249004, 60461249005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.242 ± 0.394 (0.857) C:76% T:84%	pCi/L	10/14/24 11:23	

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: TEC 322 LF CCR RADCHEM
Pace Project No.: 60461249

QC Batch: 699236
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 60461249001, 60461249002, 60461249003, 60461249004, 60461249005

METHOD BLANK: 3405682 Matrix: Water
Associated Lab Samples: 60461249001, 60461249002, 60461249003, 60461249004, 60461249005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.112 ± 0.283 (0.525) C:NA T:94%	pCi/L	10/14/24 12:38	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: TEC 322 LF CCR RADCHEM
Pace Project No.: 60461249

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

Act - Activity

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

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: TEC 322 LF CCR RADCHEM
Pace Project No.: 60461249

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60461249001	**MW-1**	EPA 903.1	699236		
60461249002	**MW-4**	EPA 903.1	699236		
60461249003	**MW-5**	EPA 903.1	699236		
60461249004	**MW-6**	EPA 903.1	699236		
60461249005	**TEC-LANDFILL-DUP**	EPA 903.1	699236		
60461249001	**MW-1**	EPA 904.0	699237		
60461249002	**MW-4**	EPA 904.0	699237		
60461249003	**MW-5**	EPA 904.0	699237		
60461249004	**MW-6**	EPA 904.0	699237		
60461249005	**TEC-LANDFILL-DUP**	EPA 904.0	699237		
60461249001	**MW-1**	Total Radium Calculation	704304		
60461249002	**MW-4**	Total Radium Calculation	704304		
60461249003	**MW-5**	Total Radium Calculation	704304		
60461249004	**MW-6**	Total Radium Calculation	704304		
60461249005	**TEC-LANDFILL-DUP**	Total Radium Calculation	704304		

WO# : 60461249

60461249

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

Client Name: Energy - Hale & Aldrich

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: T216 **Type of Ice:** Wet Blue None

Cooler Temperature (°C): As-read 16.5 **Corr. Factor** -0.1 **Corrected** 16.4

Date and initials of person examining contents: AF 9/25

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) **LOT#:** 88727	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Qualtrax Document ID: 30468

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

CHAIN-OF-CUSTODY Analytical Request Document

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

LAB USE ONLY- Affix Workorder/Login Label Here

Scan QR Code for instructions

Company Name:	Evergy_Haley & Aldrich	Contact/Report To:	Jake Humphrey
Street Address:	818 S Kansas Avenue Topeka, KS 66612	Phone #:	(913)634-0605
		E-Mail:	jake.humphrey@evergy.com
		Cc E-Mail:	
Customer Project #:			
Project Name:	TEC 322 LF CCR RADCHEM	Invoice To:	Tecumseh Center
		Invoice E-Mail:	evergyap@onlinecapturecenter.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	WSTR-2000018660
		Quote #:	

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

County / State origin of sample(s): Kansas

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

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

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

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

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

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

Specify Container Size **

Identify Container Preservative Type***

Analysis Requested

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

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

Lab Use Only
Proj. Mgr: Alice Spiller
AcctNum / Client ID:
Table #:
Profile / Template: 16502
Prelog / Bottle Ord. ID: EZ 3158129

Preservation non conformance identified for sample

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	Radium 226	Radium 228, combined, QC Sheets	Sample Comment
MW-1	WT	Grab	9/25/24	1205	-	-	2			X	X	
MW-4	WT	Grab	9/25/24	1415	-	-	2			X	X	
MW-5	WT	Grab	9/25/24	1330	-	-	2			X	X	
MW-6	WT	Grab	9/25/24	1240	-	-	2			X	X	
~~duplicate~~ TEC-LandSim-DUP	WT	Grab	9/25/24	1205	-	-	2			X	X	

Additional Instructions from Pace®:
Radium 226, Radium 228, combined, and QC Sheets

Collected By:
(Printed Name) Matt Vander Putten
Signature: Matt Vander Putten

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:
				18.4	

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
SCS Matt Vander Putten	9/25/24 1600		9/25 1608
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

Tracking Number:

Delivered by: [ ] In-Person [ ] Courier [ ] FedEX [ ] UPS [ ] Other

Page: 1 of 1

Internal Transfer Chain of Custody

Rush Multiplier____X
Samples Pre-Logged into eCOC

State Of Origin: KS
Cert. Needed: Yes No
Owner Received Date: 9/25/2024 Results Requested By: 10/24/2024

