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November 25, 2024

Mr. Todd Hendricks Division of Waste Management Kentucky Department for Environmental Protection 300 Sower Boulevard, 2nd Floor Frankfort, Kentucky 40601

Ms. Jamie Nielsen Division of Waste Management Kentucky Department for Environmental Protection 300 Sower Boulevard, 2nd Floor Frankfort, Kentucky 40601

Dear Mr. Hendricks and Ms. Nielsen:

C-746-S&T LANDFILLS THIRD QUARTER CALENDAR YEAR 2024 (JULY-SEPTEMBER) COMPLIANCE MONITORING REPORT, PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, FRNP-RPT-0351/V3, PERMIT NUMBER SW07300014, SW07300015, SW07300045, AGENCY INTEREST ID NO. 3059

The subject report for the third quarter calendar year (CY) 2024 has been uploaded to the Kentucky eForms portal via the Kentucky Online Gateway. Other recipients outside the Solid Waste Branch are receiving this document via email distribution (see distribution list). This report is required in accordance with Solid Waste Landfill Permit Number SW07300014, SW07300015, SW07300045 (Permit). This report includes groundwater analytical data, a validation summary, groundwater flow rate and direction determination, figures depicting well locations, and methane monitoring results.

The statistical analyses of the third quarter CY 2024 monitoring well (MW) data collected from the C-746-S&T Landfills were performed in accordance with Monitoring Condition GSTR0003, Standard Requirement 3, using the U.S. Environmental Protection Agency guidance document, Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Final Guidance (1989).

A statistically significant exceedance was indicated for calcium in MW372 and MW373 as well as, dissolved solids, magnesium, sodium, and sulfate in MW373. These statistical exceedances are Type 2 Exceedances—Source Unknown. Continued evaluation of calcium, dissolved solids, magnesium, sodium, and sulfate levels through future quarterly monitoring events is recommended. This report also serves as the statistical exceedance notification for the third

PPPO-02-10030313-25

quarter CY 2024, in accordance with Monitoring Condition GSTR0001, Standard Requirement 5, of the Permit.

If you have any questions or require additional information, please contact Tom Reed at (859) 397-7003.

Sincerely,

APRIL LADD

Digitally signed by APRIL LADD Date: 2024.11.25 09:00:45 -06'00'

April Ladd

Paducah Site Lead

Portsmouth/Paducah Project Office

Enclosure:

C-746-S&T Landfills Third Quarter Calendar Year 2024 (July–September) Compliance Monitoring Report, Paducah Gaseous Diffusion Plant, Paducah, Kentucky, FRNP-RPT-0351/V3

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Third Quarter Calendar Year 2024
(July–September)
Compliance Monitoring Report,
Paducah Gaseous Diffusion Plant,
Paducah, Kentucky



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C-746-S&T Landfills
Third Quarter Calendar Year 2024
(July–September)
Compliance Monitoring Report,
Paducah Gaseous Diffusion Plant,
Paducah, Kentucky

Date Issued—November 2024

U.S. DEPARTMENT OF ENERGY Office of Environmental Management

Prepared by
FOUR RIVERS NUCLEAR PARTNERSHIP, LLC,
managing the
Deactivation and Remediation Project at the
Paducah Gaseous Diffusion Plant
under Contract DE-EM0004895

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ACRONYMS

CFR Code of Federal Regulations
COD chemical oxygen demand

KAR Kentucky Administrative Regulations

KRS Kentucky Revised Statutes
LEL lower explosive limit

LRGA Lower Regional Gravel Aquifer

LTL lower tolerance limit

MCL maximum contaminant level

MW monitoring well

RGA Regional Gravel Aquifer

UCRS Upper Continental Recharge System URGA Upper Regional Gravel Aquifer

UTL upper tolerance limit



1. INTRODUCTION

This report, C-746-S&T Landfills Third Quarter Calendar Year 2024 (July–September) Compliance Monitoring Report, Paducah Gaseous Diffusion Plant, Paducah, Kentucky, is being submitted in accordance with Solid Waste Landfill Permit No. SW07300014, SW07300015, SW07300045.

The Groundwater, Surface Water, Leachate, and Methane Monitoring Sample Data Reporting Form is provided in Appendix A. The facility information sheet is provided in Appendix B. Groundwater analytical results are presented in groundwater sample analyses tables and laboratory reports that are presented in Appendix C. The statistical analyses and qualification statement are provided in Appendix D. The groundwater flow rate and direction determinations are provided in Appendix E. Appendix F contains the notifications for all permit required parameters whose concentrations exceed the maximum contaminant level (MCL) for Kentucky solid waste facilities provided in 401 KAR 47:030 § 6 and for all permit required parameters listed in 40 CFR § 302.4, Appendix A, that do not have an MCL and whose concentrations exceed the historical background concentrations [upper tolerance limit (UTL), or both UTL and lower tolerance limit (LTL) for pH, as established at a 95% confidence]. Appendix G provides a chart of exceedances of the MCL and historical UTL that have occurred since the fourth quarter calendar year 2002. Methane monitoring results are documented on the approved C-746-S&T Landfills Methane Monitoring Report form provided in Appendix H. The form includes pertinent remarks/observations as required by 401 KAR 48:090 § 5. Surface water results are provided in Appendix I. Analytical laboratory certification is provided in Appendix J. Laboratory analytical methods used to analyze the included data set are provided in Appendix K. Micro-purging stability parameter results are provided in Appendix L.

1.1 BACKGROUND

The C-746-S&T Landfills are closed, solid waste landfills located north of the Paducah Site and south of the C-746-U Landfill. Construction and operation of the C-746-S Residential Landfill were permitted in April 1981 under Solid Waste Landfill Permit No. 073-00014. The permitted C-746-S Landfill area covers about 16 acres and contains a clay liner with a final cover of compacted soil. The C-746-S Landfill was a sanitary landfill for the Paducah Gaseous Diffusion Plant operations. The C-746-S Landfill is closed and has been inactive since July 1995.

Construction and operation of the C-746-T Inert Landfill were permitted in February 1985 under Solid Waste Landfill Permit No. 073-00015. The permitted C-746-T Landfill area covers about 20 acres and contains a clay liner with a final cover of compacted soil. The C-746-T Landfill was used to dispose of construction debris (e.g., concrete, wood, rock) and steam plant fly ash from the Paducah Gaseous Diffusion Plant operations. The C-746-T Landfill is closed and has been inactive since June 1992.

1.2 MONITORING PERIOD ACTIVITIES

1.2.1 Groundwater Monitoring

Three zones are monitored at the site: the Upper Continental Recharge System (UCRS), the Upper Regional Gravel Aquifer (URGA), and the Lower Regional Gravel Aquifer (LRGA). There are 23 monitoring wells (MWs) under permit for the C-746-S&T Landfills: 5 UCRS wells, 11 URGA wells, and 7 LRGA wells. A map of the MW locations is presented in Figure 1. All MWs listed on the permit were sampled this quarter, except MW389 (screened in the UCRS), which had insufficient amounts of water to obtain samples.

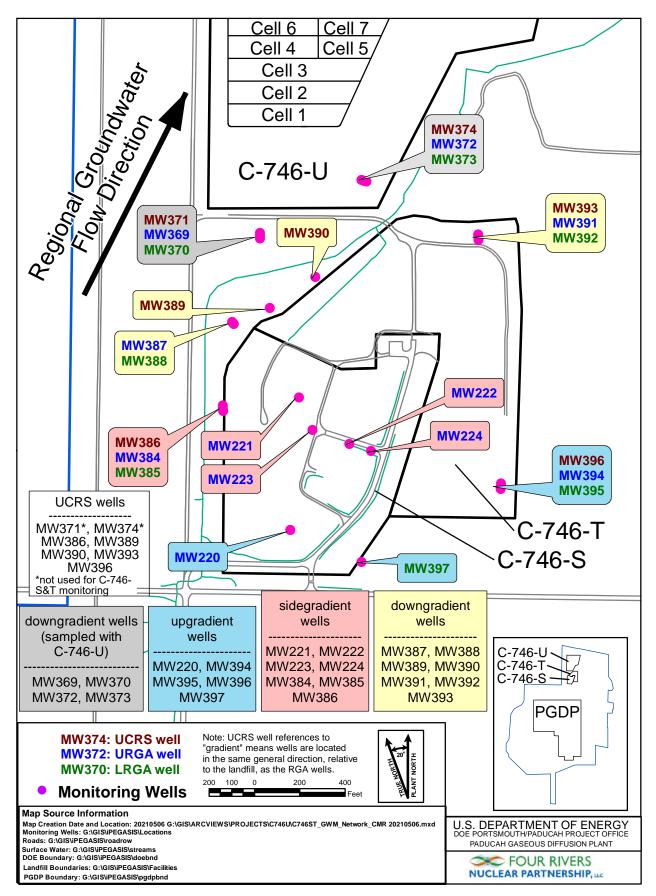


Figure 1. C-746-S&T Landfills Groundwater Monitoring Well Network

Consistent with the approved Groundwater Monitoring Plan for the Solid Waste Permitted Landfills (C-746-S Residential Landfill, C-746-T Inert Landfill, and C-746-U Contained Landfill) at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, PAD-PROJ-0139 (Groundwater Monitoring Plan), UCRS wells are included in the monitoring program (LATA Kentucky 2014). Groundwater flow gradients are downward through the UCRS, but the underlying Regional Gravel Aquifer (RGA) flows laterally. Groundwater flow in the RGA is typically in a north-northeasterly direction in the vicinity of the C-746-S&T Landfills. The Ohio River and lower reaches of Little Bayou Creek are the discharge areas for the RGA flow system from the vicinity of the landfills. Consistent with the conceptual site model, the constituent concentrations in UCRS wells are considered to be representative only of the conditions local to the well or sourced from overlying soils; thus, no discussion of potential "upgradient" sources is relevant to the discussion for the UCRS. Nevertheless, a UTL for background also has been calculated for UCRS wells using concentrations from UCRS wells located in the same direction (relative to the landfill) as those RGA wells identified as upgradient. The results from these wells are considered to represent historical "background" for UCRS water quality. Similarly, other gradient references for UCRS wells are identified using the same gradient references (relative to the landfill) that are attributed to nearby RGA wells. Results from UCRS wells are compared to this UTL (for background), and exceedances of these values are reported in the quarterly report.

Groundwater sampling was conducted within the third quarter 2024 in accordance with the Groundwater Monitoring Plan (LATA Kentucky 2014) using the Deactivation and Remediation Contractor, procedure CP4-ES-2101, *Groundwater Sampling*. Groundwater sampling for the third quarter 2024 was conducted on July 17–30, 2024. The analytical laboratory used U.S. Environmental Protection Agency-approved methods, as applicable. The parameters specified in Permit Condition GSTR0003, Special Condition 3, were analyzed for all locations sampled.

The groundwater flow rate and direction determination are provided in Appendix E. Depth-to-water was measured on July 23, 2024, in MWs of the C-746-S&T Landfills (see Appendix E, Table E.1); in MWs of the C-746-U Landfill; and in MWs of the surrounding region (shown on Appendix E, Figure E.3). Water level measurements in 39 vicinity wells define the potentiometric surface for the RGA. Typical regional flow in the RGA is northeastward, toward the Ohio River. During July 2024, RGA groundwater flow was directed inward and then north towards the Ohio River. The hydraulic gradient for the RGA in the vicinity of the C-746-S&T Landfills in July 2024 was 3.13×10^{-4} ft/ft, while the gradient beneath the C-746-S&T Landfills was approximately 1.99×10^{-4} ft/ft (see Appendix E, Table E.2). Calculated groundwater flow rates (average linear velocities) for the RGA at the C-746-S&T Landfills ranged from 3.38×10^{-1} to 5.77×10^{-1} ft/day (see Appendix E, Table E.3).

1.2.2 Methane Monitoring

Methane monitoring was conducted in accordance with 401 *KAR* 48:090 § 5 and the Solid Waste Landfill Permit. Industrial Hygiene staff monitored for the occurrence of methane in one on-site building location, four locations along the landfill boundary, and 27 passive gas vents located in Cells 1, 2, and 3 of the C-746-S Landfill on August 20, 2024. Appendix H provides a map of the monitoring locations (Appendix H, Figure H.1). Monitoring results identified that all locations were compliant with the regulatory requirement of < 100% lower explosive limit (LEL) at boundary locations and < 25% LEL at all other locations. The results are documented on the C-746-S&T Landfills Methane Monitoring Report provided in Appendix H.

1.2.3 Surface Water Monitoring

Surface water sampling was performed on July 9, 2024, at the three locations monitored for the C-746-S&T Landfills: (1) upstream location L135, (2) instream location L154, and (3) instream location L136 (Figure 2). Surface water was monitored, as specified in 401 KAR 48:300 § 2, and the approved Surface Water Monitoring Plan for C-746-U and C-746-S&T Landfills Permit Number SW07300014, SW07300015, SW07300045, Paducah Gaseous Diffusion Plant, Paducah, Kentucky, Agency Interest Number 3059 (FRNP 2021), which is Technical Application Attachment 24 of the Solid Waste Permit. Surface water results are provided in Appendix I.

1.3 KEY RESULTS

Groundwater data were evaluated in accordance with the approved Groundwater Monitoring Plan (LATA Kentucky 2014), which is Technical Application Attachment 25, of the Solid Waste Permit. Parameters that had concentrations that exceeded their respective MCL are listed in Table 1. Those constituents that exceeded their respective MCL were evaluated further against their historical background UTL. Table 2 identifies parameters that do not have MCLs but have concentrations that exceeded the statistically derived historical background UTL during the third quarter 2024. Those constituents (present in downgradient wells) that exceed their historical background UTL were evaluated against their current UTL-derived background using the most recent eight quarters of data from wells designated as background wells (Table 3).

Table 1. Summary of MCL Exceedances

UCRS	URGA	LRGA
None	None	MW395: Trichloroethene

The notification of parameters that exceeded the MCL has been submitted electronically to the Kentucky Division of Waste Management, in accordance with 401 KAR 48:300 § 7, prior to the submittal of this report.

The constituents that exceeded their MCL were subjected to a comparison against the UTL concentrations calculated using historical concentrations from wells identified as background. In accordance with the approved Groundwater Monitoring Plan (LATA Kentucky 2014), the MCL exceedance for trichloroethene in upgradient well MW395 did not exceed the historical background concentration and is considered to be a Type 1 exceedance—not attributable to the C-746-S&T Landfills.

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¹ The UTL comparison for pH uses a two-sided test, both UTL and LTL.

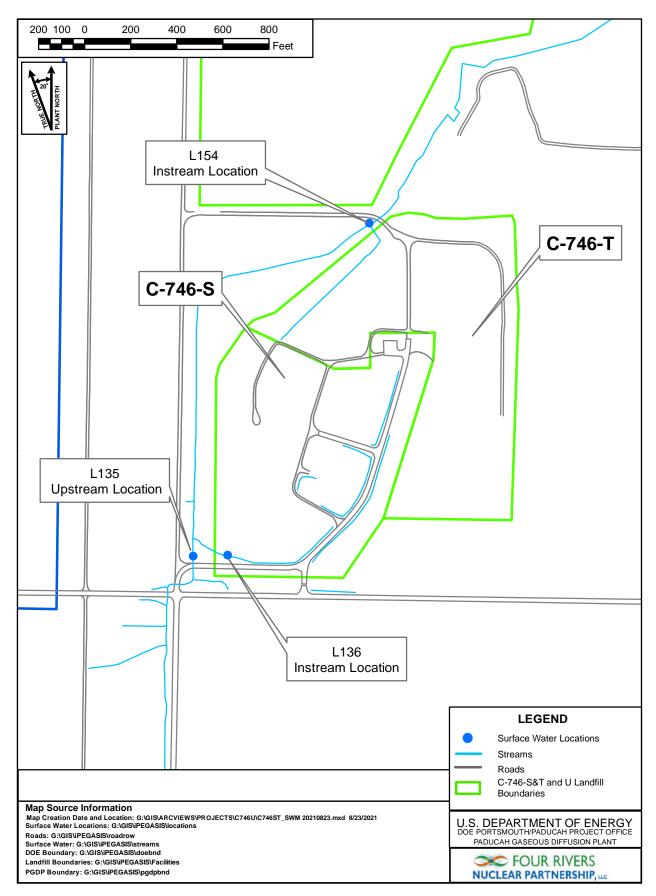


Figure 2. C-746-S&T Landfill Surface Water Monitoring Locations

Table 2. Exceedances of Statistically Derived Historical Background Concentrations

UCRS ^a	URGA	LRGA
MW386: Oxidation- reduction potential ^b	MW220: Sulfate	MW370: Oxidation-reduction potential ^b and sulfate
MW390: Oxidation- reduction potential, ^b radium-226, and technetium-99	MW221: Oxidation-reduction potential ^b and radium-226	MW373: Calcium, conductivity, dissolved solids, magnesium, oxidation- reduction potential, ^b sodium, and sulfate
MW393: Oxidation- reduction potential ^b	MW223:Oxidation-reduction potential ^b	MW385: Oxidation-reduction potential, ^b sulfate, and technetium-99
MW396: Oxidation- reduction potential ^b and radium-226	MW224: Sodium and sulfate	MW388: Oxidation-reduction potential, ^b radium-226, and sulfate
	MW369: Oxidation-reduction potential ^b and technetium-99	MW392: Oxidation-reduction potential ^b
	MW372: Calcium, conductivity, dissolved solids, magnesium, oxidation-reduction potential, b and sulfate	MW395: Oxidation-reduction potential ^b
	MW384: Oxidation-reduction potential, ^b radium-226, sulfate, and technetium-99	MW397: Oxidation-reduction potential ^b and radium-226
	MW387: Chemical oxygen demand (COD), magnesium, oxidation-reduction potential, b sulfate, and technetium-99	
	MW394: Oxidation-reduction potential ^b	

^a Gradients in the UCRS are downward. UCRS gradient designations are identified using the same gradient reference (relative to the landfill) that is attributed to nearby RGA wells.

Downgradient wells: MW369, MW370, MW372, MW373, MW387, MW388, MW389, MW390, MW391, MW392, and MW393. Background wells: MW220, MW394, MW395, MW396, and MW397.

Table 3. Exceedances of Current Background UTL in Downgradient Wells

URGA	LRGA
MW369: Technetium-99	MW370: Sulfate
MW372: Calcium, conductivity, dissolved solids,	MW373: Calcium, conductivity, dissolved
magnesium, and sulfate	solids, magnesium, sodium, and sulfate
MW387: Magnesium, sulfate, and technetium-99	MW388: Radium-226 and sulfate

This report serves as the notification of parameters that had statistically significant increased concentrations relative to historical background concentrations, as required by Permit No. SW07300014, SW07300015, SW07300045, Condition GSTR0003, Standard Requirement 5, and 401 *KAR* 48:300 § 7.

The constituents listed in Table 2 that had exceedances of the statistically derived historical background UTL underwent additional statistical evaluation. The current quarter concentrations were compared to the current background UTL to identify if the current downgradient well concentrations are consistent with current background values. The current background UTL was developed using the most recent eight

^b Oxidation-reduction potential calibrated as Eh.

Sidegradient wells: MW221, MW222, MW223, MW224, MW384, MW385, and MW386.

quarters of data from wells identified as background wells. Table 3 summarizes the evaluation against current background UTL for those constituents present in downgradient wells with historical UTL exceedances. In accordance with the approved Groundwater Monitoring Plan (LATA Kentucky 2014), constituents in downgradient wells that exceed the historical UTL, but do not exceed the current UTL, are considered not to have a C-746-S&T Landfills source; therefore, they are Type 1 exceedances—not attributable to the C-746-S&T Landfills.

The constituents listed in Table 3 that exceed both the historical UTL and the current UTL and do not have an identified source are considered preliminarily to be Type 2 exceedances, per the approved Groundwater Monitoring Plan (LATA Kentucky 2014). To evaluate these preliminary Type 2 exceedances further, the parameters were subjected to the Mann-Kendall statistical test for trend using the most recent eight quarters of data. The results are summarized in Table 4. Twelve of the 18 preliminary Type 2 exceedances in downgradient wells do not have increasing trends and are considered to be Type 1 exceedances—not attributable to the C-746-S&T Landfills.

Table 4. C-746-S&T Landfills Downgradient Wells Trend Summary Utilizing the Previous Eight Quarters

Location	Well ID	Parameter	Sample Size	Alphaa	p- Value ^b	$\mathbf{S}^{\mathbf{c}}$	Decision ^d
	MW369	Technetium-99	8	0.05	0.36	4	No Trend
	MW370	Sulfate	8	0.05	0.274	6	No Trend
		Calcium	8	0.05	0.031	16	Increasing
		Conductivity	8	0.05	0.119	-8	No Trend
	MW372	Dissolved Solids	8	0.05	0.138	11	No Trend
		Magnesium	8	0.05	0.119	8	No Trend
		Sulfate	8	0.05	0.089	12	No Trend
	MW373	Calcium	8	0.05	0.001	24	Increasing
C-746- S&T		Conductivity	8	0.05	0.089	12	No Trend
Landfills		Dissolved Solids	8	0.05	0.001	24	Increasing
		Magnesium	8	0.05	0.016	18	Increasing
		Sodium	8	0.05	0.001	24	Increasing
		Sulfate	8	0.05	0.001	24	Increasing
		Magnesium	8	0.05	0.089	-12	No Trend
	MW387	Sulfate	8	0.05	0.138	-11	No Trend
		Technetium-99	8	0.05	0.36	-4	No Trend
	MW388	Radium-226	8	0.05	0.119	8	No Trend
		Sulfate	8	0.05	0.36	-4	No Trend

^a An alpha of 0.05 represents a 95% confidence interval.

NOTE: Statistics were generated using ProUCL.

^b The p-value represents the risk of acceptance of the H_a hypothesis of a trend, in terms of a percentage.