Workorder: 60461249 Workorder Name: TEC 322 LF CCR RADCHEM

Report To	Subcontract To
Alice Spiller Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone (913)599-5665	Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4 Greensburg, PA 15601 Phone (724)850-5600

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers HNO3						Requested Analysis QC Sheets	Radium 226	Radium 228, + combined										LAB USE ONLY
1	MW-1	PS	9/25/2024 12:05	60461249001	Water	2						X	X	X										001
2	MW-4	PS	9/25/2024 14:15	60461249002	Water	2						X	X	X										002
3	MW-5	PS	9/25/2024 13:30	60461249003	Water	2						X	X	X										003
4	MW-6	PS	9/25/2024 12:40	60461249004	Water	2						X	X	X										004
5	TEC-LANDFILL-DUP	PS	9/25/2024 12:05	60461249005	Water	2						X	X	X										005

Transfers	Released By	Date/Time	Received By	Date/Time
1	JAPAC	9/26/24 1700	BTC 11	9.27.24 0930
2				
3				

Comments

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

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

WO# : 30721461

30721461

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

Effective Date: 01/04/2024

WO# : 30721461

PM: MAR Due Date: 10/18/24

CLIENT: PACE_60_LEKS

Client Name: Pace-KS

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

Tracking Number: 4033 6450 4925

Initial / Date

Examined By: PS 9/28/24

Labeled By: PS 9/28/24

Temped By: ____

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

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

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

Temp should be above freezing to 6°C

Comments:	Yes	No	NA	pH paper Lot# 100 1041 / D.P.D. Residual Chlorine Lot # ____
Chain of Custody Present	✓			1.
Chain of Custody Filled Out:	✓			2.
-Were client corrections present on COC		✓		
Chain of Custody Relinquished	✓			3.
Sampler Name & Signature on COC:		✓		4.
Sample Labels match COC:	✓			5.
-Includes date/time/ID Matrix:	WT			
Samples Arrived within Hold Time:	✓			6.
Short Hold Time Analysis (<72hr remaining):		✓		7.
Rush Turn Around Time Requested:		✓		8.
Sufficient Volume:	✓			9.
Correct Containers Used:	✓			10.
-Pace Containers Used	✓			
Containers Intact:	✓			11.
Orthophosphate field filtered:			✓	12.
Hex Cr Aqueous samples field filtered:			✓	13.
Organic Samples checked for dichlorination			✓	14:
Filtered volume received for dissolved tests:			✓	15:
All containers checked for preservation:	✓			16.
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix				PH<2
All containers meet method preservation requirements:	✓			Initial when completed PS / Date/Time of Preservation / Lot# of added Preservative
8260C/D: Headspace in VOA Vials (> 6mm)			✓	17.
624.1: Headspace in VOA Vials (0mm)			✓	18.
Radon: Headspace in RAD Vials (0mm)			✓	19.
Trip Blank Present:			✓	Trip blank custody seal present? YES or NO
Rad Samples Screened <.05 mrem/hr.	✓			Initial when completed PS / Date: 9/27/24 / Survey Meter SN: 25014380

Comments:

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

Qualtrax ID: 55680

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Quality Control Sample Performance Assessment

Pace Analytical
www.pacelabs.com

Test:	Ra-226
Analyst:	REH1
Date:	9/30/2024
Batch ID:	81558
Matrix:	DW

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	3405682
MB concentration:	0.112
M/B Counting Uncertainty:	0.283
MB MDC:	0.525
MB Numerical Performance Indicator:	0.77
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCS81558	LCSD81558
Count Date:	10/21/2024	10/21/2024
Spike I.D.:	23-063	23-063
Spike Concentration (pCi/mL):	32.294	32.294
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.652	0.652
Target Conc. (pCi/L, g, F):	4.951	4.952
Uncertainty (Calculated):	0.233	0.233
Result (pCi/L, g, F):	3.727	5.272
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.983	1.163
Numerical Performance Indicator:	-2.37	0.53
Percent Recovery:	75.28%	106.45%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	133%	133%
Lower % Recovery Limits:	73%	73%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.		
Sample MS I.D.		
Sample MSD I.D.		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc.(pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	LCS81558	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	LCSD81558	
Sample Result (pCi/L, g, F):	3.727	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.983	
Sample Duplicate Result (pCi/L, g, F):	5.272	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	1.163	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	-1.988	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	34.30%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Fail***	
% RPD Limit:	32%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.		
Sample MS I.D.		
Sample MSD I.D.		
Sample Matrix Spike Result:		
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:		
MS/ MSD Duplicate Status vs Numerical Indicator:		
MS/ MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the RL.