^cThe initial value of the Mann-Kendall statistic, S, is assumed to be 0 (i.e., no trend). If a data value from a later time period is higher than a data value from an earlier time period, S is incremented by 1. On the other hand, if the data value from a later time period is lower than a data value sampled earlier, S is decremented by 1. The net result of all such increments and decrements yields the final value of S. A very high positive value of S is an indicator of an increasing trend, and a very low negative value indicates a decreasing trend

 $^{^{}d}$ The Mann-Kendall decision operates on two hypotheses: the H_{0} and H_{a} . H_{0} assumes there is no trend in the data, whereas H_{a} assumes either a positive or negative trend.

Six of the 18 preliminary Type 2 exceedances in downgradient wells had an increasing trend. Specifically, the Mann-Kendall statistical test indicates increasing trends for calcium in URGA well MW372 and LRGA well MW373; in addition to dissolved solids, magnesium, sodium, and sulfate in MW373. It should be noted that over the past eight quarters concentrations of calcium, dissolved solids, magnesium, sodium, and sulfate in URGA well MW372 are consistently lower than those shown in collocated LRGA well MW373. Since calcium, dissolved solids, magnesium, sodium, and sulfate concentrations are lower in the shallower screened well at this location, the C-746-S&T Landfills are likely not the source of the concentrations observed in the deeper screened well. Therefore, the observed trends in MW372/MW373 should be considered Type 2 exceedances—sources undetermined. Evaluation of calcium, dissolved solids, magnesium, sodium, and sulfate trends through future quarterly monitoring events is recommended.

In accordance with Permit Condition GSTR0003, Special Condition 2, of the Solid Waste Landfill Permit, the groundwater assessment and corrective action requirements of 401 *KAR* 48:300 § 8 shall not apply to the C-746-S Residential Landfill and the C-746-T Inert Landfill. This variance in the permit provides that groundwater assessment and corrective actions for these landfills will be conducted in accordance with the corrective action requirements of 401 *KAR* 39:090.

The statistical evaluation of UCRS concentrations against the current UCRS background UTL did not identify any UCRS wells exceeding both the historical and current backgrounds (Table 5).

Table 5. Exceedances of Current Background UTL in Downgradient UCRS Wells*

UCRS
UCKS
MW390: Oxidation-reduction potential and technetium-99
111 (13) (1 Chication reduction potential and technician))

*In the same direction (relative to the landfill) as RGA wells.

All MCL and UTL exceedances reported for this quarter, except for calcium in both MW372 and MW373, as well as dissolved solids, magnesium, sodium, and sulfate in MW373, were evaluated and considered to be Type 1 exceedances—not attributable to the C-746-S&T Landfills.

2. DATA EVALUATION/STATISTICAL SYNOPSIS

The statistical analyses conducted on the third quarter 2024 groundwater data collected from the C-746-S&T Landfill MWs were performed in accordance with the Groundwater Monitoring Plan (LATA Kentucky 2014). The statistical analyses for this report utilize data from the first eight quarters that were sampled for each parameter, beginning with the first two baseline sampling events in 2002, when available. The sampling dates associated with background data are listed next to the result in the statistical analysis sheets in Appendix D (Attachments D1 and D2).

For those parameters that exceed the MCL for Kentucky solid waste facilities found in 401 *KAR* 47:030 § 6, exceedances are documented and evaluated further as follows. Exceedances are reviewed against historical background results (UTL). If the MCL exceedance is found not to exceed the historical UTL, the exceedance is noted as a Type 1 exceedance—an exceedance not attributable to the landfills. If there is an exceedance of the MCL in a downgradient well and this constituent also exceeds the historical background, the quarterly result is compared to the current background UTL (developed using the most recent eight quarters of data from wells identified as downgradient wells) to identify if this exceedance is attributable to upgradient/non-landfill sources. If the downgradient well concentration is less than the current background, the exceedance is noted as a Type 1 exceedance. If a constituent exceeds its Kentucky solid waste facility MCL, historical background UTL, and current background UTL, it is reported as a Type 2 exceedance—source undetermined. Type 2 exceedances (undetermined source) are further evaluated using the Mann-Kendall test for trend. If there is not a statistically significant increasing trend for a constituent in a downgradient well, the exceedance is reclassified as a Type 1 exceedance—not attributable to the landfills.

For those parameters that do not have a Kentucky solid waste facility MCL, the same process is used. If a constituent without an MCL exceeds its historical background UTL and its current background UTL, it is evaluated further to identify the source of the exceedance, if possible. If the source of the exceedance cannot be identified, it is reported as a Type 2 exceedance—source undetermined. Type 2 exceedances (undetermined source) are further evaluated using the Mann-Kendall test for trend. If there is not a statistically significant increasing trend for a constituent in a downgradient well, the exceedance is reclassified as a Type 1 exceedance—not attributable to the landfills.

To calculate the UTL, the data are divided into censored (nondetects) and uncensored (detected) observations. The one-sided tolerance interval statistical test is conducted only on parameters that have at least one uncensored observation. Results of the one-sided tolerance interval statistical test are used to determine whether the data show a statistical exceedance in concentrations with respect to historical background concentrations (UTL).

For the statistical analysis of pH, a two-sided tolerance interval statistical test is conducted. The test well results are compared to both the UTL and LTL to determine if statistically significant deviations in concentrations exist with respect to background well data.

A stepwise list of the one-sided tolerance interval statistical procedures applied to the data is provided in Appendix D under Statistical Analysis Process. The statistical analysis was conducted separately for each parameter in each well. The MWs included in the statistical analyses are listed in Table 6.

Table 6. Monitoring Wells Included in Statistical Analysis^a

UCRS	URGA	LRGA
MW386	MW220 (background)	MW370
MW389 ^b	MW221	MW373
MW390	MW222	MW385
MW393	MW223	MW388
MW396°	MW224	MW392
	MW369	MW395 (background)
	MW372	MW397 (background)
	MW384	
	MW387	
	MW391	
	MW394 (background)	

^a Map showing the MW locations is shown on Figure 1.

2.1 STATISTICAL ANALYSIS OF GROUNDWATER DATA

Parameters requiring statistical analysis are summarized in Appendix D for each hydrological unit. A stepwise list for determining exceedances of statistically derived historical background concentrations is provided in Appendix D under Statistical Analysis Process. A comparison of the current quarter's results to the statistically derived historical background was conducted for parameters that do not have MCLs and also for those parameters whose concentrations exceed MCLs. Appendix G summarizes the occurrences (by well and by quarter) of exceedances of historical UTLs and MCL exceedances. The constituents that had exceedances of the statistically derived historical background UTL underwent additional statistical evaluation. The current quarter concentrations were compared to the current background UTL developed using the most recent eight quarters of data from wells identified as background in order to determine if the current downgradient well concentrations are consistent with current background values. Table 3 summarizes the constituents present in downgradient wells with historical UTL exceedances that are above the current UTL. Those constituents that have exceeded both the historical and current background UTLs in downgradient wells were further evaluated for increasing trends and are listed in Table 4.

2.1.1 Upper Continental Recharge System

In this quarter, 27 parameters, including those with MCLs, required statistical analysis in the UCRS. During the third quarter, oxidation-reduction potential, radium-226, and technetium-99 concentrations exceeded the respective historical UTL and are listed in Table 2. Oxidation-reduction potential and technetium-99 exceeded the current background UTL in downgradient UCRS well MW390 and are included in Table 5.

2.1.2 Upper Regional Gravel Aquifer

In this quarter, 29 parameters, including those with MCLs, required statistical analysis in the URGA. During the third quarter, calcium, COD, conductivity, dissolved solids, magnesium, oxidation-reduction potential, radium-226, sodium, sulfate, and technetium-99 displayed concentrations that exceeded their respective historical UTLs and are listed in Table 2. Calcium, conductivity, dissolved solids, magnesium, sulfate, and technetium-99 exceeded the current background UTL in downgradient URGA wells and are included in Table 3.

^b Well had insufficient water to permit a water sample for laboratory analysis.

^c In the same direction (relative to the landfill) as RGA wells considered to be background.

2.1.3 Lower Regional Gravel Aquifer

In this quarter, 29 parameters, including those with MCLs, required statistical analysis in the LRGA. During the third quarter, calcium, conductivity, dissolved solids, magnesium, oxidation-reduction potential, radium-226, sodium, sulfate, and technetium-99 displayed concentrations that exceeded their respective historical UTL and are listed in Table 2. Calcium, conductivity, dissolved solids, magnesium, radium-226, sodium, and sulfate exceeded the current background UTL in downgradient wells and are included in Table 3.

2.2 DATA VERIFICATION AND VALIDATION

Data verification is the process of comparing a data set against set standard or contractual requirements. In accordance with the approved Groundwater Monitoring Plan, (LATA Kentucky 2014), data verification is performed for 100% of the data. Data are flagged as necessary.

Data validation was performed on 100% of the organic, inorganic, and radiochemical analytical data for groundwater by a qualified individual independent from sampling, laboratory, project management, or other decision-making personnel. Data validation evaluates the laboratory adherence to analytical method requirements. Validation qualifiers are added by the independent validator and not the laboratory.

Field quality control samples are collected for each sampling event. Field blanks, rinseate blanks, and trip blanks are obtained to ensure quality of field and laboratory practices and data are reported in the Groundwater Sample Analysis tables in Appendix C. Laboratory quality control samples, such as matrix spikes, matrix spike duplicates, and method blanks, are performed by the laboratory. Both field and laboratory quality control sample results are reviewed as part of the data verification/validation process.

Data verification and validation results for this data set indicated that all data were considered usable.



3. PROFESSIONAL GEOLOGIST AUTHORIZATION

DOCUMENT IDENTIFICATION: C-746-S&T Landfills Third Quarter Calendar Year 2024

(July-September) Compliance Monitoring Report, Paducah

Gaseous Diffusion Plant, Paducah, Kentucky

(FRNP-RPT-0351/V3)

Stamped and signed pursuant to my authority as a duly registered geologist under the provisions of KRS Chapter 322A.

Registration of the selection of the sel

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4. REFERENCES

- FRNP (Four Rivers Nuclear Partnership, LLC) 2021. Surface Water Monitoring Plan for C-746-U and C-746-S&T Landfills Permit Number SW07300014, SW07300015, SW07300045, Paducah Gaseous Diffusion Plant, Paducah, Kentucky, Agency Interest Number 3059, Solid Waste Landfill Permit No. SW07300014, SW07300015, SW07300045, Technical Application, Attachment 24, Four Rivers Nuclear Partnership, LLC, Paducah, KY, March.
- LATA Kentucky (LATA Environmental Services of Kentucky, LLC) 2014. Groundwater Monitoring Plan for the Solid Waste Permitted Landfills (C-746-S Residential Landfill, C-746-T Inert Landfill, and C-746-U Contained Landfill) at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, PAD-PROJ-0139, Solid Waste Landfill Permit No. SW07300014, SW07300015, SW07300045, Technical Application, Attachment 25, LATA Environmental Services of Kentucky, LLC, Kevil, KY, June.



APPENDIX A

GROUNDWATER, SURFACE WATER, LEACHATE, AND METHANE MONITORING SAMPLE DATA REPORTING FORM



GROUNDWATER, SURFACE WATER, LEACHATE, AND METHANE MONITORING SAMPLE DATA REPORTING FORM

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET DEPARTMENT FOR ENVIRONMENTAL PROTECTION DIVISION OF WASTE MANAGEMENT SOLID WASTE BRANCH 14 REILLY ROAD FRANKFORT, KY 40601

Facility Name:	U.S. D	OE–Pac	ducah Gaseo	us Diffusion Plant	Activity:	C-746-S&T Landfills	
	(As officially shown on DWM Permit Face)			M Permit Face)			
Permit No:	SW0730 SW0730 SW0730	00015,	F.	inds/Unit No:	Quarter & Yea	3rd Qtr. CY 2024	
Please check the	following o	as appl	icable:				
Characte	rization	X	Quarterly	Semiannual	Annua	Assessment	
Please check app	olicable sub	mittal((s): X	Groundwater	X	Surface Water	
				Leachate	X	Methane Monitoring	
nours of making the ab report is NOT concertify under penal with a system design quiry of the perso	ty of law that the description or persons ef, true, accu	t this do te that q directly	ing statistical ion. Instruction cument and al ualified persor responsible for d complete. I a	analyses, direct comparisons for completing the formal attachments were prepared need properly gather and for gathering the information aware that there are significant.	son, or other similar in are attached. Do not ed under my direction evaluate the information, the information su	tion within forty-eight (48 techniques. Submitting the submit the instruction pages or supervision in accordance ion submitted. Based on multiple best of my submitted is, to the best of my submitting false information	
Myrna E. Redf Four Rivers Nu	, .		_				
April Ladd, Pad			Date				
U.S. Departmen	nt of Energ	gy					



APPENDIX B FACILITY INFORMATION SHEET



FACILITY INFORMATION SHEET

Sampling Date: Facility Name:	Groundwater: July 2024 Methane: August 2024 Surface Water: July 2024 U.S. DOE—Paducah Gase (As offi	eous Diffusion Plant		<u>McCracken</u>	Permit Nos.	SW07300014, SW07300015, SW07300045			
Site Address:	5600 Hobbs Road		il, Kentucky			42053			
	Street		City/State			Zip			
Phone No:	(270) 441-6800	Latitude:	N 37° 07' 37.	70"	Longitude:	W 88° 47' 55.41"			
	OWNER INFORMATION								
Facility Owner:	U.S. DOE, Joel Bradburne	e, Manager, Portsmouth	Paducah Pro	ject Office	Phone No:	(859) 219-4000			
Contact Person:	Bruce Ford	-			Phone No:	(270) 441-5357			
Contact Person Ti	Director, Environm tle: Four Rivers Nuclea								
Mailing Address:	5511 Hobbs Road	Kev	il, Kentucky			42053			
	Street		City/State			Zip			
Company:	Four Rivers Nuclear Par	SAMPLING PE THER THAN LANDFI tnership, LLC		ORATORY)	DL N	(270) 441 5775			
Contact Person:	Chris Skinner				Phone No:	(270) 441-5675			
Mailing Address:	5511 Hobbs Road Street	Kev	ril, Kentucky City/State			42053 Zip			
		LABORATORY		1					
Laboratory:	GEL Laboratories, LLC		La	ab ID No: K	Y90129				
Contact Person:	Valerie Davis				Phone No:	(843) 769-7391			
Mailing Address:	2040 Savage Road	Charlesto	on, South Car	rolina		29407			
	Street		City/State			Zip			
		LABORATORY	RECORD #2	2					
Laboratory:	N/A			Lab ID No:	N/A				
Contact Person:	N/A				Phone No:	N/A			
Mailing Address:	N/A								
	Street		City/State			Zip			
		LABORATORY	RECORD #3	3					
Laboratory:	N/A			Lab ID No:	N/A				
Contact Person:	N/A				Phone No:	N/A			
Mailing Address:	N/A								
Č	Street		City/State			Zip			



APPENDIX C GROUNDWATER SAMPLE ANALYSES AND LABORATORY REPORTS



 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: MW220 UP RGA Type: URGA Period: 3rd Quarter 2024

AKGWA Well Tag #: 8000-5201 SAMPLE ID: MW220SG4-24 Sample Type: REG

AKGWA Well Tag #:	8000-5201		SAMPLI	E ID:	MW220SG4-2	4 S	ample Ty	pe: REG	
Parameter	Qualifier	Result	Units	Reporting Limit	Date Collected	Counting Error (+/-)	TPU	Method	Validation
Bromide	W	0.261	mg/L	0.2	7/24/2024			SW846-9056A	=
Chloride	J	18.1	mg/L	250	7/24/2024			SW846-9056A	=
Fluoride	J	0.242	mg/L	4	7/24/2024			SW846-9056A	=
Nitrate as Nitrogen	J	1.06	mg/L	10	7/24/2024			SW846-9056A	=
Sulfate		21.6	mg/L	0.8	7/24/2024			SW846-9056A	=
Barometric Pressure Reading		30.15	Inches/Hg		7/24/2024				Х
Conductivity		417	μmhos/cm		7/24/2024				Х
Depth to Water		58.04	ft		7/24/2024				Х
Dissolved Oxygen		3.55	mg/L		7/24/2024				Х
Eh (approx)		392	mV		7/24/2024				Х
Н		6.23	Std Unit		7/24/2024				Х
emperature		62.8	deg F		7/24/2024				Х
urbidity		1.11	NTU		7/24/2024				Х
Aluminum	U	0.05	mg/L	0.05	7/24/2024			SW846-6020B	=
Antimony	U	0.003	mg/L	0.003	7/24/2024			SW846-6020B	=
Arsenic	U	0.005	mg/L	0.005	7/24/2024			SW846-6020B	=
Barium		0.204	mg/L	0.004	7/24/2024			SW846-6020B	=
Beryllium	U	0.0005	mg/L	0.0005	7/24/2024			SW846-6020B	=
Boron	J	0.00712	mg/L	0.015	7/24/2024			SW846-6020B	=
admium	U	0.001	mg/L	0.001	7/24/2024			SW846-6020B	=
Calcium		25.5	mg/L	0.2	7/24/2024			SW846-6020B	=
Chromium	J	0.00902	mg/L	0.01	7/24/2024			SW846-6020B	=
obalt	U	0.001	mg/L	0.001	7/24/2024			SW846-6020B	=
Copper	J	0.00194	mg/L	0.002	7/24/2024			SW846-6020B	=
ron	J	0.0385	mg/L	0.1	7/24/2024			SW846-6020B	=
ead	U	0.002	mg/L	0.002	7/24/2024			SW846-6020B	=
/Jagnesium		10.4	mg/L	0.03	7/24/2024			SW846-6020B	=
Manganese	J	0.00279	mg/L	0.005	7/24/2024			SW846-6020B	=
// Molybdenum	<u> </u>	0.00131	mg/L	0.001	7/24/2024			SW846-6020B	=
lickel		0.00649	mg/L	0.002	7/24/2024			SW846-6020B	=
Potassium		11	mg/L	0.3	7/24/2024			SW846-6020B	=
Rhodium	U	0.005	mg/L	0.005	7/24/2024			SW846-6020B	=
elenium	U	0.005	mg/L	0.005	7/24/2024			SW846-6020B	=
ilver	U	0.003	mg/L	0.003	7/24/2024			SW846-6020B	
Sodium		46	mg/L	0.001	7/24/2024			SW846-6020B	=
- Tantalum	U	0.005	mg/L	0.23	7/24/2024			SW846-6020B	=
Thallium	U	0.003	mg/L	0.003	7/24/2024			SW846-6020B	=
Jranium	U	0.002	mg/L	0.002	7/24/2024			SW846-6020B	 =
/anadium	U	0.0002	mg/L	0.0002	7/24/2024			SW846-6020B	=
inc	J	0.00543	mg/L	0.02	7/24/2024			SW846-6020B	=
Mercury	U	0.00343	mg/L	0.002				SW846-7470A	
Barium, Dissolved	U	0.0002	mg/L mg/L	0.0002	7/24/2024			SW846-7470A SW846-6020B	=
	1								J
Chromium, Dissolved	J	0.00844	mg/L	0.01	7/24/2024			SW846-6020B	J
Jranium, Dissolved	U	0.0002	mg/L	0.0002	7/24/2024	0.630	0.644	SW846-6020B	UJ
Radium-226	U	0.6	pCi/L	0.808	7/24/2024	0.639	0.641	AN-1418	=

Strontium-90	U	0.982	pCi/L	4.25	7/24/2024	2.4	2.41	EPA-905.0-M	=
Tritium Tack patient 00	U	58.2	pCi/L	252	7/24/2024	144	144	EPA-906.0-M	=
Technetium-99	U	2.79	pCi/L	17.7	7/24/2024	10.1	10.1	HASL 300, Tc-02- RC M	=
Thorium-230	U	0.155	pCi/L	1.71	7/24/2024	0.849	0.851	HASL 300, Th-01- RC M	=
Alpha activity	U	1.91	pCi/L	5.83	7/24/2024	3.2	3.22	SW846-9310	=
Beta activity		17.6	pCi/L	8.59	7/24/2024	6.7	7.31	SW846-9310	=
1,2-Dibromo-3-chloropropane	U	0.0189	ug/L	0.0189	7/24/2024			SW846-8011	=
1,1,1,2-Tetrachloroethane	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
1,1,1-Trichloroethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
1,1,2,2-Tetrachloroethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
1,1,2-Trichloroethane	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
1,1-Dichloroethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
1,1-Dichloroethene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
1,2,3-Trichloropropane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
1,2-Dibromoethane	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
1,2-Dichlorobenzene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
1,2-Dichloroethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
1,2-Dichloropropane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
1,4-Dichlorobenzene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
2-Butanone	U	5	ug/L	5	7/24/2024			SW846-8260D	=
2-Hexanone	UY2	5	ug/L	5	7/24/2024			SW846-8260D	=
4-Methyl-2-pentanone	UY2	5	ug/L	5	7/24/2024			SW846-8260D	=
Acetone	U	5	ug/L	5	7/24/2024			SW846-8260D	=
Acrolein	U	5	ug/L	5	7/24/2024			SW846-8260D	UJ
Acrylonitrile	U	5	ug/L	5	7/24/2024			SW846-8260D	UJ
Benzene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Bromochloromethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Bromodichloromethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Bromoform	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Bromomethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Carbon disulfide	U	5	ug/L	5	7/24/2024			SW846-8260D	=
Carbon tetrachloride	U	1	ug/L	1	7/24/2024			SW846-8260D	UJ
Chlorobenzene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
Chloroethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Chloroform	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Chloromethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
cis-1,2-Dichloroethene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
cis-1,3-Dichloropropene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Dibromochloromethane	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
Dibromomethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Ethylbenzene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
lodomethane	U	5	ug/L	5	7/24/2024			SW846-8260D	=
Methylene chloride	U	5	ug/L	5	7/24/2024			SW846-8260D	=
Styrene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	UJ
Tetrachloroethene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
Toluene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
Total Xylene	UY2	3	ug/L	3	7/24/2024			SW846-8260D	=
trans-1,2-Dichloroethene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
trans-1,3-Dichloropropene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
trans-1,4-Dichloro-2-butene	U	5	ug/L	5	7/24/2024			SW846-8260D	UJ
Trichloroethene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Trichlorofluoromethane	U	1		1	7/24/2024			SW846-8260D	=

Vinyl acetate	U	5	ug/L	5	7/24/2024	SW846-8260D =	:
Vinyl chloride	U	1	ug/L	1	7/24/2024	SW846-8260D =	:
Dissolved Solids		246	mg/L	10	7/24/2024	EPA-160.1 =	:
lodide	U	0.5	mg/L	0.5	7/24/2024	EPA-300.0 =	:
Chemical Oxygen Demand (COD)	J	13.3	mg/L	20	7/24/2024	EPA-410.4 =	:
Cyanide	U	0.2	mg/L	0.2	7/24/2024	SW846-9012B =	:
Total Organic Halides (TOX)	J	7.16	ug/L	10	7/24/2024	SW846-9020B =	:
Total Organic Carbon (TOC)	J	0.758	mg/L	2	7/24/2024	SW846-9060A =	:

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: MW221 SIDE RGA Type: URGA Period: 3rd Quarter 2024

AKGWA Well Tag #: 8000-5202 SAMPLE ID: MW221SG4-24 Sample Type: REG

AKGWA Well Tag #:	8000-5202		SAMPL	E ID:	MW221SG4-2	4 9	sample Ty	pe: <u>REG</u>	
Parameter	Qualifier	Result	Units	Reporting Limit	Date Collected	Counting Error (+/-)	TPU	Method	Validation
Bromide	W	0.623	mg/L	0.2	7/24/2024			SW846-9056A	=
Chloride	J	35	mg/L	250	7/24/2024			SW846-9056A	=
Fluoride	J	0.19	mg/L	4	7/24/2024			SW846-9056A	=
Nitrate as Nitrogen	J	0.931	mg/L	10	7/24/2024			SW846-9056A	=
Sulfate		16.1	mg/L	0.4	7/24/2024			SW846-9056A	=
Barometric Pressure Reading		30.14	Inches/Hg		7/24/2024				Х
Conductivity		396	μmhos/cm		7/24/2024				Х
Depth to Water		67.58	ft		7/24/2024				Х
Dissolved Oxygen		4.9	mg/L		7/24/2024				Х
Eh (approx)		439	mV		7/24/2024				Х
рН		6.22	Std Unit		7/24/2024				Х
Temperature		65.4	deg F		7/24/2024				Х
Turbidity		2.5	NTU		7/24/2024				Х
Aluminum	U	0.05	mg/L	0.05	7/24/2024			SW846-6020B	=
Antimony	U	0.003	mg/L	0.003	7/24/2024			SW846-6020B	=
Arsenic	U	0.005	mg/L	0.005	7/24/2024			SW846-6020B	=
Barium		0.213	mg/L	0.004	7/24/2024			SW846-6020B	=
Beryllium	U	0.0005	mg/L	0.0005	7/24/2024			SW846-6020B	=
Boron		0.0242	mg/L	0.015	7/24/2024			SW846-6020B	=
 Cadmium	U	0.001	mg/L	0.001	7/24/2024			SW846-6020B	=
Calcium		21.3	mg/L	0.2	7/24/2024			SW846-6020B	=
Chromium	J	0.00721	mg/L	0.01	7/24/2024			SW846-6020B	=
Cobalt	<u> </u>	0.00112	mg/L	0.001	7/24/2024			SW846-6020B	=
Copper		0.00329	mg/L	0.002	7/24/2024			SW846-6020B	=
Iron	U	0.1	mg/L	0.1	7/24/2024			SW846-6020B	=
Lead	U	0.002	mg/L	0.002	7/24/2024			SW846-6020B	=
Magnesium		9.39	mg/L	0.03	7/24/2024			SW846-6020B	=
Manganese		0.00541	mg/L	0.005	7/24/2024			SW846-6020B	=
Molybdenum		0.00654	mg/L	0.001	7/24/2024			SW846-6020B	=
Nickel		0.12	mg/L	0.002	7/24/2024			SW846-6020B	=
Potassium		2.32	mg/L	0.3	7/24/2024			SW846-6020B	
Rhodium	U	0.005	mg/L	0.005	7/24/2024			SW846-6020B	=
Selenium	U	0.005	mg/L	0.005	7/24/2024			SW846-6020B	=
Silver	U	0.003	mg/L	0.003	7/24/2024			SW846-6020B	 =
Sodium	0	45.3	mg/L	0.001	7/24/2024			SW846-6020B	
Tantalum	U	0.005	mg/L	0.25	7/24/2024			SW846-6020B	= =
Thallium	U	0.002	mg/L	0.002	7/24/2024			SW846-6020B	=
Uranium	U	0.0002	mg/L	0.0002	7/24/2024			SW846-6020B	=
Vanadium	U	0.02	mg/L	0.02	7/24/2024			SW846-6020B	=
Zinc	J	0.0104	mg/L	0.02	7/24/2024			SW846-6020B	=
Mercury	U	0.0002	mg/L	0.0002	7/24/2024			SW846-7470A	=
Barium, Dissolved		0.209	mg/L	0.004	7/24/2024			SW846-6020B	J
Chromium, Dissolved	J	0.00497	mg/L	0.01	7/24/2024			SW846-6020B	J
Uranium, Dissolved	U	0.0002	mg/L	0.0002	7/24/2024			SW846-6020B	UJ
Radium-226		1.07	pCi/L	0.756	7/24/2024	0.771	0.775	AN-1418	=

			1		- 4 4				
Strontium-90	U	1.01	pCi/L	3.47	7/24/2024	1.96	1.97	EPA-905.0-M	=
Tritium	U	92.5	pCi/L	247	7/24/2024	144	145	EPA-906.0-M	=
Fechnetium-99	U	10.1	pCi/L	17.9	7/24/2024	10.7	10.7	HASL 300, Tc-02- RC M	=
horium-230	U	-0.582	pCi/L	2.14	7/24/2024	0.694	0.694	HASL 300, Th-01- RC M	=
Alpha activity	U	5.4	pCi/L	9.4	7/24/2024	5.84	5.91	SW846-9310	=
eta activity	U	7.08	pCi/L	8.26	7/24/2024	5.38	5.51	SW846-9310	=
,2-Dibromo-3-chloropropane	U	0.0187	ug/L	0.0187	7/24/2024			SW846-8011	=
.,1,1,2-Tetrachloroethane	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
.,1,1-Trichloroethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
.,1,2,2-Tetrachloroethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
.,1,2-Trichloroethane	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
,1-Dichloroethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
,1-Dichloroethene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
.,2,3-Trichloropropane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
L,2-Dibromoethane	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
,2-Dichlorobenzene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
.,2-Dichloroethane	U	1	ug/L	1	7/24/2024			SW846-8260D	
L,2-Dichloropropane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
.,4-Dichlorobenzene	U	1	ug/L	1	7/24/2024			SW846-8260D	
!-Butanone	U	5	ug/L ug/L	5	7/24/2024			SW846-8260D	
Butanone	UY2	5	ug/L ug/L	5	7/24/2024			SW846-8260D	
	UY2	5		5	7/24/2024			SW846-8260D	
-Methyl-2-pentanone	J	2.45	ug/L ug/L	5	7/24/2024			SW846-8260D SW846-8260D	
Acrolein	U	5	ug/L	5	7/24/2024			SW846-8260D	UJ
Acrylonitrile	U	5	ug/L	5	7/24/2024			SW846-8260D	UJ
enzene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
romochloromethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Promodichloromethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Bromoform	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Bromomethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Carbon disulfide	U	5	ug/L	5	7/24/2024			SW846-8260D	=
Carbon tetrachloride	U	1	ug/L	1	7/24/2024			SW846-8260D	UJ
Chlorobenzene	UY2	1		1	7/24/2024			SW846-8260D	=
Chloroethane	U	1		1	7/24/2024			SW846-8260D	=
Chloroform	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Chloromethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
is-1,2-Dichloroethene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
is-1,3-Dichloropropene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Dibromochloromethane	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
Dibromomethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
thylbenzene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
odomethane	U	5	ug/L	5	7/24/2024			SW846-8260D	=
Methylene chloride	U	5	ug/L	5	7/24/2024			SW846-8260D	=
tyrene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	UJ
etrachloroethene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
oluene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
otal Xylene	UY2	3	ug/L	3	7/24/2024			SW846-8260D	=
rans-1,2-Dichloroethene	U	1	ug/L	1	7/24/2024		-	SW846-8260D	=
rans-1,3-Dichloropropene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
rans-1,4-Dichloro-2-butene	U	5	ug/L	5	7/24/2024			SW846-8260D	UJ
richloroethene	J	0.35	ug/L	1	7/24/2024			SW846-8260D	=
	U	1	ug/L	1	7/24/2024			SW846-8260D	=

Vinyl acetate	U	5	ug/L	5	7/24/2024	SW846-8260D =
Vinyl chloride	U	1	ug/L	1	7/24/2024	SW846-8260D =
Dissolved Solids		210	mg/L	10	7/24/2024	EPA-160.1 =
lodide	U	0.5	mg/L	0.5	7/24/2024	EPA-300.0 =
Chemical Oxygen Demand (COD)	U	20	mg/L	20	7/24/2024	EPA-410.4 =
Cyanide	U	0.2	mg/L	0.2	7/24/2024	SW846-9012B =
Total Organic Halides (TOX)	J	3.64	ug/L	10	7/24/2024	SW846-9020B =
Total Organic Carbon (TOC)	J	0.652	mg/L	2	7/24/2024	SW846-9060A =

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: MW222 SIDE RGA Type: URGA Period: 3rd Quarter 2024

AKGWA Well Tag #: 8000-5242 SAMPLE ID: MW222SG4-24 Sample Type: REG

AKGWA Well Tag #:	8000-5242		SAMPLI	E ID:	MW222SG4-2	4	Sample Ty	pe: REG	5A =
Parameter	Qualifier	Result	Units	Reporting Limit	Date Collected	Counting Error (+/-)	TPU	Method	Validation
Bromide	· · · · · · · · · · · · · · · · · · ·	0.398	mg/L	0.2	7/25/2024			SW846-9056A	
Chloride	J	32.3	mg/L	250	7/25/2024			SW846-9056A	=
luoride	*J	0.223	mg/L	4	7/25/2024			SW846-9056A	=
Nitrate as Nitrogen	J	1.02	mg/L	10	7/25/2024			SW846-9056A	=
Gulfate		12.5	mg/L	0.4	7/25/2024			SW846-9056A	=
Barometric Pressure Reading		30.16	Inches/Hg		7/25/2024				Х
Conductivity		389	μmhos/cm		7/25/2024				Х
Pepth to Water		71.31	ft		7/25/2024				Х
Dissolved Oxygen		4.32	mg/L		7/25/2024				Х
ih (approx)		383	mV		7/25/2024				Х
iH		6.1	Std Unit		7/25/2024				Х
emperature		64.6	deg F		7/25/2024				Х
urbidity		0	NTU		7/25/2024				Х
lluminum	U	0.05	mg/L	0.05	7/25/2024			SW846-6020B	
Intimony	U	0.003	mg/L	0.003	7/25/2024			SW846-6020B	=
Arsenic	U	0.005	mg/L	0.005	7/25/2024			SW846-6020B	=
Barium		0.281	mg/L	0.004	7/25/2024			SW846-6020B	=
Beryllium	U	0.0005	mg/L	0.0005	7/25/2024			SW846-6020B	=
Soron		0.0129	mg/L	0.015	7/25/2024			SW846-6020B	=
admium	U	0.001	mg/L	0.001	7/25/2024			SW846-6020B	=
alcium		21.1	mg/L	0.2	7/25/2024			SW846-6020B	=
Chromium	J	0.00349	mg/L	0.01	7/25/2024			SW846-6020B	=
obalt	J	0.000516	mg/L	0.001	7/25/2024			SW846-6020B	
Copper	J	0.00108	mg/L	0.002	7/25/2024			SW846-6020B	
on	U	0.1	mg/L	0.1	7/25/2024			SW846-6020B	
ead	U	0.002	mg/L	0.002	7/25/2024			SW846-6020B	
/lagnesium		9.33	mg/L	0.03	7/25/2024			SW846-6020B	
Manganese		0.00769	mg/L	0.005	7/25/2024			SW846-6020B	
Nolybdenum		0.00484	mg/L	0.001	7/25/2024			SW846-6020B	
lickel		0.0446	mg/L	0.002	7/25/2024			SW846-6020B	
otassium		0.808	mg/L	0.3	7/25/2024			SW846-6020B	
thodium	U	0.005	mg/L	0.005	7/25/2024			SW846-6020B	
elenium	J	0.00173	mg/L	0.005	7/25/2024			SW846-6020B	
ilver	U	0.001	mg/L	0.003	7/25/2024			SW846-6020B	
odium	<u> </u>	46.3	mg/L	0.001	7/25/2024			SW846-6020B	=
antalum	U	0.005	mg/L	0.005	7/25/2024			SW846-6020B	=
hallium	U	0.003	mg/L	0.003				SW846-6020B	=
Iranium Iranium	U	0.002	mg/L	0.002	7/25/2024			SW846-6020B	
ranium 'anadium	J	0.0002	mg/L mg/L	0.0002	7/25/2024 7/25/2024			SW846-6020B	= =
inc	J	0.00474	mg/L	0.02				SW846-6020B	
	1	0.0083	mg/L	0.002	7/25/2024 7/25/2024			SW846-7470A	=
Mercury	U								=
arium, Dissolved	11	0.279	mg/L	0.004	7/25/2024			SW846-6020B	J
hromium, Dissolved	U	0.01	mg/L	0.01	7/25/2024			SW846-6020B	UJ
Jranium, Dissolved	U	0.0002	mg/L	0.0002	7/25/2024	0.30	0.00	SW846-6020B	UJ
Radium-226	U	0.168	pCi/L	0.599	7/25/2024	0.38	0.38	AN-1418	=

Strontium-90	U	-2.03	pCi/L	5.34	7/25/2024	2.6	2.6	EPA-905.0-M	=
Tritium	U	-9.46	pCi/L	285	7/25/2024	158	158	EPA-906.0-M	=
Technetium-99	U	5.16	pCi/L	17.9	7/25/2024	10.4	10.4	HASL 300, Tc-02- RC M	=
Thorium-230	U	0.888	pCi/L	1.51	7/25/2024	1.03	1.04	HASL 300, Th-01- RC M	=
Alpha activity	U	2.84	pCi/L	6.15	7/25/2024	3.67	3.7	SW846-9310	UJ
Beta activity	U	-2.94	pCi/L	13.1	7/25/2024	6.88	6.88	SW846-9310	=
1,2-Dibromo-3-chloropropane	U	0.0191	ug/L	0.0191	7/25/2024			SW846-8011	=
1,1,1,2-Tetrachloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,1,1-Trichloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,1,2,2-Tetrachloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,1,2-Trichloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,1-Dichloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,1-Dichloroethene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,2,3-Trichloropropane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,2-Dibromoethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,2-Dichlorobenzene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,2-Dichloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,2-Dichloropropane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,4-Dichlorobenzene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
2-Butanone	U	5	ug/L	5	7/25/2024			SW846-8260D	=
2-Hexanone	U	5	ug/L	5	7/25/2024			SW846-8260D	=
4-Methyl-2-pentanone	U	5	ug/L	5	7/25/2024			SW846-8260D	=
Acetone	U	5	ug/L	5	7/25/2024			SW846-8260D	=
Acrolein	U	5	ug/L	5	7/25/2024			SW846-8260D	UJ
Acrylonitrile	U	5	ug/L	5	7/25/2024			SW846-8260D	UJ
Benzene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Bromochloromethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Bromodichloromethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Bromoform	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Bromomethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Carbon disulfide	U	5	ug/L	5	7/25/2024			SW846-8260D	=
Carbon tetrachloride	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Chlorobenzene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Chloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Chloroform	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Chloromethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
cis-1,2-Dichloroethene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
cis-1,3-Dichloropropene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Dibromochloromethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Dibromomethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Ethylbenzene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
lodomethane	U	5	ug/L	5	7/25/2024			SW846-8260D	=
Methylene chloride	U	5	ug/L	5	7/25/2024			SW846-8260D	=
Styrene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Tetrachloroethene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Toluene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Total Xylene	U	3	ug/L	3	7/25/2024	-		SW846-8260D	=
trans-1,2-Dichloroethene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
trans-1,3-Dichloropropene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
trans-1,4-Dichloro-2-butene	U	5	ug/L	5	7/25/2024			SW846-8260D	UJ
Trichloroethene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Trichlorofluoromethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=

Vinyl acetate	U	5	ug/L	5	7/25/2024	SW846-8260D =
Vinyl chloride	U	1	ug/L	1	7/25/2024	SW846-8260D =
Dissolved Solids		218	mg/L	10	7/25/2024	EPA-160.1 =
lodide	U	0.5	mg/L	0.5	7/25/2024	EPA-300.0 =
Chemical Oxygen Demand (COD)	U	20	mg/L	20	7/25/2024	EPA-410.4 =
Cyanide	U	0.2	mg/L	0.2	7/25/2024	SW846-9012B =
Total Organic Halides (TOX)		17.1	ug/L	10	7/25/2024	SW846-9020B =
Total Organic Carbon (TOC)	J	0.395	mg/L	2	7/25/2024	SW846-9060A =

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: MW223 SIDE RGA Type: URGA Period: 3rd Quarter 2024

AKGWA Well Tag #: 8000-5243 SAMPLE ID: MW223SG4-24 Sample Type: REG

AKGWA Well Tag #:	8000-5243		SAMPLI	E ID:	MW223SG4-2	4	Sample Type: REG		= = = = = = = = = = = = = = = = = = =
Parameter	Qualifier	Result	Units	Reporting Limit	Date Collected	Counting Error (+/-)	TPU	Method	Validation
Bromide	-	0.405	mg/L	0.2	7/25/2024			SW846-9056A	=
Chloride	J	35.9	mg/L	250	7/25/2024			SW846-9056A	=
Fluoride	*J	0.202	mg/L	4	7/25/2024			SW846-9056A	=
Nitrate as Nitrogen	J	0.897	mg/L	10	7/25/2024			SW846-9056A	=
Sulfate		14.5	mg/L	0.4	7/25/2024			SW846-9056A	=
Barometric Pressure Reading		30.15	Inches/Hg		7/25/2024				Х
Conductivity		396	μmhos/cm		7/25/2024				Х
Depth to Water		70.44	ft		7/25/2024				Х
Dissolved Oxygen		2.41	mg/L		7/25/2024				Х
Eh (approx)		419	mV		7/25/2024				Х
oH		6.03	Std Unit		7/25/2024				Х
emperature		63.7	deg F		7/25/2024				Х
urbidity		3.33	NTU		7/25/2024				Х
lluminum	U	0.05	mg/L	0.05	7/25/2024			SW846-6020B	
Antimony	U	0.003	mg/L	0.003	7/25/2024			SW846-6020B	
Arsenic	U	0.005	mg/L	0.005	7/25/2024			SW846-6020B	=
Barium		0.241	mg/L	0.004	7/25/2024			SW846-6020B	=
Beryllium	U	0.0005	mg/L	0.0005	7/25/2024			SW846-6020B	=
Boron	J	0.0134	mg/L	0.015	7/25/2024			SW846-6020B	=
Cadmium	U	0.001	mg/L	0.001	7/25/2024			SW846-6020B	=
Calcium		23.4	mg/L	0.2	7/25/2024			SW846-6020B	=
Chromium		0.0187	mg/L	0.01	7/25/2024			SW846-6020B	=
Cobalt		0.00307	mg/L	0.001	7/25/2024			SW846-6020B	=
Copper	J	0.0015	mg/L	0.002	7/25/2024			SW846-6020B	=
ron		0.277	mg/L	0.1	7/25/2024			SW846-6020B	
ead	U	0.002	mg/L	0.002	7/25/2024			SW846-6020B	=
/Jagnesium		9.96	mg/L	0.03	7/25/2024			SW846-6020B	=
Manganese		0.029	mg/L	0.005	7/25/2024			SW846-6020B	=
Лоlybdenum		0.00323	mg/L	0.001	7/25/2024			SW846-6020B	=
lickel		0.631	mg/L	0.002	7/25/2024			SW846-6020B	=
otassium		1.18	mg/L	0.3	7/25/2024			SW846-6020B	=
thodium	U	0.005	mg/L	0.005	7/25/2024			SW846-6020B	=
elenium	U	0.005	mg/L	0.005	7/25/2024			SW846-6020B	=
ilver	U	0.001	mg/L	0.003	7/25/2024			SW846-6020B	=
odium		46.2	mg/L	0.25	7/25/2024			SW846-6020B	=
antalum	U	0.005	mg/L	0.005	7/25/2024			SW846-6020B	=
hallium	U	0.003	mg/L	0.003	7/25/2024			SW846-6020B	=
Jranium Jranium	U	0.002	mg/L	0.002	7/25/2024			SW846-6020B	=
/anadium	J	0.0002	mg/L	0.0002	7/25/2024			SW846-6020B	=
inc	J	0.00510	mg/L	0.02	7/25/2024			SW846-6020B	=
		0.00303	mg/L	0.002				SW846-7470A	
Mercury Parium, Dissolved	U	0.0002		0.0002	7/25/2024 7/25/2024			SW846-7470A SW846-6020B	=
· · · · · · · · · · · · · · · · · · ·			mg/L						J
Chromium, Dissolved		0.0157	mg/L	0.01	7/25/2024			SW846-6020B	J
Jranium, Dissolved	U	0.0002	mg/L	0.0002	7/25/2024	0.444	0.445	SW846-6020B	UJ -
Radium-226	U	0.241	pCi/L	0.692	7/25/2024	0.444	0.445	AN-1418	=