Comments:

10/21/24

~~**Batch must be re-prepped due to unacceptable precision.~~

NI ±3 LL 10.21.24

NI <3 acceptable for NON-DW samples

Arizona DHES requires qualification for any AZ DW samples reported where the QC does not meet the recommended limits of the Manual for the Certification of Labs Analyzing Drinking Waters, 5th Edition , section 7.7 of Chapter VI.

Quality Control Sample Performance Assessment

Pace Analytical™ www.pacelabs.com

Test:	Ra-228
Analyst:	ZPC
Date:	10/9/2024
Worklist:	81559
Matrix:	WT

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Method Blank Assessment	
MB Sample ID	3405683
MB concentration:	0.242
M/B 2 Sigma CSU:	0.394
MB MDC:	0.857
MB Numerical Performance Indicator:	1.20
MB Status vs Numerical Indicator:	Pass
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment	LCSD (Y or N)?	Y
	LCS81559	LCSD81559
Count Date:	10/14/2024	10/14/2024
Spike I.D.:	23-043	23-043
Decay Corrected Spike Concentration (pCi/mL):	34.948	34.948
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.821	0.816
Target Conc. (pCi/L, g, F):	4.257	4.285
Uncertainty (Calculated):	0.209	0.210
Result (pCi/L, g, F):	3.127	3.855
LCS/LCSD 2 Sigma CSU (pCi/L, g, F):	0.817	0.921
Numerical Performance Indicator:	-2.63	-0.89
Percent Recovery:	73.46%	89.97%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass
Upper % Recovery Limits:	135%	135%
Lower % Recovery Limits:	60%	60%

Sample Matrix Spike Control Assessment	MS/MSD 1	MS/MSD 2
Sample Collection Date:		
Sample I.D.		
Sample MS I.D.		
Sample MSD I.D.		
Spike I.D.:		
MS/MSD Decay Corrected Spike Concentration (pCi/mL):		
Spike Volume Used in MS (mL):		
Spike Volume Used in MSD (mL):		
MS Aliquot (L, g, F):		
MS Target Conc.(pCi/L, g, F):		
MSD Aliquot (L, g, F):		
MSD Target Conc. (pCi/L, g, F):		
MS Spike Uncertainty (calculated):		
MSD Spike Uncertainty (calculated):		
Sample Result:		
Sample Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
MS Numerical Performance Indicator:		
MSD Numerical Performance Indicator:		
MS Percent Recovery:		
MSD Percent Recovery:		
MS Status vs Numerical Indicator:		
MSD Status vs Numerical Indicator:		
MS Status vs Recovery:		
MSD Status vs Recovery:		
MS/MSD Upper % Recovery Limits:		
MS/MSD Lower % Recovery Limits:		

Duplicate Sample Assessment		
Sample I.D.:	LCS81559	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	LCSD81559	
Sample Result (pCi/L, g, F):	3.127	
Sample Result 2 Sigma CSU (pCi/L, g, F):	0.817	
Sample Duplicate Result (pCi/L, g, F):	3.855	
Sample Duplicate Result 2 Sigma CSU (pCi/L, g, F):	0.921	
Are sample and/or duplicate results below RL?	NO	
Duplicate Numerical Performance Indicator:	-1.159	
(Based on the LCS/LCSD Percent Recoveries) Duplicate RPD:	20.20%	
Duplicate Status vs Numerical Indicator:	Pass	
Duplicate Status vs RPD:	Pass	
% RPD Limit:	36%	

Matrix Spike/Matrix Spike Duplicate Sample Assessment		
Sample I.D.		
Sample MS I.D.		
Sample MSD I.D.		
Sample Matrix Spike Result:		
Matrix Spike Result 2 Sigma CSU (pCi/L, g, F):		
Sample Matrix Spike Duplicate Result:		
Matrix Spike Duplicate Result 2 Sigma CSU (pCi/L, g, F):		
Duplicate Numerical Performance Indicator:		
(Based on the Percent Recoveries) MS/ MSD Duplicate RPD:		
MS/ MSD Duplicate Status vs Numerical Indicator:		
MS/ MSD Duplicate Status vs RPD:		
% RPD Limit:		

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

VAL
10/15/24

10-15-24
JJS