Strontium-90	U	-0.666	pCi/L	4.59	7/25/2024	2.29	2.29	EPA-905.0-M	=
Fritium	U	41	pCi/L	288	7/25/2024	163	164	EPA-906.0-M	=
echnetium-99	U	8.67	pCi/L	18.6	7/25/2024	11	11	HASL 300, Tc-02- RC M	=
horium-230	U	-0.101	pCi/L	1.49	7/25/2024	0.621	0.621	HASL 300, Th-01- RC M	=
Alpha activity	U	1.68	pCi/L	7.27	7/25/2024	3.78	3.79	SW846-9310	UJ
eta activity	U	9.73	pCi/L	10.2	7/25/2024	6.58	6.78	SW846-9310	=
,2-Dibromo-3-chloropropane	U	0.0187	ug/L	0.0187	7/25/2024			SW846-8011	=
,1,1,2-Tetrachloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
,1,1-Trichloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
,1,2,2-Tetrachloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
,1,2-Trichloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
,1-Dichloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
,1-Dichloroethene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
,2,3-Trichloropropane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
,,2-Dibromoethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
,2-Dichlorobenzene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
,2-Dichloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
,2-Dichloropropane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
,4-Dichlorobenzene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
-Butanone	U	5	ug/L	5	7/25/2024			SW846-8260D	=
-Hexanone	U	5	ug/L	5	7/25/2024			SW846-8260D	=
-Methyl-2-pentanone	U	5	ug/L	5	7/25/2024			SW846-8260D	=
cetone	U	5	ug/L	5	7/25/2024			SW846-8260D	=
crolein	U	5	ug/L	5	7/25/2024			SW846-8260D	UJ
crylonitrile	U	5	ug/L	5	7/25/2024			SW846-8260D	UJ
enzene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
romochloromethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
romodichloromethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
romoform	U	1	ug/L	1	7/25/2024			SW846-8260D	=
romomethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Carbon disulfide	U	5	ug/L	5	7/25/2024			SW846-8260D	=
Carbon tetrachloride	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Chlorobenzene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Chloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Chloroform	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Chloromethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
is-1,2-Dichloroethene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
is-1,3-Dichloropropene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
ibromochloromethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
ibromomethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
thylbenzene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
odomethane	U	5	ug/L	5	7/25/2024			SW846-8260D	=
1ethylene chloride	U	5	ug/L	5	7/25/2024			SW846-8260D	=
tyrene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
etrachloroethene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
oluene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
otal Xylene	U	3	ug/L	3	7/25/2024			SW846-8260D	=
rans-1,2-Dichloroethene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
rans-1,3-Dichloropropene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
rans-1,4-Dichloro-2-butene	U	5	ug/L	5	7/25/2024			SW846-8260D	UJ
richloroethene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
richlorofluoromethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=

Vinyl acetate	U	5	ug/L	5	7/25/2024	SW846-8260D =
Vinyl chloride	U	1	ug/L	1	7/25/2024	SW846-8260D =
Dissolved Solids		227	mg/L	10	7/25/2024	EPA-160.1 =
lodide	U	0.5	mg/L	0.5	7/25/2024	EPA-300.0 =
Chemical Oxygen Demand (COD)	U	20	mg/L	20	7/25/2024	EPA-410.4 =
Cyanide	U	0.2	mg/L	0.2	7/25/2024	SW846-9012B =
Total Organic Halides (TOX)	J	7.18	ug/L	10	7/25/2024	SW846-9020B =
Total Organic Carbon (TOC)	J	0.455	mg/L	2	7/25/2024	SW846-9060A =

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: MW224 SIDE RGA Type: URGA Period: 3rd Quarter 2024

AKGWA Well Tag #: 8000-5244 SAMPLE ID: MW224DSG4-24 Sample Type: FR

ANGWA WEII Tag #.	8000-5244		SAIVIPLE ID:		MW224DSG4-24		Sample Type: FR		
Parameter	Qualifier	Result	Units	Reporting Limit	Date Collected	Counting Error (+/-)	TPU	Method	Validation
Bromide		0.327	mg/L	0.2	7/25/2024	• • •		SW846-9056A	=
Chloride	J	24.8	mg/L	250	7/25/2024			SW846-9056A	=
Fluoride	*J	0.262	mg/L	4	7/25/2024			SW846-9056A	=
Nitrate as Nitrogen		0.979	mg/L	10	7/25/2024			SW846-9056A	=
Sulfate		19.2	mg/L	0.4	7/25/2024			SW846-9056A	=
Aluminum	U	0.05	mg/L	0.05	7/25/2024			SW846-6020B	=
Antimony	U	0.003	mg/L	0.003	7/25/2024			SW846-6020B	=
Arsenic	U	0.005	mg/L	0.005	7/25/2024			SW846-6020B	=
Barium		0.234	mg/L	0.004	7/25/2024			SW846-6020B	=
Beryllium	U	0.0005	mg/L	0.0005	7/25/2024			SW846-6020B	=
Boron		0.034	mg/L	0.015	7/25/2024			SW846-6020B	=
Cadmium	U	0.001	mg/L	0.001	7/25/2024			SW846-6020B	=
Calcium		25.8	mg/L	0.2	7/25/2024			SW846-6020B	=
Chromium	J	0.00406	mg/L	0.01	7/25/2024			SW846-6020B	=
Cobalt	U	0.001	mg/L	0.001	7/25/2024			SW846-6020B	=
Copper		0.00102	mg/L	0.002	7/25/2024			SW846-6020B	=
Iron		0.0334	mg/L	0.1	7/25/2024			SW846-6020B	=
Lead	U	0.002	mg/L	0.002	7/25/2024			SW846-6020B	=
Magnesium		11.4	mg/L	0.03	7/25/2024			SW846-6020B	=
Manganese		0.0083	mg/L	0.005	7/25/2024			SW846-6020B	=
Molybdenum	J	0.000967	mg/L	0.001	7/25/2024			SW846-6020B	=
Nickel	•	0.0101	mg/L	0.002	7/25/2024			SW846-6020B	=
Potassium		1.04	mg/L	0.3	7/25/2024			SW846-6020B	=
Rhodium	U	0.005	mg/L	0.005	7/25/2024			SW846-6020B	=
Selenium	U	0.005	mg/L	0.005	7/25/2024			SW846-6020B	=
Silver	U	0.001	mg/L	0.001	7/25/2024			SW846-6020B	=
Sodium		58.3	mg/L	2.5	7/25/2024			SW846-6020B	=
Tantalum	U	0.005	mg/L	0.005	7/25/2024			SW846-6020B	=
Thallium	U	0.002	mg/L	0.002	7/25/2024			SW846-6020B	=
Uranium	U	0.0002	mg/L	0.0002	7/25/2024			SW846-6020B	=
Vanadium	J	0.00354	mg/L	0.02	7/25/2024			SW846-6020B	=
Zinc	U	0.02	mg/L	0.02	7/25/2024			SW846-6020B	=
Mercury	J	0.000121		0.0002	7/25/2024			SW846-7470A	=
Barium, Dissolved	· · · · · · · · · · · · · · · · · · ·	0.233	mg/L	0.004	7/25/2024			SW846-6020B	J
Chromium, Dissolved	U	0.01	mg/L	0.01	7/25/2024			SW846-6020B	UJ
Uranium, Dissolved	U	0.0002	mg/L	0.0002	7/25/2024			SW846-6020B	UJ
Radium-226	U	0.113	pCi/L	0.338	7/25/2024	0.313	0.313	AN-1418	=
Strontium-90	U	-0.589	pCi/L	5.18	7/25/2024	2.73	2.73	EPA-905.0-M	=
Tritium	U	63.2	pCi/L	296	7/25/2024	169	170	EPA-906.0-M	=
Technetium-99	U	5.55	pCi/L	18.7	7/25/2024	10.9	10.9	HASL 300, Tc-02 RC M	
Thorium-230	U	1.33	pCi/L	1.86	7/25/2024	1.32	1.34	HASL 300, Th-01	l- =
Alpha activity	U	-0.292	pCi/L	7.43	7/25/2024	3.09	3.09	SW846-9310	UJ
Beta activity	U	7.38	pCi/L	8.68	7/25/2024	5.55	5.69	SW846-9310	=

1.11.21 Friedrocentame	1,2-Dibromo-3-chloropropane	U	0.0192	ug/L	0.0192	7/25/2024	SW846-8011	=
1.1.1.3.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1	· · · · · · · · · · · · · · · · · · ·							
1.1.2.2 Trickhorenchane								
1,1,2-Principocethane								
1.1.Dichloroschane						• •		
1.4.Dehthoroscheme								
1,2-3-Irichloropropane								
1.2 Dibromoethane	-							
1.2 Dichlorochame	· · · · · · · · · · · · · · · · · · ·							
1,2-Dichloropropane	·							
1,4-Dichloropropane	- 							
1.4-Dichlorobentene	-							
2-Hukanone U S ug/L S 7/25/2024 SW846-82600 = 2-Hekanone U S ug/L S 7/25/2024 SW846-82600 = Acetone U S ug/L S 7/25/2024 SW846-82600 U	· · · · · · · · · · · · · · · · · · ·							
2-Hexanone U S ug/L S 7/25/2024 SW846-8260D =	-							
Amethyl-2-pentanone U 5 ug/L 5 7/25/2024 SW846-82600 = Acetone U 5 ug/L 5 7/25/2024 SW846-82600 = Acetone U 5 ug/L 5 7/25/2024 SW846-82600 UJ Acrylonitrile U 5 ug/L 5 7/25/2024 SW846-82600 UJ Acrylonitrile U 1 1 ug/L 1 7/25/2024 SW846-82600 UJ Benzene U 1 1 ug/L 1 7/25/2024 SW846-82600 UJ Benzene U 1 1 ug/L 1 7/25/2024 SW846-82600 = Bromodichromethane U 1 ug/L 1 7/25/2024 SW846-82600 = Carbon disulfide U 5 ug/L 5 7/25/2024 SW846-82600 = Carbon disulfide U 1 1 ug/L 1 7/25/2024 SW846-82600 = Carbon disulfide U 1 1 ug/L 1 7/25/2024 SW846-82600 = Carbon disulfide U 1 1 ug/L 1 7/25/2024 SW846-82600 = Carbon disulfide U 1 ug/L 1 7/25/2024 SW846-82600 = Chlorotehane U 1 ug/L 1 7/25/2024 SW846-82600 = Cu 1 ug/L 1 Ug/L 1 7/25/2024 SW846-82600	2-Butanone						SW846-8260D	=
Acetone U 5 ug/L 5 7/25/2024 SW846-82600 = Acrolein U 5 ug/L 5 7/25/2024 SW846-82600 U Acrolein U 5 ug/L 5 7/25/2024 SW846-82600 U Benzene U 1 ug/L 1 7/25/2024 SW846-82600 = Bromochioromethane U 1 ug/L 1 7/25/2024 SW846-82600 = Carbon Istrachoride U 1 ug/L 1 7/25/2024 SW846-82600 = Carbon Istrachoride U 1 ug/L 1 7/25/2024 SW846-82600 = Carbon Istrachoride U 1 ug/L 1 7/25/2024 SW846-82600 = Chloroforenane U 1 ug/L 1 7/25/2024 SW846-82600 = Chloroformene U 1 ug/L 1 7/25/2024 SW846-82600 = Chloromethane U 1 ug/L 1 7/25/2024 SW846-82600 = Cis-1,2-Dichloropropene U 1 ug/L 1 7/25/2024 S	2-Hexanone						SW846-8260D	=
Acrolein U 5 ug/L 5 7/25/2024 SW846-8260D UJ Acryolntrile U 5 ug/L 5 7/25/2024 SW846-8260D UJ Acryolntrile U 5 ug/L 1 7/25/2024 SW846-8260D UJ Bromochloromethane U 1 ug/L 1 7/25/2024 SW846-8260D = Bromochloromethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Bromochloromethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Bromochloromethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Bromochloromethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Bromochloromethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Bromochloromethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Carbon disulfide U 5 ug/L 5 7/25/2024 SW846-8260D = Carbon disulfide U 1 ug/L 1 7/25/2024 SW846-8260D = Carbon tetrachloride U 1 ug/L 1 7/25/2024 SW846-8260D = Chlorobenzene U 1 ug/L 1 7/25/2024 SW846-8260D = Chlorobenzene U 1 ug/L 1 7/25/2024 SW846-8260D = Chlorobenzene U 1 ug/L 1 7/25/2024 SW846-8260D = Chlorothane U 1 ug/L 1 7/25/2024 SW846-8260D = Chlorothane U 1 ug/L 1 7/25/2024 SW846-8260D = Chloromethane U 1 ug/L 1 7/25/2024	4-Methyl-2-pentanone	U	5	ug/L	5	7/25/2024	SW846-8260D	=
Acrylonitrile U 5 ug/L 5 7/25/2024 SW846-8260D U Benzene U 1 ug/L 1 7/25/2024 SW846-8260D = Bromodichoromethane U 1 ug/L 1 7/25/2024 SW846-8260D = Bromoficm U 1 ug/L 1 7/25/2024 SW846-8260D = Bromoficm U 1 ug/L 1 7/25/2024 SW846-8260D = Bromoficm U 1 ug/L 1 7/25/2024 SW846-8260D = Carbon disulfide U 1 ug/L 1 7/25/2024 SW846-8260D = Chlorobenzene U 1 ug/L 1 7/25/2024 SW846-8260D = Chloroform U 1 ug/L 1 7/25/2024 SW846-8260D = Chloroform U 1 ug/L 1 7/25/2024 SW846-8260D = <t< td=""><td>Acetone</td><td>U</td><td>5</td><td>ug/L</td><td>5</td><td>7/25/2024</td><td>SW846-8260D</td><td>=</td></t<>	Acetone	U	5	ug/L	5	7/25/2024	SW846-8260D	=
Benzene U 1 1 ug/L 1 7/25/2024 SW846-8260D = Bromochloromethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Bromochloromethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Bromochloromethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Bromomethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Bromomethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Bromomethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Carbon disulfide U 5 ug/L 5 7/25/2024 SW846-8260D = Carbon disulfide U 1 1 ug/L 1 7/25/2024 SW846-8260D = Carbon tetrachloride U 1 1 ug/L 1 7/25/2024 SW846-8260D = Chlorobenzene U 1 1 ug/L 1 7/25/2024 SW846-8260D = Chlorotethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Chlorotethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Chlorotethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Chloromethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Chloromethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Chloromethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Chloromethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Cis-1,3-Dichloropropene U 1 ug/L 1 7/25/2024 SW846-8260D = Cis-1,3-Dichloropropene U 1 ug/L 1 7/25/2024 SW846-8260D = Cis-1,3-Dichloropropene U 1 ug/L 1 7/25/2024 SW846-8260D = Ciblromomethane U 1 ug/L 1 7/25/2024 SW846-8260D = Citrachloroethene U 1 ug/L 1 7/25/2024 SW846-8260D = Citr	Acrolein	U	5	ug/L	5	7/25/2024	SW846-8260D	UJ
Bromochloromethane	Acrylonitrile	U	5	ug/L	5	7/25/2024	SW846-8260D	UJ
Bromodichloromethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Bromoform U 1 1 ug/L 1 7/25/2024 SW846-8260D = Bromomethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Carbon disulfide U 5 ug/L 5 7/25/2024 SW846-8260D = Carbon disulfide U 1 1 ug/L 1 7/25/2024 SW846-8260D = Carbon disulfide U 1 1 ug/L 1 7/25/2024 SW846-8260D = Carbon tetrachloride U 1 1 ug/L 1 7/25/2024 SW846-8260D = Chlorobenzene U 1 1 ug/L 1 7/25/2024 SW846-8260D = Chlorotethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Chlorotethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Chlorotethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Chlorotethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Chlorotethane U 1 ug/L 1 7/25/2024 SW846-8260D = Chlorotethane U 1 ug/L 1 7/25/2024 SW846-8260D = Chlorotethane U 1 ug/L 1 7/25/2024 SW846-8260D = Cis-1,2-Dichlorotethene U 1 ug/L 1 7/25/2024 SW846-8260D = Cis-1,3-Dichloromethane U 1 ug/L 1 7/25/2024 SW846-8260D = Ciblromonethane U 1 ug/L 1 7/25/2024 SW846-8260D = Ciblromonethane U 1 ug/L 1 7/25/2024 SW846-8260D = Ciblromonethane U 1 ug/L 1 7/25/2024 SW846-8260D = Cithylbenzene U 1 ug/L 1 7/25/2024 SW846-8260D = Citrachlorotethene U 1 ug/L 1 7/25/2024 SW846-8260D	Benzene	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Bromoform U 1 ug/L 1 7/25/2024 SW846-8260D = Bromomethane U 1 ug/L 1 7/25/2024 SW846-8260D = Carbon distlifide U 5 ug/L 5 7/25/2024 SW846-8260D = Carbon tetrachloride U 1 ug/L 1 7/25/2024 SW846-8260D = Carbon tetrachloride U 1 ug/L 1 7/25/2024 SW846-8260D = Chlorobenzene U 1 1 ug/L 1 7/25/2024 SW846-8260D = Chlorobenzene U 1 1 ug/L 1 7/25/2024 SW846-8260D = Chlorobenzene U 1 1 ug/L 1 7/25/2024 SW846-8260D = Chloromethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Chloromethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Chloromethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Chloromethane U 1 ug/L 1 7/25/2024 SW846-8260D = Chlorometha	Bromochloromethane	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Bromomethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Carbon disulfide U 5 ug/L 5 7/25/2024 SW846-8260D = Carbon disulfide U 1 1 ug/L 1 7/25/2024 SW846-8260D = CArbon disulfide U 1 1 ug/L 1 7/25/2024 SW846-8260D = CArbon tetrachloride U 1 1 ug/L 1 7/25/2024 SW846-8260D = Chloroethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Chloroethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Chloroethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Chloroform U 1 ug/L 1 7/25/2024 SW846-8260D = Chloromethane U 1 ug/L 1 7/25/2024 SW846-8260D = Chloromethane U 1 ug/L 1 7/25/2024 SW846-8260D = Cols-1,3-Dichloropropene U 1 ug/L 1 7/25/2024 SW846-8260D = Cols-1,3-Dichloropropene U 1 ug/L 1 7/25/2024 SW846-8260D = Cols-1,3-Dichloromethane U 1 ug/L 1 7/25/2024 SW846-8260D = Cols-1,3-Dichloropropene U 1 ug/L 1 7/25/202	Bromodichloromethane	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Carbon disulfide U 5 ug/L 5 7/25/2024 SW846-8260D = Carbon tetrachloride U 1 ug/L 1 7/25/2024 SW846-8260D = Chlorobenzene U 1 ug/L 1 7/25/2024 SW846-8260D = Chlorobenzene U 1 ug/L 1 7/25/2024 SW846-8260D = Chlorobenzene U 1 ug/L 1 7/25/2024 SW846-8260D = Chloroform U 1 ug/L 1 7/25/2024 SW846-8260D = Chloromethane U 1 ug/L 1 7/25/2024 SW846-8260D = Chloromethane U 1 ug/L 1 7/25/2024 SW846-8260D = Chloromethane U 1 ug/L 1 7/25/2024 SW846-8260D = Cis-1,2-Dichlorocethene U 1 ug/L 1 7/25/2024 SW846-8260D = Cis-1,3-Dichloropropene U 1 ug/L 1 7/25/2024 SW846-8260D = Cis-1,3-Dichloromethane U 1 ug/L 1 7/25/2024 SW846-8260D = Cis-1,3-Dichloromethane U 1 ug/L 1 7/25/2024 SW846-8260D = Cibromomethane U 1 ug/L 1 7/25/2024 SW846-8260D = Cibromometha	Bromoform	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Carbon tetrachloride	Bromomethane	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Chlorobenzene U 1 ug/L 1 7/25/2024 SW846-8260D = Chloroftane U 1 ug/L 1 7/25/2024 SW846-8260D = Chloroform U 1 ug/L 1 7/25/2024 SW846-8260D = Chloroform U 1 ug/L 1 7/25/2024 SW846-8260D = Chloromethane U 1 ug/L 1 7/25/2024 SW846-8260D = cis-1,2-Dichloropethene U 1 ug/L 1 7/25/2024 SW846-8260D = cis-1,3-Dichloropropene U 1 ug/L 1 7/25/2024 SW846-8260D = cis-1,3-Dichloropropene U 1 ug/L 1 7/25/2024 SW846-8260D = Dibromomethane U 1 ug/L 1 7/25/2024 SW846-8260D = Totalofomethane U 1 ug/L 1 7/25/2024 SW846-8260D = Dibromomethane U 1 ug/L 1 7/25/2024 SW846-8260D = Totalofomethane U 1 ug/L 1 7/25/2024 SW846-8260D = Totalofomethane U 1 ug/L 1 7/25/2024 SW846-8260D = Totalofomethene U 1 ug/L 1 7/25/2024 SW846-8260D = Totalofom	Carbon disulfide	U	5	ug/L	5	7/25/2024	SW846-8260D	=
Chloroethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Chloroform U 1 ug/L 1 7/25/2024 SW846-8260D = Chloroform U 1 ug/L 1 7/25/2024 SW846-8260D = Chloroform U 1 ug/L 1 7/25/2024 SW846-8260D = Chloroformethane U 1 ug/L 1 7/25/2024 SW846-8260D = Cis-1,3-Dichloroethene U 1 ug/L 1 7/25/2024 SW846-8260D = Cis-1,3-Dichloropropene U 1 ug/L 1 7/25/2024 SW846-8260D = Cibromomethane U 1 U 1 ug/L 1 7/25/2024 SW846-8260D = Cibromomethane U 1 U 1 ug/L 1 7/25/2024 SW846-8260D = Cibromomethane U 1 U 1 ug/L 1 7/25/2024 SW846-8260D = Cibromomethane U 1 U 1 ug/L 1 7/25/2024 SW846-8260D = Cibromomethane U 1 U 1 ug/L 1 7/25/2024 SW846-8260D = Cibromomethane U 1 ug/L 1 7/25/2024 SW846-	Carbon tetrachloride	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Chloroethane U 1 1 ug/L 1 7/25/2024 SW846-8260D = Chloroform U 1 ug/L 1 7/25/2024 SW846-8260D = Chloromethane U 1 ug/L 1 7/25/2024 SW846-8260D = Chloromethane U 1 ug/L 1 7/25/2024 SW846-8260D = cis-1,3-Dichloropthene U 1 ug/L 1 7/25/2024 SW846-8260D = cis-1,3-Dichloropthene U 1 ug/L 1 7/25/2024 SW846-8260D = Cis-1,3-Dichloropthane U 1 ug/L 1 7/25/2024 SW846-8260D = Dibromochloromethane U 1 ug/L 5 7/25/2024 SW846-8260D = Dibromochloromethane U 1 ug/L 5 7/25/2024 SW846-8260D = Dibromochloromethane U 1 ug/L 1 7/25/2024 SW846-8260D = Toluene U 1 ug/L 1 7/25/2024 SW846-8260D = Toluene U 1 ug/L 1 7/25/2024 SW846-8260D = Total Xylene U 3 ug/L 3 7/25/2024 SW846-8260D = Trans-1,2-Dichloropropene U 1 ug/L 1 7/25/2024 SW846-8260D = Trans-1,3-Dichloropropene U 1 ug/L 1 7/25/2024 SW846-8260D = Trans-1,4-Dichloropropene U 1 ug/L 1 7/25/2024 SW846-8260D = Trans-1,4-Dichloropropene U 1 ug/L 1 7/25/2024 SW846-8260D = Trichlorofethene U 1 ug/L 1 7/25/2024 SW846-8260D = Tric	Chlorobenzene	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Chloroform U 1 ug/L 1 vg/L 1 7/25/2024 SW846-8260D = Chloromethane U 1 ug/L 1 7/25/2024 SW846-8260D = cis-1,2-Dichloroethene U 1 ug/L 1 7/25/2024 SW846-8260D = cis-1,2-Dichloropropene U 1 ug/L 1 7/25/2024 SW846-8260D = cis-1,3-Dichloropropene U 1 ug/L 1 7/25/2024 SW846-8260D = Dibromochloromethane U 1 ug/L 1 7/25/2024 SW846-8260D = Dibromochloromethane U 1 ug/L 1 7/25/2024 SW846-8260D = cis-1,3-Dichloropropene U 1 ug/L 1 7/25/2024 SW846-8260D = cis-1,3-Dichloropropene U 1 ug/L 1 7/25/2024 SW846-8260D = cis-1,3-Dichloromethane U 1 ug/L 1 7/25/2024 SW846-8260D = cis-1,3-Dichloropropene U 1 ug/L 1 7/25/2024 SW846-8260D = cis-	Chloroethane	U	1		1		SW846-8260D	=
Chloromethane U 1 ug/L 1 7/25/2024 SW846-8260D = cis-1,2-Dichloroethene U 1 ug/L 1 7/25/2024 SW846-8260D = cis-1,3-Dichloropropene U 1 ug/L 1 7/25/2024 SW846-8260D = Dibromomethane U 1 ug/L 1 7/25/2024 SW846-8260D = Ethylbenzene U 1 ug/L 1 7/25/2024 SW846-8260D = Ethylbenzene U 1 ug/L 1 7/25/2024 SW846-8260D = Ethylbenzene U 1 ug/L 5 7/25/2024 SW846-8260D = Idodomethane U 5 ug/L 5 7/25/2024 SW846-8260D = Styrene U 1 ug/L 1 7/25/2024 SW846-8260D = Tetrachloroethene U 1 ug/L 1 7/25/2024 SW846-8260D =	Chloroform	U	1		1	7/25/2024	SW846-8260D	=
cis-1,2-Dichloroethene U 1 ug/L 1 7/25/2024 SW846-8260D = cis-1,3-Dichloropropene U 1 ug/L 1 7/25/2024 SW846-8260D = Dibromochloromethane U 1 ug/L 1 7/25/2024 SW846-8260D = Dibromomethane U 1 ug/L 1 7/25/2024 SW846-8260D = Ethylbenzene U 1 ug/L 1 7/25/2024 SW846-8260D = Ethylbenzene U 5 ug/L 5 7/25/2024 SW846-8260D = Iodomethane U 5 ug/L 5 7/25/2024 SW846-8260D = Methylene chloride U 5 ug/L 5 7/25/2024 SW846-8260D = Styrene U 1 ug/L 1 7/25/2024 SW846-8260D = Tetrachloroethene U 1 ug/L 1 7/25/2024 SW846-8260D	Chloromethane	U	1		1	7/25/2024	SW846-8260D	=
1	cis-1.2-Dichloroethene	U			1			=
Dibromochloromethane U 1 ug/L 1 7/25/2024 SW846-8260D = Dibromomethane U 1 ug/L 1 7/25/2024 SW846-8260D = Ethylbenzene U 1 ug/L 1 7/25/2024 SW846-8260D = Iodomethane U 5 ug/L 5 7/25/2024 SW846-8260D = Methylene chloride U 5 ug/L 5 7/25/2024 SW846-8260D = Styrene U 1 ug/L 1 7/25/2024 SW846-8260D = Tetrachloroethene U 1 ug/L 1 7/25/2024 SW846-8260D = Total Xylene U 1 ug/L 1 7/25/2024 SW846-8260D = Total Xylene U 1 ug/L 1 7/25/2024 SW846-8260D = trans-1,2-Dichloroethene U 1 ug/L 1 7/25/2024 SW846-8260D = <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>=</td>								=
Dibromomethane								=
Ethylbenzene	-					· ·		
Iodomethane U 5 ug/L 5 7/25/2024 SW846-8260D = Methylene chloride U 5 ug/L 5 7/25/2024 SW846-8260D = Styrene U 1 ug/L 1 7/25/2024 SW846-8260D = Tetrachloroethene U 1 ug/L 1 7/25/2024 SW846-8260D = Toluene U 1 ug/L 1 7/25/2024 SW846-8260D = Total Xylene U 3 ug/L 3 7/25/2024 SW846-8260D = trans-1,2-Dichloroethene U 1 ug/L 1 7/25/2024 SW846-8260D = trans-1,3-Dichloropropene U 1 ug/L 1 7/25/2024 SW846-8260D = trans-1,4-Dichloro-2-butene U 5 ug/L 5 7/25/2024 SW846-8260D = Trichlorofluoroethene U 1 ug/L 1 7/25/2024 SW846-8260D								
Methylene chloride U 5 ug/L 5 7/25/2024 SW846-8260D = Styrene U 1 ug/L 1 7/25/2024 SW846-8260D = Tetrachloroethene U 1 ug/L 1 7/25/2024 SW846-8260D = Total Xylene U 3 ug/L 3 7/25/2024 SW846-8260D = trans-1,2-Dichloroethene U 1 ug/L 1 7/25/2024 SW846-8260D = trans-1,3-Dichloropropene U 1 ug/L 1 7/25/2024 SW846-8260D = trans-1,4-Dichloro-2-butene U 5 ug/L 5 7/25/2024 SW846-8260D = trans-1,4-Dichloro-2-butene U 5 ug/L 5 7/25/2024 SW846-8260D = Trichlorofthene U 1 ug/L 1 7/25/2024 SW846-8260D = Trichlorofluoromethane U 1 ug/L 1 7/25/2024 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>_</td>								_
Styrene U 1 ug/L 1 7/25/2024 SW846-8260D = Tetrachloroethene U 1 ug/L 1 7/25/2024 SW846-8260D = Toluene U 1 ug/L 1 7/25/2024 SW846-8260D = Total Xylene U 3 ug/L 3 7/25/2024 SW846-8260D = trans-1,2-Dichloroethene U 1 ug/L 1 7/25/2024 SW846-8260D = trans-1,3-Dichloropropene U 1 ug/L 1 7/25/2024 SW846-8260D = trans-1,4-Dichloro-2-butene U 5 ug/L 5 7/25/2024 SW846-8260D = trans-1,4-Dichloro-2-butene U 1 ug/L 1 7/25/2024 SW846-8260D = Trichlorofluoroethene U 1 ug/L 1 7/25/2024 SW846-8260D = Vinyl acetate U 5 ug/L 5 7/25/2024	-							
Tetrachloroethene U 1 ug/L 1 7/25/2024 SW846-8260D = Toluene U 1 ug/L 1 7/25/2024 SW846-8260D = Total Xylene U 3 ug/L 3 7/25/2024 SW846-8260D = trans-1,2-Dichloroethene U 1 ug/L 1 7/25/2024 SW846-8260D = trans-1,3-Dichloropropene U 1 ug/L 1 7/25/2024 SW846-8260D = trans-1,4-Dichloro-2-butene U 5 ug/L 5 7/25/2024 SW846-8260D = Trichloroethene U 1 ug/L 1 7/25/2024 SW846-8260D = Trichlorofluoromethane U 1 ug/L 1 7/25/2024 SW846-8260D = Vinyl acetate U 5 ug/L 5 7/25/2024 SW846-8260D = Dissolved Solids U 1 ug/L 1 7/25/2024 SW	- <u> </u>							
Toluene U 1 ug/L 1 7/25/2024 SW846-8260D = Total Xylene U 3 ug/L 3 7/25/2024 SW846-8260D = trans-1,2-Dichloroethene U 1 ug/L 1 7/25/2024 SW846-8260D = trans-1,3-Dichloropropene U 1 ug/L 1 7/25/2024 SW846-8260D = trans-1,4-Dichloro-2-butene U 5 ug/L 5 7/25/2024 SW846-8260D UJ Trichloroethene U 1 ug/L 1 7/25/2024 SW846-8260D = Trichlorofluoromethane U 1 ug/L 1 7/25/2024 SW846-8260D = Vinyl acetate U 5 ug/L 5 7/25/2024 SW846-8260D = Uinyl chloride U 1 ug/L 1 7/25/2024 SW846-8260D = Dissolved Solids U 0 1 ug/L 1 7/25/2024 SW846-8260D = Dissolved Solids U 0 0.5 mg/L 0.5 7/25/2024 EPA-160.1 = Lodide U 0.5 mg/L 0.5 7/25/2024 EPA-300.0 = Chemical Oxygen Demand (COD) J 11 mg/L 20 7/25/2024 EPA-410.4 = Cyanide U 0.2 mg/L 0.2 7/25/2024 SW846-9012B =								
Total Xylene U 3 ug/L 3 7/25/2024 SW846-8260D = trans-1,2-Dichloroethene U 1 ug/L 1 7/25/2024 SW846-8260D = trans-1,3-Dichloropropene U 1 ug/L 1 7/25/2024 SW846-8260D = trans-1,4-Dichloro-2-butene U 5 ug/L 5 7/25/2024 SW846-8260D UJ Trichloroethene U 1 ug/L 1 7/25/2024 SW846-8260D = Trichlorofluoromethane U 1 ug/L 1 7/25/2024 SW846-8260D = Vinyl acetate U 5 ug/L 5 7/25/2024 SW846-8260D = Vinyl chloride U 1 ug/L 1 7/25/2024 SW846-8260D = Dissolved Solids 261 mg/L 10 7/25/2024 SW846-8260D = Dissolved Solids 0 0.5 mg/L 0.5 7/25/2024 EPA-160.1 = Chemical Oxygen Demand (COD) J 11 mg/L 20 7/25/2024 EPA-410.4 = Cyanide U 0.2 mg/L 0.2 7/25/2024 SW846-9012B </td <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	-							
trans-1,2-Dichloroethene U 1 ug/L 1 7/25/2024 SW846-8260D = trans-1,3-Dichloropropene U 1 ug/L 1 7/25/2024 SW846-8260D = trans-1,4-Dichloro-2-butene U 5 ug/L 5 7/25/2024 SW846-8260D UJ Trichloroethene U 1 ug/L 1 7/25/2024 SW846-8260D = Trichlorofluoromethane U 1 ug/L 1 7/25/2024 SW846-8260D = Vinyl acetate U 5 ug/L 5 7/25/2024 SW846-8260D = Vinyl chloride U 1 ug/L 1 7/25/2024 SW846-8260D = Dissolved Solids 261 mg/L 10 7/25/2024 EPA-160.1 = Iodide U 0.5 mg/L 0.5 7/25/2024 EPA-300.0 = Chemical Oxygen Demand (COD) J 11 mg/L 20 7/25/2024 SW8								
trans-1,3-Dichloropropene U 1 ug/L 1 7/25/2024 SW846-8260D = trans-1,4-Dichloro-2-butene U 5 ug/L 5 7/25/2024 SW846-8260D U Trichlorofluoromethane U 1 ug/L 1 7/25/2024 SW846-8260D = Vinyl acetate U 5 ug/L 5 7/25/2024 SW846-8260D = Vinyl chloride U 1 ug/L 1 7/25/2024 SW846-8260D = Dissolved Solids 261 mg/L 10 7/25/2024 EPA-160.1 = Iodide U 0.5 mg/L 0.5 7/25/2024 EPA-300.0 = Chemical Oxygen Demand (COD) J 11 mg/L 20 7/25/2024 EPA-410.4 = Cyanide U 0.2 mg/L 0.2 7/25/2024 SW846-9012B =								
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Trichlorofluoromethane U 1 ug/L 1 7/25/2024 SW846-8260D = Vinyl acetate U 5 ug/L 5 7/25/2024 SW846-8260D = Vinyl chloride U 1 ug/L 1 7/25/2024 SW846-8260D = Dissolved Solids 261 mg/L 10 7/25/2024 EPA-160.1 = Iodide U 0.5 mg/L 0.5 7/25/2024 EPA-300.0 = Chemical Oxygen Demand (COD) J 11 mg/L 20 7/25/2024 EPA-410.4 = Cyanide U 0.2 mg/L 0.2 7/25/2024 SW846-9012B =								
Vinyl acetate U 5 ug/L 5 7/25/2024 SW846-8260D = Vinyl chloride U 1 ug/L 1 7/25/2024 SW846-8260D = Dissolved Solids 261 mg/L 10 7/25/2024 EPA-160.1 = Iodide U 0.5 mg/L 0.5 7/25/2024 EPA-300.0 = Chemical Oxygen Demand (COD) J 11 mg/L 20 7/25/2024 EPA-410.4 = Cyanide U 0.2 mg/L 0.2 7/25/2024 SW846-9012B =								
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Dissolved Solids 261 mg/L 10 7/25/2024 EPA-160.1 = lodide U 0.5 mg/L 0.5 7/25/2024 EPA-300.0 = Chemical Oxygen Demand (COD) J 11 mg/L 20 7/25/2024 EPA-410.4 = Cyanide U 0.2 mg/L 0.2 7/25/2024 SW846-9012B =	Vinyl acetate							=
Iodide U 0.5 mg/L 0.5 mg/L 7/25/2024 EPA-300.0 = Chemical Oxygen Demand (COD) J 11 mg/L 20 7/25/2024 EPA-410.4 = Cyanide U 0.2 mg/L 0.2 7/25/2024 SW846-9012B =	Vinyl chloride	U						=
Chemical Oxygen Demand (COD) J 11 mg/L 20 7/25/2024 EPA-410.4 = Cyanide U 0.2 mg/L 0.2 7/25/2024 SW846-9012B =	Dissolved Solids		261				EPA-160.1	=
Cyanide U 0.2 mg/L 0.2 7/25/2024 SW846-9012B =	Iodide	U	0.5	mg/L	0.5	7/25/2024	EPA-300.0	=
	Chemical Oxygen Demand (COD)	J	11	mg/L	20	7/25/2024	EPA-410.4	=
Total Organic Halides (TOX) J 9.78 ug/L 10 7/25/2024 SW846-9020B =	Cyanide	U	0.2	mg/L	0.2	7/25/2024	SW846-9012B	=
	Total Organic Halides (TOX)	J	9.78	ug/L	10	7/25/2024	SW846-9020B	=

Total Organic Carbon (TOC) J 0.777 mg/L 2 7/25/2024 SW846-9060A =

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: MW224 SIDE RGA Type: URGA Period: 3rd Quarter 2024

AKGWA Well Tag #: 8000-5244 SAMPLE ID: MW224SG4-24 Sample Type: REG

AKGWA Well Tag #:	8000-5244		SAMPLE ID: N		MW224SG4-24		Sample Type: REG		
Parameter	Qualifier	Result	Units	Reporting Limit	Date Collected	Counting Error (+/-)	TPU	Method	Validation
Bromide		0.33	mg/L	0.2	7/25/2024			SW846-9056A	=
Chloride	J	24.8	mg/L	250	7/25/2024			SW846-9056A	=
Fluoride	*J	0.259	mg/L	4	7/25/2024			SW846-9056A	=
Nitrate as Nitrogen	J	0.925	mg/L	10	7/25/2024			SW846-9056A	=
Sulfate		19.3	mg/L	0.4	7/25/2024			SW846-9056A	=
Barometric Pressure Reading		30.16	Inches/Hg		7/25/2024				Х
Conductivity		460	μmhos/cm		7/25/2024				Х
Depth to Water		71.88	ft		7/25/2024				Х
Dissolved Oxygen		4.57	mg/L		7/25/2024				Х
Eh (approx)		391	mV		7/25/2024				Х
ЭН		6.11	Std Unit		7/25/2024				Х
- Temperature		65	deg F		7/25/2024				Х
- Furbidity		1.06	NTU		7/25/2024				Х
Aluminum	U	0.05	mg/L	0.05	7/25/2024			SW846-6020B	=
Antimony	U	0.003	mg/L	0.003	7/25/2024			SW846-6020B	=
Arsenic	U	0.005	mg/L	0.005	7/25/2024			SW846-6020B	=
Barium		0.231	mg/L	0.004	7/25/2024			SW846-6020B	=
Beryllium	U	0.0005	mg/L	0.0005	7/25/2024			SW846-6020B	=
Boron		0.035	mg/L	0.015	7/25/2024			SW846-6020B	=
Cadmium	U	0.001	mg/L	0.001	7/25/2024			SW846-6020B	=
Calcium		25.9	mg/L	0.2	7/25/2024			SW846-6020B	=
Chromium	J	0.00571	mg/L	0.01	7/25/2024			SW846-6020B	=
Cobalt	U	0.001	mg/L	0.001	7/25/2024			SW846-6020B	=
Copper	J	0.0011	mg/L	0.002	7/25/2024			SW846-6020B	=
ron	J	0.0527	mg/L	0.1	7/25/2024			SW846-6020B	=
ead	U	0.002	mg/L	0.002	7/25/2024			SW846-6020B	=
Magnesium		11.3	mg/L	0.03	7/25/2024			SW846-6020B	=
Manganese		0.00868	mg/L	0.005	7/25/2024			SW846-6020B	=
Molybdenum	J	0.000986	mg/L	0.001	7/25/2024			SW846-6020B	=
Nickel		0.0103	mg/L	0.002	7/25/2024			SW846-6020B	=
Potassium		1.06	mg/L	0.3	7/25/2024			SW846-6020B	=
Rhodium	U	0.005	mg/L	0.005	7/25/2024			SW846-6020B	=
Selenium	U	0.005	mg/L	0.005	7/25/2024			SW846-6020B	=
Silver	U	0.001	mg/L	0.001	7/25/2024			SW846-6020B	=
Sodium		57.5	mg/L	2.5	7/25/2024			SW846-6020B	=
antalum	U	0.005	mg/L	0.005	7/25/2024			SW846-6020B	=
- Thallium	U	0.002	mg/L	0.002	7/25/2024			SW846-6020B	=
Jranium	U	0.0002	mg/L	0.0002	7/25/2024			SW846-6020B	=
/anadium	J	0.0035	mg/L	0.02	7/25/2024			SW846-6020B	=
Zinc	U	0.02	mg/L	0.02	7/25/2024			SW846-6020B	=
Mercury	J	0.000151	mg/L	0.0002	7/25/2024			SW846-7470A	=
Barium, Dissolved	•	0.235	mg/L	0.004	7/25/2024			SW846-6020B	J
Chromium, Dissolved	U	0.255	mg/L	0.004	7/25/2024			SW846-6020B	UJ
Jranium, Dissolved	U	0.0002	mg/L	0.0002	7/25/2024			SW846-6020B	UJ
Radium-226	U	-0.00834	pCi/L	0.69	7/25/2024	0.299	0.299	AN-1418	=
Madailli 220	U	0.00034	PCI/ L	0.05	1,23,2024	0.233	0.233	VIA 1410	-

<u> </u>			0: /:	2.04	7/25/2224	1.50	4.65	504 005 0 44	
Strontium-90	U	1.2	pCi/L	2.81	7/25/2024	1.63	1.65	EPA-905.0-M	=
Tritium Technetium-99	U	1.99 -4.03	pCi/L pCi/L	296 17.9	7/25/2024 7/25/2024	9.86	9.86	EPA-906.0-M HASL 300, Tc-02-	=
Thorium-230	U	0.385	pCi/L	1.54	7/25/2024	0.864	0.869	RC M HASL 300, Th-01-	=
A1.1			0: /:	6.05	7/25/2224			RC M	
Alpha activity	U	4.74	pCi/L	6.95	7/25/2024	4.6	4.66	SW846-9310	UJ
Beta activity	U	3.98	pCi/L	8.71	7/25/2024	5.13	5.18	SW846-9310	=
1,2-Dibromo-3-chloropropane	U	0.0189	ug/L	0.0189	7/25/2024			SW846-8011	=
1,1,1,2-Tetrachloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,1,1-Trichloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,1,2,2-Tetrachloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,1,2-Trichloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,1-Dichloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,1-Dichloroethene		1	ug/L	1	7/25/2024			SW846-8260D	=
1,2,3-Trichloropropane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,2-Dibromoethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,2-Dichlorobenzene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,2-Dichloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,2-Dichloropropane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
L,4-Dichlorobenzene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
2-Butanone	U	5	ug/L	5	7/25/2024			SW846-8260D	=
2-Hexanone	U	5	ug/L	5	7/25/2024			SW846-8260D	=
-Methyl-2-pentanone	U	5	ug/L	5	7/25/2024			SW846-8260D	=
Acetone	U	5	ug/L	5	7/25/2024			SW846-8260D	=
Acrolein	U	5	ug/L	5	7/25/2024			SW846-8260D	UJ
Acrylonitrile	U	5	ug/L	5	7/25/2024			SW846-8260D	UJ
Benzene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Bromochloromethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Bromodichloromethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Bromoform	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Bromomethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Carbon disulfide	U	5	ug/L	5	7/25/2024			SW846-8260D	=
Carbon tetrachloride	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Chlorobenzene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Chloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Chloroform	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Chloromethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
cis-1,2-Dichloroethene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
cis-1,3-Dichloropropene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Dibromochloromethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Dibromomethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Ethylbenzene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
odomethane	U	5	ug/L	5	7/25/2024			SW846-8260D	=
Methylene chloride	U	5	ug/L	5	7/25/2024			SW846-8260D	=
ityrene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Tetrachloroethene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Toluene	U	1	ug/L	1	7/25/2024		-	SW846-8260D	=
Total Xylene	U	3	ug/L	3	7/25/2024			SW846-8260D	=
rans-1,2-Dichloroethene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
rans-1,3-Dichloropropene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
rans-1,4-Dichloro-2-butene	U	5	ug/L	5	7/25/2024			SW846-8260D	UJ
 Frichloroethene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Trichlorofluoromethane	U	1		1	7/25/2024			SW846-8260D	=

Vinyl acetate	U	5	ug/L	5	7/25/2024	SW846-8260D =
Vinyl chloride	U	1	ug/L	1	7/25/2024	SW846-8260D =
Dissolved Solids		256	mg/L	10	7/25/2024	EPA-160.1 =
lodide	U	0.5	mg/L	0.5	7/25/2024	EPA-300.0 =
Chemical Oxygen Demand (COD)	J	13.3	mg/L	20	7/25/2024	EPA-410.4 =
Cyanide	U	0.2	mg/L	0.2	7/25/2024	SW846-9012B =
Total Organic Halides (TOX)		13.1	ug/L	10	7/25/2024	SW846-9020B =
Total Organic Carbon (TOC)	J	0.799	mg/L	2	7/25/2024	SW846-9060A =

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: MW369 DOWN RGA Type: URGA Period: 3rd Quarter 2024

AKGWA Well Tag #: 8004-4820 SAMPLE ID: MW369UG4-24 Sample Type: REG

ANGVVA VVEII Tag #.	8004-4820	SAIVIPLE ID:			WW369UG4-2	24 3	ample Ty		
Parameter	Qualifier	Result	Units	Reporting Limit	Date Collected	Counting Error (+/-)	TPU	Method	Validation
Barometric Pressure Reading		30.01	Inches/Hg		7/17/2024				Х
Conductivity		342	μmhos/cm		7/17/2024				Х
Depth to Water		40.07	ft		7/17/2024				Х
Dissolved Oxygen		1.95	mg/L		7/17/2024				Х
Eh (approx)		536	mV		7/17/2024				Х
рН		6.09	Std Unit		7/17/2024				Х
Temperature		68.3	deg F		7/17/2024				Х
Turbidity		-3.6	NTU		7/17/2024				Х
Aluminum	J	0.0269	mg/L	0.05	7/17/2024			SW846-6020B	=
Antimony	U	0.003	mg/L	0.003	7/17/2024			SW846-6020B	=
Arsenic	U	0.005	mg/L	0.005	7/17/2024			SW846-6020B	=
Barium		0.359	mg/L	0.004	7/17/2024			SW846-6020B	=
Beryllium	U	0.0005	mg/L	0.0005	7/17/2024			SW846-6020B	=
Boron	J	0.0137	mg/L	0.015	7/17/2024			SW846-6020B	=
Cadmium	U	0.001	mg/L	0.001	7/17/2024			SW846-6020B	=
Calcium		15.1	mg/L	0.2	7/17/2024			SW846-6020B	=
Chromium	U	0.01	mg/L	0.01	7/17/2024			SW846-6020B	=
Cobalt		0.00431	mg/L	0.001	7/17/2024			SW846-6020B	=
Copper		0.00295	mg/L	0.002	7/17/2024			SW846-6020B	=
ron	J	0.0486	mg/L	0.1	7/17/2024			SW846-6020B	=
ead	U	0.002	mg/L	0.002	7/17/2024			SW846-6020B	=
Magnesium		6.22	mg/L	0.03	7/17/2024			SW846-6020B	=
Manganese	J	0.00423	mg/L	0.005	7/17/2024			SW846-6020B	=
Molybdenum	U	0.001	mg/L	0.001	7/17/2024			SW846-6020B	=
Nickel		0.00432	mg/L	0.002	7/17/2024			SW846-6020B	=
Potassium		0.499	mg/L	0.3	7/17/2024			SW846-6020B	=
Rhodium	U	0.005	mg/L	0.005	7/17/2024			SW846-6020B	=
Selenium	J	0.002	mg/L	0.005	7/17/2024			SW846-6020B	=
Silver	U	0.001	mg/L	0.001	7/17/2024			SW846-6020B	=
Sodium		48.4	mg/L	0.25	7/17/2024			SW846-6020B	=
Tantalum	U	0.005	mg/L	0.005	7/17/2024			SW846-6020B	=
Thallium	U	0.002	mg/L	0.002	7/17/2024			SW846-6020B	=
Jranium	U	0.0002	mg/L	0.0002	7/17/2024			SW846-6020B	=
/anadium	U	0.02	mg/L	0.02	7/17/2024			SW846-6020B	=
Zinc	J	0.00676	mg/L	0.02	7/17/2024			SW846-6020B	=
Mercury	U	0.0002	mg/L	0.0002	7/17/2024			SW846-7470A	=
Barium, Dissolved		0.349	mg/L	0.004	7/17/2024			SW846-6020B	J
Chromium, Dissolved	U	0.01	mg/L	0.01	7/17/2024			SW846-6020B	UJ
Jranium, Dissolved	U	0.0002	mg/L	0.0002	7/17/2024			SW846-6020B	UJ
Radium-226	U	0.377	pCi/L	1.22	7/17/2024	0.749	0.75	AN-1418	=
Radium-228	U	4.57	pCi/L	4.61	7/17/2024	2.94	3.17	EPA-904.0-M	=
Strontium-90	U	0.861	pCi/L	6.81	7/17/2024	3.67	3.68	EPA-905.0-M	=
Technetium-99		42.7	pCi/L	17.7	7/17/2024	11.5	12.5	HASL 300, Tc-02 RC M	- J

Thorium-230	U	0.139	pCi/L	0.649	7/17/2024	0.354	0.355	HASL 300, Th-01- RC M	=
Thorium-232	U	-0.0533	pCi/L	0.518	7/17/2024	0.202	0.202	HASL 300, Th-01- RC M	=
Alpha activity	U	-0.865	pCi/L	6.58	7/17/2024	2.38	2.39	SW846-9310	=
Beta activity		31.5	pCi/L	9.06	7/17/2024	8.17	9.7	SW846-9310	=

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: MW369 DOWN RGA Type: URGA Period: 3rd Quarter 2024

AKGWA Well Tag #: 8004-4820 SAMPLE ID: MW369UG4-24R Sample Type: REG

AKGWA Well Tag #:	8004-4820		SAMPLE ID: N		MW369UG4-24R		Sample Type: REG		
Parameter	Qualifier	Result	Units	Reporting Limit	Date Collected	Counting Error (+/-)	TPU	Method	Validation
Bromide		0.325	mg/L	0.2	7/30/2024			SW846-9056A	=
Chloride	JW	29.4	mg/L	250	7/30/2024			SW846-9056A	J
Fluoride	J	0.243	mg/L	4	7/30/2024			SW846-9056A	=
Nitrate as Nitrogen	J	0.946	mg/L	10	7/30/2024			SW846-9056A	=
Sulfate		7.92	mg/L	0.4	7/30/2024			SW846-9056A	=
Barometric Pressure Reading		29.93	Inches/Hg		7/30/2024				Х
Conductivity		336	μmhos/cm		7/30/2024				Х
Depth to Water		38.89	ft		7/30/2024				Х
Dissolved Oxygen		3	mg/L		7/30/2024				Х
Eh (approx)		462	mV		7/30/2024				Х
pH		6.06	Std Unit		7/30/2024				Х
Temperature		69.9	deg F		7/30/2024				Х
Turbidity		0	NTU		7/30/2024				Х
PCB-1016	U	0.0951	ug/L	0.0951	7/30/2024			SW846-8082A	UJ
PCB-1221	U	0.0951	ug/L	0.0951	7/30/2024			SW846-8082A	=
PCB-1232	U	0.0951	ug/L	0.0951	7/30/2024			SW846-8082A	=
PCB-1242	U	0.0951	ug/L	0.0951	7/30/2024			SW846-8082A	=
PCB-1248	U	0.0951	ug/L	0.0951	7/30/2024			SW846-8082A	=
PCB-1254	U	0.0951	ug/L	0.0951	7/30/2024			SW846-8082A	=
PCB-1260	U	0.0951	ug/L	0.0951	7/30/2024			SW846-8082A	UJ
PCB-1268	U	0.0951	ug/L	0.0951	7/30/2024			SW846-8082A	=
Polychlorinated biphenyl	U	0.0951	ug/L	0.0951	7/30/2024			SW846-8082A	UJ
Tritium	U	-48.7	pCi/L	287	7/30/2024	155	155	EPA-906.0-M	=
1,2-Dibromo-3-chloropropane	UY2	0.0273	ug/L	0.0273	7/30/2024			SW846-8011	UJ
1,1,1,2-Tetrachloroethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,1,1-Trichloroethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,1,2,2-Tetrachloroethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,1,2-Trichloroethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,1-Dichloroethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,1-Dichloroethene	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,2,3-Trichloropropane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,2-Dibromoethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,2-Dichlorobenzene	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,2-Dichloroethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,2-Dichloropropane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,4-Dichlorobenzene	U	1	ug/L	1	7/30/2024			SW846-8260D	=
2-Butanone	U	5	ug/L	5	7/30/2024			SW846-8260D	=
2-Hexanone	U	5	ug/L	5	7/30/2024			SW846-8260D	=
4-Methyl-2-pentanone	U	5	ug/L ug/L	5	7/30/2024			SW846-8260D	=
Acetone	U	5	ug/L	5 5	7/30/2024			SW846-8260D	 =
Acrolein	U	5	ug/L ug/L	5	7/30/2024			SW846-8260D	UJ
	U				7/30/2024			SW846-8260D SW846-8260D	
Acrylonitrile		5	ug/L	5					UJ -
Benzene	U	1		1	7/30/2024			SW846-8260D	=
Bromochloromethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
Bromodichloromethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=

Bromoform	U	1	ug/L	1	7/30/2024	SW846-8260D	UJ
Bromomethane	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Carbon disulfide	U	5	ug/L	5	7/30/2024	SW846-8260D	=
Carbon tetrachloride	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Chlorobenzene	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Chloroethane	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Chloroform	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Chloromethane	U	1	ug/L	1	7/30/2024	SW846-8260D	=
cis-1,2-Dichloroethene	U	1	ug/L	1	7/30/2024	SW846-8260D	=
cis-1,3-Dichloropropene	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Dibromochloromethane	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Dibromomethane	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Ethylbenzene	U	1	ug/L	1	7/30/2024	SW846-8260D	=
odomethane	U	5	ug/L	5	7/30/2024	SW846-8260D	=
Methylene chloride	U	5	ug/L	5	7/30/2024	SW846-8260D	=
Styrene	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Tetrachloroethene	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Toluene	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Total Xylene	U	3	ug/L	3	7/30/2024	SW846-8260D	=
trans-1,2-Dichloroethene	U	1	ug/L	1	7/30/2024	SW846-8260D	=
rans-1,3-Dichloropropene	U	1	ug/L	1	7/30/2024	SW846-8260D	=
rans-1,4-Dichloro-2-butene	U	5	ug/L	5	7/30/2024	SW846-8260D	UJ
Trichloroethene		1.26	ug/L	1	7/30/2024	SW846-8260D	=
Trichlorofluoromethane	U	1	ug/L	1	7/30/2024	SW846-8260D	=
/inyl acetate	U	5	ug/L	5	7/30/2024	SW846-8260D	=
/inyl chloride	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Dissolved Solids		213	mg/L	10	7/30/2024	EPA-160.1	=
odide	U	0.5	mg/L	0.5	7/30/2024	EPA-300.0	=
Chemical Oxygen Demand (COD)	U	20	mg/L	20	7/30/2024	EPA-410.4	=
Cyanide	U	0.2	mg/L	0.2	7/30/2024	SW846-9012B	=
Total Organic Halides (TOX)		18.3	ug/L	10	7/30/2024	SW846-9020B	=
Total Organic Carbon (TOC)	J	0.757	mg/L	2	7/30/2024	SW846-9060A	=

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: MW370 DOWN RGA Type: LRGA Period: 3rd Quarter 2024

AKGWA Well Tag #: 8004-4818 SAMPLE ID: MW370UG4-24 Sample Type: REG

ARGWA Well Tag #.	8004-4818		SAIVIPLE ID: NIW3		W370UG4-24		Sample Type: REG			
Parameter	Qualifier	Result	Units	Reporting Limit	Date Collected	Counting Error (+/-)	TPU	Method	Validation	
Barometric Pressure Reading	Qualifier	29.99	Inches/Hg		7/17/2024	2.1.0. (., ,	IFU	Wethou	X	
Conductivity		454	μmhos/cm		7/17/2024				X	
•		40.95	ft						X	
Depth to Water					7/17/2024					
Dissolved Oxygen		3.66	mg/L		7/17/2024				X	
Eh (approx)		556	mV		7/17/2024				X	
pH		6.05	Std Unit		7/17/2024				X	
Temperature		66.7	deg F		7/17/2024				X	
Turbidity		-3.39	NTU		7/17/2024				Х	
Aluminum		0.814	mg/L	0.05	7/17/2024			SW846-6020B	=	
Antimony	U	0.003	mg/L	0.003	7/17/2024			SW846-6020B	=	
Arsenic	U	0.005	mg/L	0.005	7/17/2024			SW846-6020B	=	
Barium		0.212	mg/L	0.004	7/17/2024			SW846-6020B	=	
Beryllium	U	0.0005	mg/L	0.0005	7/17/2024			SW846-6020B	=	
Boron		0.0977	mg/L	0.015	7/17/2024			SW846-6020B	=	
Cadmium	U	0.001	mg/L	0.001	7/17/2024			SW846-6020B	=	
Calcium		29	mg/L	0.2	7/17/2024			SW846-6020B	=	
Chromium	J	0.00371	mg/L	0.01	7/17/2024			SW846-6020B	=	
Cobalt	J	0.000355	mg/L	0.001	7/17/2024			SW846-6020B	=	
Copper	J	0.00111	mg/L	0.002	7/17/2024			SW846-6020B	=	
ron		1.7	mg/L	0.1	7/17/2024			SW846-6020B	=	
ead	J	0.000518	mg/L	0.002	7/17/2024			SW846-6020B	=	
Magnesium		12.1	mg/L	0.03	7/17/2024			SW846-6020B	=	
Manganese		0.0587	mg/L	0.005	7/17/2024			SW846-6020B	=	
Molybdenum	J	0.000285	mg/L	0.001	7/17/2024			SW846-6020B	U	
lickel	J	0.000938	mg/L	0.002	7/17/2024			SW846-6020B	=	
Potassium		2.36	mg/L	0.3	7/17/2024			SW846-6020B	=	
Rhodium	U	0.005	mg/L	0.005	7/17/2024			SW846-6020B	=	
Selenium	U	0.005	mg/L	0.005	7/17/2024			SW846-6020B	=	
Silver	U	0.001	mg/L	0.001	7/17/2024			SW846-6020B	=	
Sodium		41.9	mg/L	0.25	7/17/2024			SW846-6020B	=	
- Tantalum	U	0.005	mg/L	0.005	7/17/2024			SW846-6020B	=	
- Thallium	U	0.002	mg/L	0.002	7/17/2024			SW846-6020B	=	
Jranium	J	0.000108	mg/L	0.0002	7/17/2024			SW846-6020B	=	
/anadium	U	0.02	mg/L	0.02	7/17/2024			SW846-6020B	=	
Zinc	J	0.00377	mg/L	0.02	7/17/2024			SW846-6020B	=	
Mercury		0.0002	mg/L	0.0002	7/17/2024			SW846-7470A	=	
Barium, Dissolved	<u>U</u>	0.207	mg/L	0.0002	7/17/2024			SW846-6020B	J	
Chromium, Dissolved	U	0.207	mg/L	0.004	7/17/2024			SW846-6020B	- n	
Jranium, Dissolved	U	0.0002	mg/L	0.0002				SW846-6020B	UJ	
	U				7/17/2024	0.007	0.000			
Radium-226		0.683	pCi/L	1.26	7/17/2024	0.887	0.888	AN-1418	=	
Radium-228	U	2.78	pCi/L	4.98	7/17/2024	2.98	3.07	EPA-904.0-M	=	
Strontium-90	U	2.56	pCi/L	3.29	7/17/2024	2.06	2.1	EPA-905.0-M	=	
[ritium	U	-40	pCi/L	290	7/17/2024	160	160	EPA-906.0-M	=	
Technetium-99	U	-4.19	pCi/L	18.8	7/17/2024	10.4	10.4	HASL 300, Tc-02 RC M	- UJ	

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Thorium-230	U	0.384	pCi/L	1.06	7/17/2024	0.627	0.632	HASL 300, Th-01- RC M	=
Thorium-232	U	0.0942	pCi/L	0.397	7/17/2024	0.286	0.287	HASL 300, Th-01- RC M	=
Alpha activity	U	0.184	pCi/L	6.29	7/17/2024	2.7	2.7	SW846-9310	=
Beta activity		14.1	pCi/L	8.83	7/17/2024	6.4	6.82	SW846-9310	=

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: MW370 DOWN RGA Type: LRGA Period: 3rd Quarter 2024

AKGWA Well Tag #: 8004-4818 SAMPLE ID: MW370UG4-24R Sample Type: REG

AKGWA Well Tag #:	8004-4818		SAMPLE ID:		MW370UG4-24R		Sample T		
Parameter	Qualifier	Result	Units	Reporting Limit	Date Collected	Counting Error (+/-)	TPU	Method	Validation
Bromide	•	0.546	mg/L	0.2	7/30/2024			SW846-9056A	=
Chloride	JW	42	mg/L	250	7/30/2024			SW846-9056A	=
Fluoride	J	0.205	mg/L	4	7/30/2024			SW846-9056A	=
Nitrate as Nitrogen	J	0.995	mg/L	10	7/30/2024			SW846-9056A	=
Sulfate		20.8	mg/L	0.8	7/30/2024			SW846-9056A	=
Barometric Pressure Reading		29.94	Inches/Hg		7/30/2024				Х
Conductivity		439	μmhos/cm		7/30/2024				Х
Depth to Water		40.78	ft		7/30/2024				Х
Dissolved Oxygen		4.22	mg/L		7/30/2024				Х
Eh (approx)		464	mV		7/30/2024				Х
рН		6.06	Std Unit		7/30/2024				Х
Temperature		69.6	deg F		7/30/2024				Х
Turbidity		0	NTU		7/30/2024				Х
PCB-1016	U	0.1	ug/L	0.1	7/30/2024			SW846-8082A	UJ
PCB-1221	U	0.1	ug/L	0.1	7/30/2024			SW846-8082A	=
PCB-1232	U	0.1	ug/L	0.1	7/30/2024			SW846-8082A	=
PCB-1242	U	0.1	ug/L	0.1	7/30/2024			SW846-8082A	=
PCB-1248	U	0.1	ug/L	0.1	7/30/2024			SW846-8082A	=
PCB-1254	U	0.1	ug/L	0.1	7/30/2024			SW846-8082A	=
PCB-1260	U	0.1	ug/L	0.1	7/30/2024			SW846-8082A	UJ
PCB-1268	U	0.1	ug/L	0.1	7/30/2024			SW846-8082A	=
Polychlorinated biphenyl	U	0.1	ug/L	0.1	7/30/2024			SW846-8082A	UJ
1,2-Dibromo-3-chloropropane	UY2	0.0192	ug/L	0.0192	7/30/2024			SW846-8011	=
1,1,1,2-Tetrachloroethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,1,1-Trichloroethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,1,2,2-Tetrachloroethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,1,2-Trichloroethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,1-Dichloroethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,1-Dichloroethene	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,2,3-Trichloropropane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,2-Dibromoethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,2-Dichlorobenzene	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,2-Dichloroethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=.
1,2-Dichloropropane	U	1		1	7/30/2024			SW846-8260D	=
1,4-Dichlorobenzene	U	1	ug/L	1	7/30/2024			SW846-8260D	=
2-Butanone	U	5	ug/L	5	7/30/2024			SW846-8260D	=
2-Hexanone	U	5	ug/L	5	7/30/2024			SW846-8260D	=
4-Methyl-2-pentanone	U	5	ug/L	5	7/30/2024			SW846-8260D	=
Acetone	U	5	ug/L	5	7/30/2024			SW846-8260D	=
Acrolein	U	5	ug/L	5	7/30/2024			SW846-8260D	UJ
Acrylonitrile	U	5	ug/L	5	7/30/2024			SW846-8260D	UJ
Benzene	U	1	ug/L	1	7/30/2024			SW846-8260D	=
Bromochloromethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
Bromodichloromethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
Bromoform	U	1	ug/L	1	7/30/2024			SW846-8260D	UJ
			-		•				

Bromomethane	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Carbon disulfide	U	5	ug/L	5	7/30/2024	SW846-8260D	=
Carbon tetrachloride	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Chlorobenzene	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Chloroethane	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Chloroform	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Chloromethane	U	1	ug/L	1	7/30/2024	SW846-8260D	=
cis-1,2-Dichloroethene	U	1	ug/L	1	7/30/2024	SW846-8260D	=
cis-1,3-Dichloropropene	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Dibromochloromethane	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Dibromomethane	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Ethylbenzene	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Iodomethane	U	5	ug/L	5	7/30/2024	SW846-8260D	=
Methylene chloride	U	5	ug/L	5	7/30/2024	SW846-8260D	=
Styrene	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Tetrachloroethene	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Toluene	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Total Xylene	U	3	ug/L	3	7/30/2024	SW846-8260D	=
trans-1,2-Dichloroethene	U	1	ug/L	1	7/30/2024	SW846-8260D	=
trans-1,3-Dichloropropene	U	1	ug/L	1	7/30/2024	SW846-8260D	=
trans-1,4-Dichloro-2-butene	U	5	ug/L	5	7/30/2024	SW846-8260D	UJ
Trichloroethene		2.1	ug/L	1	7/30/2024	SW846-8260D	=
Trichlorofluoromethane	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Vinyl acetate	U	5	ug/L	5	7/30/2024	SW846-8260D	=
Vinyl chloride	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Dissolved Solids		247	mg/L	10	7/30/2024	EPA-160.1	=
Iodide	U	0.5	mg/L	0.5	7/30/2024	EPA-300.0	=
Chemical Oxygen Demand (COD)	U	20	mg/L	20	7/30/2024	EPA-410.4	=
Cyanide	U	0.2	mg/L	0.2	7/30/2024	SW846-9012B	=
Total Organic Halides (TOX)		11.1	ug/L	10	7/30/2024	SW846-9020B	=
Total Organic Carbon (TOC)	J	0.798	mg/L	2	7/30/2024	SW846-9060A	=

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: MW372 DOWN RGA Type: URGA Period: 3rd Quarter 2024

AKGWA Well Tag #: 8004-4808 SAMPLE ID: MW372UG4-24 Sample Type: REG

ARGVVA Well Tag #.	8004-4808		SAIVIPLE ID:		WW372UG4-24		Sample Type: KEG			
Davamatav	Overlities.	Decul	l laite	Reporting Limit	Date Collected	Counting Error (+/-)	TDU	8.0 a.t.b. a.d	Validatia.	
Parameter	Qualifier	Result	Units	LIIIIC		LIIOI (+7-)	TPU	Method	Validation	
Barometric Pressure Reading		29.98	Inches/Hg		7/17/2024				X	
Conductivity		762	μmhos/cm		7/17/2024				X	
Depth to Water		35.46	ft		7/17/2024				X	
Dissolved Oxygen		0.68	mg/L		7/17/2024				X	
Eh (approx)		533	mV		7/17/2024				X	
pH 		6.02	Std Unit		7/17/2024				X	
Temperature		66.3	deg F		7/17/2024				X	
Turbidity		-4.13	NTU .		7/17/2024				X	
Aluminum	U	0.05	mg/L	0.05	7/17/2024			SW846-6020B	=.	
Antimony	U	0.003	mg/L	0.003	7/17/2024			SW846-6020B	=	
Arsenic	U	0.005	mg/L	0.005	7/17/2024			SW846-6020B	=	
Barium		0.0622	mg/L	0.004	7/17/2024			SW846-6020B	=	
Beryllium	U	0.0005	mg/L	0.0005	7/17/2024			SW846-6020B	=	
Boron		1.86	mg/L	0.3	7/17/2024			SW846-6020B	=	
Cadmium	U	0.001	mg/L	0.001	7/17/2024			SW846-6020B	=	
Calcium		65.9	mg/L	4	7/17/2024			SW846-6020B	=	
Chromium	U	0.01	mg/L	0.01	7/17/2024			SW846-6020B	=	
Cobalt	J	0.000387	mg/L	0.001	7/17/2024			SW846-6020B	=	
Copper	J	0.00135	mg/L	0.002	7/17/2024			SW846-6020B	=	
ron	J	0.068	mg/L	0.1	7/17/2024			SW846-6020B	=	
_ead	U	0.002	mg/L	0.002	7/17/2024			SW846-6020B	=	
Magnesium		22.6	mg/L	0.03	7/17/2024			SW846-6020B	=	
Manganese	J	0.004	mg/L	0.005	7/17/2024			SW846-6020B	=	
Molybdenum	J	0.000312	mg/L	0.001	7/17/2024			SW846-6020B	=	
Nickel	J	0.000937	mg/L	0.002	7/17/2024			SW846-6020B	=	
Potassium		2.26	mg/L	0.3	7/17/2024			SW846-6020B	=	
Rhodium	U	0.005	mg/L	0.005	7/17/2024			SW846-6020B	=	
Selenium	U	0.005	mg/L	0.005	7/17/2024			SW846-6020B	=	
Silver	U	0.001	mg/L	0.001	7/17/2024			SW846-6020B	=	
Sodium		57.7	mg/L	5	7/17/2024			SW846-6020B	=	
Fantalum	U	0.005	mg/L	0.005	7/17/2024			SW846-6020B	=	
Гhallium	U	0.002	mg/L	0.002	7/17/2024			SW846-6020B	=	
Jranium	U	0.0002	mg/L	0.0002	7/17/2024			SW846-6020B	=	
/anadium	U	0.002	mg/L	0.002	7/17/2024			SW846-6020B	=	
Zinc	U	0.02	mg/L	0.02	7/17/2024			SW846-6020B		
Mercury	U	0.002	mg/L	0.002	7/17/2024			SW846-7470A	=	
•	U									
Barium, Dissolved		0.0608	mg/L	0.004	7/17/2024			SW846-6020B	J	
Chromium, Dissolved	U	0.01	mg/L	0.01	7/17/2024			SW846-6020B	UJ	
Jranium, Dissolved	U	0.0002	mg/L	0.0002	7/17/2024	0.701	0.700	SW846-6020B	UJ	
Radium-226	U	0.0157	pCi/L	1.58	7/17/2024	0.721	0.722	AN-1418	=	
Radium-228	U	0.0188	pCi/L	4.25	7/17/2024	2.12	2.12	EPA-904.0-M	=	
Strontium-90	U	-2.62	pCi/L	4.13	7/17/2024	1.73	1.73	EPA-905.0-M	UJ	
Tritium	U	-87	pCi/L	287	7/17/2024	155	155	EPA-906.0-M	=	
Technetium-99	U	17.5	pCi/L	18.2	7/17/2024	11.1	11.2	HASL 300, Tc-02 RC M	- UJ	

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Thorium-230	U	0.309	pCi/L	0.588	7/17/2024	0.392	0.396	HASL 300, Th-01- RC M	=
Thorium-232	U	-0.0419	pCi/L	0.402	7/17/2024	0.147	0.148	HASL 300, Th-01- RC M	=
Alpha activity	U	0.0672	pCi/L	9.4	7/17/2024	3.91	3.92	SW846-9310	=
Beta activity	U	7.82	pCi/L	11.8	7/17/2024	7.21	7.33	SW846-9310	=

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: MW372 DOWN RGA Type: URGA Period: 3rd Quarter 2024

AKGWA Well Tag #: 8004-4808 SAMPLE ID: MW372UG4-24R Sample Type: REG

AKGWA Well Tag #:	8004-4808		SAMPLE ID:		MW372UG4-24R		Sample Type: REG		
Parameter	Qualifier	Result	Units	Reporting Limit	Date Collected	Counting Error (+/-)	TPU	Method	Validation
Bromide	<u> </u>	0.486	mg/L	0.2	7/30/2024			SW846-9056A	=
Chloride	JW	35.2	mg/L	4	7/30/2024			SW846-9056A	=
Fluoride	J	0.224	mg/L	4	7/30/2024			SW846-9056A	=
Nitrate as Nitrogen	J	0.532	mg/L	10	7/30/2024			SW846-9056A	=
Sulfate		164	mg/L	8	7/30/2024			SW846-9056A	=
Barometric Pressure Reading		29.95	Inches/Hg		7/30/2024				Х
Conductivity		749	μmhos/cm		7/30/2024				Х
Depth to Water		35.07	ft		7/30/2024				Х
Dissolved Oxygen		1.57	mg/L		7/30/2024				Х
Eh (approx)		452	mV		7/30/2024				Х
оН		6.06	Std Unit		7/30/2024				Х
remperature		66.5	deg F		7/30/2024				Х
Turbidity		0	NTU		7/30/2024				Х
PCB-1016	U	0.101	ug/L	0.101	7/30/2024			SW846-8082A	UJ
PCB-1221	U	0.101	ug/L	0.101	7/30/2024			SW846-8082A	=
PCB-1232	U	0.101	ug/L	0.101	7/30/2024			SW846-8082A	=
PCB-1242	U	0.101	ug/L	0.101	7/30/2024			SW846-8082A	=
PCB-1248	U	0.101	ug/L	0.101	7/30/2024			SW846-8082A	=
PCB-1254	U	0.101	ug/L	0.101	7/30/2024			SW846-8082A	=
PCB-1260	U	0.101	ug/L	0.101	7/30/2024			SW846-8082A	UJ
PCB-1268	U	0.101	ug/L	0.101	7/30/2024			SW846-8082A	=
Polychlorinated biphenyl	U	0.101	ug/L	0.101	7/30/2024			SW846-8082A	UJ
1,2-Dibromo-3-chloropropane	UY2	0.0188	ug/L	0.0188	7/30/2024			SW846-8011	=
I,1,1,2-Tetrachloroethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
I,1,1-Trichloroethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,1,2,2-Tetrachloroethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,1,2-Trichloroethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,1-Dichloroethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,1-Dichloroethene	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,2,3-Trichloropropane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,2-Dibromoethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,2-Dichlorobenzene	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,2-Dichloroethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,2-Dichloropropane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
I,4-Dichlorobenzene	U	1	ug/L	1	7/30/2024			SW846-8260D	=
2-Butanone	U	5	ug/L	5	7/30/2024			SW846-8260D	=
2-Hexanone	U	5	ug/L	5	7/30/2024			SW846-8260D	=
I-Methyl-2-pentanone	U	5	ug/L	5	7/30/2024			SW846-8260D	=
Acetone	U	5	ug/L	5	7/30/2024			SW846-8260D	=
Acrolein	U	5	ug/L	5	7/30/2024			SW846-8260D	UJ
Acrylonitrile	U	5	ug/L	5	7/30/2024			SW846-8260D	UJ
Benzene	U	1	ug/L	1	7/30/2024			SW846-8260D	=
Bromochloromethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
Bromodichloromethane	U	1	ug/L	1	7/30/2024			SW846-8260D	<u>-</u> =
Bromoform	U	1	ug/L	1	7/30/2024			SW846-8260D	UJ
5.0.1.0.01111	U	1	ug/ L	1	1/30/2024			3 VV 0+0-0200D	OJ

Bromomethane	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Carbon disulfide	U	5	ug/L	5	7/30/2024	SW846-8260D	=
Carbon tetrachloride	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Chlorobenzene	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Chloroethane	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Chloroform	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Chloromethane	U	1	ug/L	1	7/30/2024	SW846-8260D	=
cis-1,2-Dichloroethene	U	1	ug/L	1	7/30/2024	SW846-8260D	=
cis-1,3-Dichloropropene	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Dibromochloromethane	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Dibromomethane	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Ethylbenzene	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Iodomethane	U	5	ug/L	5	7/30/2024	SW846-8260D	=
Methylene chloride	U	5	ug/L	5	7/30/2024	SW846-8260D	=
Styrene	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Tetrachloroethene	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Toluene	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Total Xylene	U	3	ug/L	3	7/30/2024	SW846-8260D	=
trans-1,2-Dichloroethene	U	1	ug/L	1	7/30/2024	SW846-8260D	=
trans-1,3-Dichloropropene	U	1	ug/L	1	7/30/2024	SW846-8260D	=
trans-1,4-Dichloro-2-butene	U	5	ug/L	5	7/30/2024	SW846-8260D	UJ
Trichloroethene		4.38	ug/L	1	7/30/2024	SW846-8260D	=
Trichlorofluoromethane	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Vinyl acetate	U	5	ug/L	5	7/30/2024	SW846-8260D	=
Vinyl chloride	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Dissolved Solids		496	mg/L	10	7/30/2024	EPA-160.1	=
Iodide	U	0.5	mg/L	0.5	7/30/2024	EPA-300.0	=
Chemical Oxygen Demand (COD)		25.7	mg/L	20	7/30/2024	EPA-410.4	=
Cyanide	U	0.2	mg/L	0.2	7/30/2024	SW846-9012B	=
Total Organic Halides (TOX)	J	6.46	ug/L	10	7/30/2024	SW846-9020B	=
Total Organic Carbon (TOC)	J	0.798	mg/L	2	7/30/2024	SW846-9060A	=

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: MW373 DOWN RGA Type: LRGA Period: 3rd Quarter 2024

AKGWA Well Tag #: 8004-4792 SAMPLE ID: MW373UG4-24 Sample Type: REG

AKGWA Well Tag #: Parameter	8004-4792 Qualifier		SAMPLE ID:		MW373UG4-24		Sample Type: REG			
		Result	Units	Reporting Limit	Date Collected	Counting Error (+/-)	TPU	Method	Validation	
Bromide		0.464	mg/L	0.2	7/17/2024			SW846-9056A	=	
Chloride	J	29.7	mg/L	4	7/17/2024			SW846-9056A	=	
Fluoride	J	0.182	mg/L	4	7/17/2024			SW846-9056A	=	
Nitrate as Nitrogen	HJ	0.81	mg/L	10	7/17/2024			SW846-9056A	J	
Sulfate		213	mg/L	8	7/17/2024			SW846-9056A	=	
Barometric Pressure Reading		29.95	Inches/Hg		7/17/2024				Х	
Conductivity		949	μmhos/cm		7/17/2024				Х	
Depth to Water		35.81	ft		7/17/2024				Х	
Dissolved Oxygen		0.81	mg/L		7/17/2024				Х	
ih (approx)		528	mV		7/17/2024				Х	
Н		6.02	Std Unit		7/17/2024				Х	
emperature		64.9	deg F		7/17/2024				Х	
urbidity		-2.17	NTU		7/17/2024				Х	
lluminum	J	0.0198	mg/L	0.05	7/17/2024			SW846-6020B	=	
Intimony	U	0.003	mg/L	0.003	7/17/2024			SW846-6020B	=	
rsenic	U	0.005	mg/L	0.005	7/17/2024			SW846-6020B	=	
Barium		0.0356	mg/L	0.004	7/17/2024			SW846-6020B	=	
eryllium	U	0.0005	mg/L	0.0005	7/17/2024			SW846-6020B	=	
oron		2.81	mg/L	0.3	7/17/2024			SW846-6020B	=	
admium	U	0.001	mg/L	0.001	7/17/2024			SW846-6020B	=	
alcium		85.9	mg/L	4	7/17/2024			SW846-6020B	=	
Chromium	U	0.01	mg/L	0.01	7/17/2024			SW846-6020B	=	
Cobalt	U	0.001	mg/L	0.001	7/17/2024			SW846-6020B	=	
Copper	J	0.00119	mg/L	0.002	7/17/2024			SW846-6020B	=	
ron	J	0.0849	mg/L	0.1	7/17/2024			SW846-6020B	=	
ead	U	0.002	mg/L	0.002	7/17/2024			SW846-6020B	=	
/lagnesium		29.1	mg/L	0.03	7/17/2024			SW846-6020B	=	
Nanganese		0.0356	mg/L	0.005	7/17/2024			SW846-6020B	=	
/lolybdenum	J	0.000383	mg/L	0.001	7/17/2024			SW846-6020B	=	
lickel	J	0.0014	mg/L	0.002	7/17/2024			SW846-6020B	=	
otassium		2.67	mg/L	0.3	7/17/2024			SW846-6020B	=	
hodium	U	0.005	mg/L	0.005	7/17/2024			SW846-6020B	=	
elenium	U	0.005	mg/L	0.005	7/17/2024			SW846-6020B	=	
ilver	U	0.001	mg/L	0.001	7/17/2024			SW846-6020B	=	
odium		71.4	mg/L	5	7/17/2024			SW846-6020B	=	
antalum	U	0.005	mg/L	0.005	7/17/2024			SW846-6020B	=	
hallium	U	0.002	mg/L	0.002	7/17/2024			SW846-6020B	=	
Jranium	U	0.0002	mg/L	0.0002	7/17/2024			SW846-6020B	=	
'anadium	U	0.02	mg/L	0.02	7/17/2024			SW846-6020B	=	
inc	U	0.02	mg/L	0.02	7/17/2024			SW846-6020B	=	
Mercury	U	0.0002	mg/L	0.0002	7/17/2024			SW846-7470A	=	
arium, Dissolved		0.0341	mg/L	0.004	7/17/2024			SW846-6020B	J	
Chromium, Dissolved	U	0.01	mg/L	0.01	7/17/2024			SW846-6020B	UJ	
Jranium, Dissolved	J	0.000074	mg/L	0.0002	7/17/2024			SW846-6020B	J	
PCB-1016	U	0.1		0.1	7/17/2024			SW846-8082A	=	
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PCB-1221	U	0.1	ug/L	0.1	7/17/2024			SW846-8082A	=
PCB-1232	U	0.1	ug/L	0.1	7/17/2024			SW846-8082A	=
PCB-1242	U	0.1	ug/L	0.1	7/17/2024			SW846-8082A	=
PCB-1248	U	0.1	ug/L	0.1	7/17/2024			SW846-8082A	=
PCB-1254	U	0.1	ug/L	0.1	7/17/2024			SW846-8082A	=
PCB-1260	U	0.1	ug/L	0.1	7/17/2024			SW846-8082A	UJ
PCB-1268	U	0.1	ug/L	0.1	7/17/2024			SW846-8082A	=
Polychlorinated biphenyl	U	0.1	ug/L	0.1	7/17/2024			SW846-8082A	UJ
Radium-226	U	0.529	pCi/L	1.56	7/17/2024	0.937	0.937	AN-1418	=
Radium-228	U	0.00453	pCi/L	4.59	7/17/2024	2.33	2.33	EPA-904.0-M	=
Strontium-90	U	4.11	pCi/L	6.42	7/17/2024	3.9	3.95	EPA-905.0-M	=
Tritium	U	136	pCi/L	285	7/17/2024	169	171	EPA-906.0-M	=
Technetium-99	U	-8.77	pCi/L	18.9	7/17/2024	10.1	10.1	HASL 300, Tc-02- RC M	UJ
Thorium-230	U	0.449	pCi/L	0.648	7/17/2024	0.462	0.468	HASL 300, Th-01- RC M	=
Thorium-232	U	-0.00523	pCi/L	0.494	7/17/2024	0.217	0.217	HASL 300, Th-01- RC M	=
Alpha activity	U	-0.776	pCi/L	8.15	7/17/2024	3.21	3.22	SW846-9310	=
Beta activity	U	7.68	pCi/L	9.88	7/17/2024	6.2	6.33	SW846-9310	=
Dissolved Solids		585	mg/L	10	7/17/2024			EPA-160.1	=
lodide	U	0.5	mg/L	0.5	7/17/2024			EPA-300.0	=
Chemical Oxygen Demand (COD)	J	12.9	mg/L	20	7/17/2024			EPA-410.4	=
Cyanide	UN	0.2	mg/L	0.2	7/17/2024			SW846-9012B	UJ
Total Organic Halides (TOX)	Н	36.6	ug/L	10	7/17/2024			SW846-9020B	J
Total Organic Carbon (TOC)	J	1.14	mg/L	2	7/17/2024			SW846-9060A	=

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: MW373 DOWN RGA Type: LRGA Period: 3rd Quarter 2024

AKGWA Well Tag #: 8004-4792 SAMPLE ID: MW373UG4-24R Sample Type: REG

AKGWA Well Tag #:	8004-4792		SAMPLE ID:		MW373UG4-24R		Sample Type: REG		
Parameter	Qualifier	Result	Units	Reporting Limit	Date Collected	Counting Error (+/-)	TPU	Method	Validation
Barometric Pressure Reading	•	29.96	Inches/Hg		7/30/2024				Χ
Conductivity		943	μmhos/cm		7/30/2024				Х
Depth to Water		35.4	ft		7/30/2024				Х
Dissolved Oxygen		1.14	mg/L		7/30/2024				Х
Eh (approx)		437	mV		7/30/2024				Х
рН		6.04	Std Unit		7/30/2024				Х
Temperature		65.9	deg F		7/30/2024				Х
Turbidity		0	NTU		7/30/2024				Х
1,2-Dibromo-3-chloropropane	UY2	0.0195	ug/L	0.0195	7/30/2024			SW846-8011	=
1,1,1,2-Tetrachloroethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,1,1-Trichloroethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=.
1,1,2,2-Tetrachloroethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=.
1,1,2-Trichloroethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,1-Dichloroethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,1-Dichloroethene	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,2,3-Trichloropropane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,2-Dibromoethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,2-Dichlorobenzene	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,2-Dichloroethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,2-Dichloropropane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
1,4-Dichlorobenzene	U	1	ug/L	1	7/30/2024			SW846-8260D	=
2-Butanone	U	5	ug/L	5	7/30/2024			SW846-8260D	=
2-Hexanone	U	5	ug/L	5	7/30/2024			SW846-8260D	=
4-Methyl-2-pentanone	U	5	ug/L	5	7/30/2024			SW846-8260D	=
Acetone	U	5	ug/L	5	7/30/2024			SW846-8260D	=
Acrolein	U	5	ug/L	5	7/30/2024			SW846-8260D	UJ
Acrylonitrile	U	5	ug/L	5	7/30/2024			SW846-8260D	UJ
Benzene	U	1	ug/L	1	7/30/2024			SW846-8260D	=
Bromochloromethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
Bromodichloromethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
Bromoform	U	1	ug/L	1	7/30/2024			SW846-8260D	UJ
Bromomethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
Carbon disulfide	U	5	ug/L	5	7/30/2024			SW846-8260D	=.
Carbon tetrachloride	U	1	ug/L	1	7/30/2024			SW846-8260D	=
Chlorobenzene	U	1	ug/L	1	7/30/2024			SW846-8260D	=
Chloroethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
Chloroform	U	1	ug/L	1	7/30/2024			SW846-8260D	=
Chloromethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
cis-1,2-Dichloroethene	U	1	ug/L	1	7/30/2024			SW846-8260D	=
cis-1,3-Dichloropropene	U	1	ug/L	1	7/30/2024			SW846-8260D	=
Dibromochloromethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
Dibromomethane	U	1	ug/L	1	7/30/2024			SW846-8260D	=
Ethylbenzene	U	1	ug/L	1	7/30/2024			SW846-8260D	=
lodomethane	U	5	ug/L	5	7/30/2024			SW846-8260D	=
Methylene chloride	U	5	ug/L	5	7/30/2024			SW846-8260D	=
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Styrene	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Tetrachloroethene	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Toluene	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Total Xylene	U	3	ug/L	3	7/30/2024	SW846-8260D	=
trans-1,2-Dichloroethene	U	1	ug/L	1	7/30/2024	SW846-8260D	=
trans-1,3-Dichloropropene	U	1	ug/L	1	7/30/2024	SW846-8260D	=
trans-1,4-Dichloro-2-butene	U	5	ug/L	5	7/30/2024	SW846-8260D	UJ
Trichloroethene		2.54	ug/L	1	7/30/2024	SW846-8260D	=
Trichlorofluoromethane	U	1	ug/L	1	7/30/2024	SW846-8260D	=
Vinyl acetate	U	5	ug/L	5	7/30/2024	SW846-8260D	=
Vinyl chloride	U	1	ug/L	1	7/30/2024	SW846-8260D	=

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: MW384 SIDE RGA Type: URGA Period: 3rd Quarter 2024

AKGWA Well Tag #: 8004-4809 SAMPLE ID: MW384SG4-24 Sample Type: REG

AKGWA Well Tag #:	8004-4809		SAMPLE ID:		MW384SG4-24		Sample Type: REG		
Parameter	Qualifier	Result	Units	Reporting Limit	Date Collected	Counting Error (+/-)	TPU	Method	Validation
Bromide		0.257	mg/L	0.2	7/23/2024			SW846-9056A	=
Chloride	ВЈ	21.3	mg/L	250	7/23/2024			SW846-9056A	U
luoride	JW	0.174	mg/L	4	7/23/2024			SW846-9056A	=
Nitrate as Nitrogen	J	0.784	mg/L	10	7/23/2024			SW846-9056A	=
iulfate		17.9	mg/L	0.4	7/23/2024			SW846-9056A	=
Barometric Pressure Reading		30.05	Inches/Hg		7/23/2024				Х
Conductivity		420	μmhos/cm		7/23/2024				Х
Depth to Water		41.15	ft		7/23/2024				Х
Dissolved Oxygen		4.7	mg/L		7/23/2024				Х
:h (approx)		428	mV		7/23/2024				Х
oH		6.11	Std Unit		7/23/2024				Х
emperature		63.8	deg F		7/23/2024				Х
urbidity		0	NTU		7/23/2024				X
lluminum	J	0.0402	mg/L	0.05	7/23/2024			SW846-6020B	=
Antimony	U	0.003	mg/L	0.003	7/23/2024			SW846-6020B	=
rsenic	U	0.005	mg/L	0.005	7/23/2024			SW846-6020B	=
arium		0.196	mg/L	0.003	7/23/2024			SW846-6020B	=
eryllium	U	0.0005	mg/L	0.004	7/23/2024			SW846-6020B	=
oron	0	0.0599	mg/L	0.0003	7/23/2024			SW846-6020B	=
admium	U	0.001	mg/L	0.013	7/23/2024			SW846-6020B	=
		23.3		0.001					
Calcium	1		mg/L		7/23/2024			SW846-6020B	=
Chromium	J	0.00405	mg/L	0.01	7/23/2024			SW846-6020B	=
Cobalt	U	0.001	mg/L	0.001	7/23/2024			SW846-6020B	=
Copper	J	0.00139	mg/L	0.002	7/23/2024			SW846-6020B	=
ron		0.554	mg/L	0.1	7/23/2024			SW846-6020B	=
ead	U	0.002	mg/L	0.002	7/23/2024			SW846-6020B	=
/agnesium		9.62	mg/L	0.03	7/23/2024			SW846-6020B	=
Manganese		0.0111	mg/L	0.005	7/23/2024			SW846-6020B	=
Aolybdenum	U	0.001	mg/L	0.001	7/23/2024			SW846-6020B	=
lickel	J	0.000912	mg/L	0.002	7/23/2024			SW846-6020B	=
otassium		1.33	mg/L	0.3	7/23/2024			SW846-6020B	=
hodium	U	0.005	mg/L	0.005	7/23/2024			SW846-6020B	=
elenium	U	0.005	mg/L	0.005	7/23/2024			SW846-6020B	=
ilver	U	0.001	mg/L	0.001	7/23/2024			SW846-6020B	=
odium		43.7	mg/L	0.25	7/23/2024			SW846-6020B	=
antalum	U	0.005	mg/L	0.005	7/23/2024			SW846-6020B	=
hallium	U	0.002	mg/L	0.002	7/23/2024			SW846-6020B	=
Iranium	U	0.0002	mg/L	0.0002	7/23/2024			SW846-6020B	=
anadium	U	0.02	mg/L	0.02	7/23/2024			SW846-6020B	=
inc	J	0.00423	mg/L	0.02	7/23/2024			SW846-6020B	=
/lercury	U	0.0002	mg/L	0.0002	7/23/2024			SW846-7470A	=
arium, Dissolved		0.194	mg/L	0.004	7/23/2024			SW846-6020B	J
Chromium, Dissolved	U	0.01	mg/L	0.01	7/23/2024	-		SW846-6020B	UJ
Jranium, Dissolved	U	0.0002	mg/L	0.0002	7/23/2024			SW846-6020B	UJ
			•						

Strontium-90	U	0.716	pCi/L	7.17	7/23/2024	3.94	3.94	EPA-905.0-M	=
Tritium	U	143	pCi/L	276	7/23/2024	164	166	EPA-906.0-M	=
Technetium-99		47.6	pCi/L	15.7	7/23/2024	11.7	12.8	HASL 300, Tc-02- RC M	=
Thorium-230	U	0.0246	pCi/L	1.76	7/23/2024	0.803	0.805	HASL 300, Th-01- RC M	=
Alpha activity	U	1.32	pCi/L	6.18	7/23/2024	3.11	3.12	SW846-9310	=
Beta activity		27.5	pCi/L	9.07	7/23/2024	7.94	9.16	SW846-9310	=
1,2-Dibromo-3-chloropropane	U	0.0193	ug/L	0.0193	7/23/2024			SW846-8011	=
I,1,1,2-Tetrachloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,1,1-Trichloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,1,2,2-Tetrachloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
I,1,2-Trichloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
I,1-Dichloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
I,1-Dichloroethene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,2,3-Trichloropropane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,2-Dibromoethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,2-Dichlorobenzene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,2-Dichloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
L,2-Dichloropropane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,4-Dichlorobenzene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
2-Butanone	U	5	ug/L	5	7/23/2024			SW846-8260D	=
2-Hexanone	U	5	ug/L	5	7/23/2024			SW846-8260D	=
-Methyl-2-pentanone	U	5	ug/L	5	7/23/2024			SW846-8260D	=
Acetone	U	5	ug/L ug/L	5	7/23/2024			SW846-8260D	=
Acrolein	U	5	ug/L	5	7/23/2024			SW846-8260D	UJ
	U	5	ug/L ug/L	5	7/23/2024			SW846-8260D	UJ UJ
Acrylonitrile Benzene	U	1	ug/L ug/L	1	7/23/2024			SW846-8260D	=
Bromochloromethane	U	1	ug/L	1	7/23/2024			SW846-8260D	
Bromodichloromethane	U			1	7/23/2024				
Bromoform	U	1	ug/L	1				SW846-8260D SW846-8260D	=
	U		ug/L		7/23/2024			SW846-8260D SW846-8260D	=
Bromomethane		1	ug/L	1	7/23/2024				=
Carbon disulfide	U	5	ug/L	5	7/23/2024			SW846-8260D	=
Carbon tetrachloride		1	ug/L	1	7/23/2024			SW846-8260D	=
Chlorobenzene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Chloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Chloroform	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Chloromethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
is-1,2-Dichloroethene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
cis-1,3-Dichloropropene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Dibromochloromethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Dibromomethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
thylbenzene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
odomethane	U	5	ug/L	5	7/23/2024			SW846-8260D	=
Methylene chloride	U	5	ug/L	5	7/23/2024			SW846-8260D	=
ityrene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
etrachloroethene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
oluene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Total Xylene	U	3	ug/L	3	7/23/2024			SW846-8260D	=
rans-1,2-Dichloroethene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
rans-1,3-Dichloropropene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
rans-1,4-Dichloro-2-butene	U	5	ug/L	5	7/23/2024			SW846-8260D	UJ
Trichloroethene		1.98	ug/L	1	7/23/2024			SW846-8260D	=
Trichlorofluoromethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=

Vinyl acetate	U	5	ug/L	5	7/23/2024	SW846-8260D	=
Vinyl chloride	U	1	ug/L	1	7/23/2024	SW846-8260D	=
Dissolved Solids		184	mg/L	10	7/23/2024	EPA-160.1	=
lodide	U	0.5	mg/L	0.5	7/23/2024	EPA-300.0	=
Chemical Oxygen Demand (COD)	UN	20	mg/L	20	7/23/2024	EPA-410.4	=
Cyanide	U	0.2	mg/L	0.2	7/23/2024	SW846-9012B	=
Total Organic Halides (TOX)	J	8.58	ug/L	10	7/23/2024	SW846-9020B	=
Total Organic Carbon (TOC)	J	0.813	mg/L	2	7/23/2024	SW846-9060A	=

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: MW385 SIDE RGA Type: LRGA Period: 3rd Quarter 2024

AKGWA Well Tag #: 8004-4810 SAMPLE ID: MW385SG4-24 Sample Type: REG

AKGWA Well Tag #:	8004-4810		SAMPLE ID:		MW385SG4-2	4	Sample Type: REG		
Parameter	Qualifier	Result	Units	Reporting Limit	Date Collected	Counting Error (+/-)	TPU	Method	Validation
Bromide		0.215	mg/L	0.2	7/23/2024			SW846-9056A	=
Chloride	BJ	20.9	mg/L	250	7/23/2024			SW846-9056A	U
luoride	JW	0.142	mg/L	4	7/23/2024			SW846-9056A	J
Nitrate as Nitrogen	J	0.658	mg/L	10	7/23/2024			SW846-9056A	=
Sulfate		19.2	mg/L	0.4	7/23/2024			SW846-9056A	=
Barometric Pressure Reading		30.05	Inches/Hg		7/23/2024				Х
Conductivity		410	μmhos/cm		7/23/2024				Х
Depth to Water		41.54	ft		7/23/2024				Х
Dissolved Oxygen		1.79	mg/L		7/23/2024				Х
Eh (approx)		390	mV		7/23/2024				Х
Н		6.32	Std Unit		7/23/2024				Х
emperature		62.9	deg F		7/23/2024				Х
urbidity		1.16	NTU		7/23/2024				Х
luminum	U	0.05	mg/L	0.05	7/23/2024			SW846-6020B	=
Antimony	U	0.003	mg/L	0.003	7/23/2024			SW846-6020B	=
Arsenic	U	0.005	mg/L	0.005	7/23/2024			SW846-6020B	=
Barium		0.201	mg/L	0.004	7/23/2024			SW846-6020B	=
Beryllium	U	0.0005	mg/L	0.0005	7/23/2024			SW846-6020B	=
Soron		0.0767	mg/L	0.015	7/23/2024			SW846-6020B	=
Cadmium	U	0.001	mg/L	0.001	7/23/2024			SW846-6020B	=
alcium		24.1	mg/L	0.2	7/23/2024			SW846-6020B	=
Chromium	U	0.01	mg/L	0.01	7/23/2024			SW846-6020B	=
Cobalt	J	0.000461	mg/L	0.001	7/23/2024			SW846-6020B	=
Copper	J	0.00111	mg/L	0.002	7/23/2024			SW846-6020B	=
ron	J	0.0381	mg/L	0.1	7/23/2024			SW846-6020B	=
ead	U	0.002	mg/L	0.002	7/23/2024			SW846-6020B	=
Magnesium		9.36	mg/L	0.03	7/23/2024			SW846-6020B	=
Manganese	J	0.00291	mg/L	0.005	7/23/2024			SW846-6020B	=
Molybdenum		0.000225	mg/L	0.001	7/23/2024			SW846-6020B	=
lickel	J	0.0011	mg/L	0.002	7/23/2024			SW846-6020B	=
otassium		1.52	mg/L	0.3	7/23/2024			SW846-6020B	=
Rhodium	U	0.005	mg/L	0.005	7/23/2024			SW846-6020B	=
elenium	U	0.005	mg/L	0.005	7/23/2024			SW846-6020B	=
ilver	U	0.001	mg/L	0.001	7/23/2024			SW846-6020B	=
odium		41.9	mg/L	0.25	7/23/2024			SW846-6020B	=
antalum	U	0.005	mg/L	0.005	7/23/2024			SW846-6020B	=
hallium	U	0.002	mg/L	0.002	7/23/2024			SW846-6020B	=
Iranium	U	0.0002	mg/L	0.0002	7/23/2024			SW846-6020B	=
anadium	U	0.002	mg/L	0.0002	7/23/2024			SW846-6020B	=
inc	U	0.02	mg/L	0.02	7/23/2024			SW846-6020B	=
Mercury	U	0.0002	mg/L	0.0002	7/23/2024			SW846-7470A	
arium, Dissolved	U	0.199	mg/L	0.0002	7/23/2024			SW846-6020B	
Chromium, Dissolved	U	0.199	mg/L	0.004	7/23/2024			SW846-6020B	UJ J
· · · · · · · · · · · · · · · · · · ·	U	0.0002		0.0002				SW846-6020B	
Jranium, Dissolved			mg/L		7/23/2024	0.540	0.55		UJ
Radium-226	U	0.457	pCi/L	0.726	7/23/2024	0.549	0.55	AN-1418	=

Strontium-90	U	-1.05	pCi/L	4.55	7/23/2024	2.34	2.34	EPA-905.0-M	=
Tritium	U	-15.6	pCi/L	271	7/23/2024	149	149	EPA-906.0-M	=
Technetium-99		45.9	pCi/L	15.5	7/23/2024	11.5	12.6	HASL 300, Tc-02- RC M	=
Thorium-230	U	-0.205	pCi/L	1.76	7/23/2024	0.664	0.665	HASL 300, Th-01- RC M	=
Alpha activity	U	2.92	pCi/L	6.44	7/23/2024	3.84	3.87	SW846-9310	=
Beta activity		13.4	pCi/L	9.43	7/23/2024	6.64	7.02	SW846-9310	=
1,2-Dibromo-3-chloropropane	U	0.0188	ug/L	0.0188	7/23/2024			SW846-8011	=
1,1,1,2-Tetrachloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,1,1-Trichloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,1,2,2-Tetrachloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,1,2-Trichloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,1-Dichloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,1-Dichloroethene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,2,3-Trichloropropane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,2-Dibromoethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,2-Dichlorobenzene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,2-Dichloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,2-Dichloropropane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,4-Dichlorobenzene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
2-Butanone	U	5	ug/L	5	7/23/2024			SW846-8260D	=
2-Hexanone	U	5	ug/L	5	7/23/2024			SW846-8260D	=
4-Methyl-2-pentanone	U	5	ug/L	5	7/23/2024			SW846-8260D	=
Acetone	U	5	ug/L	5	7/23/2024			SW846-8260D	=
Acrolein	U	5	ug/L	5	7/23/2024			SW846-8260D	UJ
Acrylonitrile	U	5	ug/L	5	7/23/2024			SW846-8260D	UJ
Benzene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Bromochloromethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Bromodichloromethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Bromoform	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Bromomethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Carbon disulfide	U	5	ug/L	5	7/23/2024			SW846-8260D	=
Carbon tetrachloride	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Chlorobenzene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Chloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Chloroform	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Chloromethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
cis-1,2-Dichloroethene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
cis-1,3-Dichloropropene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Dibromochloromethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Dibromomethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Ethylbenzene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Iodomethane	U	5	ug/L	5	7/23/2024			SW846-8260D	=
Methylene chloride	U	5	ug/L	5	7/23/2024			SW846-8260D	=
Styrene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Tetrachloroethene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Toluene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Total Xylene	U	3	ug/L	3	7/23/2024			SW846-8260D	=
trans-1,2-Dichloroethene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
trans-1,3-Dichloropropene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
trans-1,4-Dichloro-2-butene	U	5	ug/L	5	7/23/2024			SW846-8260D	UJ
Trichloroethene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Trichlorofluoromethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=

Vinyl acetate	U	5	ug/L	5	7/23/2024	SW846-8260D =
Vinyl chloride	U	1	ug/L	1	7/23/2024	SW846-8260D =
Dissolved Solids		201	mg/L	10	7/23/2024	EPA-160.1 =
lodide	U	0.5	mg/L	0.5	7/23/2024	EPA-300.0 =
Chemical Oxygen Demand (COD)	UN	20	mg/L	20	7/23/2024	EPA-410.4 =
Cyanide	U	0.2	mg/L	0.2	7/23/2024	SW846-9012B =
Total Organic Halides (TOX)		16.5	ug/L	10	7/23/2024	SW846-9020B =
Total Organic Carbon (TOC)	J	0.697	mg/L	2	7/23/2024	SW846-9060A =

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: MW386 SIDE RGA Type: UCRS Period: 3rd Quarter 2024

AKGWA Well Tag #: 8004-4804 SAMPLE ID: MW386SG4-24 Sample Type: REG

AKGWA Well Tag #:	8004-4804		SAMPLE ID:		MW386SG4-24		Sample Ty		
Parameter	Qualifier	Result	Units	Reporting Limit	Date Collected	Counting Error (+/-)	TPU	Method	Validation
Bromide	J	0.109	mg/L	0.2	7/23/2024			SW846-9056A	=
Chloride	ВЈ	9.94	mg/L	250	7/23/2024			SW846-9056A	U
Fluoride	JW	0.784	mg/L	4	7/23/2024			SW846-9056A	=
Nitrate as Nitrogen	U	10	mg/L	10	7/23/2024			SW846-9056A	=
Sulfate		38.8	mg/L	0.8	7/23/2024			SW846-9056A	=
Barometric Pressure Reading		30.06	Inches/Hg		7/23/2024				Х
Conductivity		586	μmhos/cm		7/23/2024				Х
Depth to Water		19.56	ft		7/23/2024				Х
Dissolved Oxygen		2.1	mg/L		7/23/2024				Х
Eh (approx)		331	mV		7/23/2024				Х
pH		6.75	Std Unit		7/23/2024				Х
Temperature		62.7	deg F		7/23/2024				Х
Turbidity		0	NTU		7/23/2024				Х
Aluminum	U	0.05	mg/L	0.05	7/23/2024			SW846-6020B	=
Antimony	U	0.003	mg/L	0.003	7/23/2024			SW846-6020B	=
Arsenic	J	0.0024	mg/L	0.005	7/23/2024			SW846-6020B	=
Barium		0.157	mg/L	0.004	7/23/2024			SW846-6020B	=
Beryllium	U	0.0005	mg/L	0.0005	7/23/2024			SW846-6020B	=
Boron		0.0186	mg/L	0.015	7/23/2024			SW846-6020B	=
 Cadmium	U	0.001	mg/L	0.001	7/23/2024			SW846-6020B	=
Calcium		20.3	mg/L	0.2	7/23/2024			SW846-6020B	=
Chromium	U	0.01	mg/L	0.01	7/23/2024			SW846-6020B	=
Cobalt		0.00466	mg/L	0.001	7/23/2024			SW846-6020B	=
Copper	J	0.00152	mg/L	0.002	7/23/2024			SW846-6020B	=
Iron		0.132	mg/L	0.1	7/23/2024			SW846-6020B	=
Lead	U	0.002	mg/L	0.002	7/23/2024			SW846-6020B	=
Magnesium		8.31	mg/L	0.03	7/23/2024			SW846-6020B	=
Manganese		1.17	mg/L	0.05	7/23/2024			SW846-6020B	=
Molybdenum	J	0.000917	mg/L	0.001	7/23/2024			SW846-6020B	=
Nickel	<u> </u>	0.00353	mg/L	0.002	7/23/2024			SW846-6020B	=
Potassium	J	0.281	mg/L	0.3	7/23/2024			SW846-6020B	=
Rhodium	U	0.005	mg/L	0.005	7/23/2024			SW846-6020B	=
Selenium	U	0.005	mg/L	0.005	7/23/2024			SW846-6020B	=
Silver	U	0.003	mg/L	0.003	7/23/2024			SW846-6020B	<u>-</u> =
Sodium	0	110	mg/L	2.5	7/23/2024			SW846-6020B	=
Tantalum	U	0.005	mg/L	0.005	7/23/2024			SW846-6020B	=
Thallium	U	0.003	mg/L	0.003	7/23/2024			SW846-6020B	=
	U								
Jranium Vanadium	U	0.0002	mg/L mg/L	0.0002	7/23/2024			SW846-6020B SW846-6020B	=
	U				7/23/2024				=
Zinc		0.02	mg/L	0.02	7/23/2024			SW846-6020B	=
Mercury	U	0.0002	mg/L	0.0002	7/23/2024			SW846-7470A	=
Barium, Dissolved		0.151	mg/L	0.004	7/23/2024			SW846-6020B	J
Chromium, Dissolved	U	0.01	mg/L	0.01	7/23/2024			SW846-6020B	UJ
Uranium, Dissolved	U	0.0002	mg/L	0.0002	7/23/2024	0	0	SW846-6020B	UJ
Radium-226	U	0.412	pCi/L	0.747	7/23/2024	0.555	0.556	AN-1418	=

Strontium-90	U	0.244	pCi/L	3.35	7/23/2024	1.74	1.74	EPA-905.0-M	=
 Fritium	U	118	pCi/L	280	7/23/2024	164	166	EPA-906.0-M	=
Technetium-99	U	-9.74	pCi/L	15.4	7/23/2024	7.87	7.87	HASL 300, Tc-02- RC M	UJ
horium-230	U	-0.491	pCi/L	1.84	7/23/2024	0.5	0.501	HASL 300, Th-01- RC M	=
lpha activity	U	1.16	pCi/L	9.53	7/23/2024	4.72	4.73	SW846-9310	=
Beta activity	U	-2.69	pCi/L	9.32	7/23/2024	4.48	4.48	SW846-9310	=
.,2-Dibromo-3-chloropropane	U	0.0193	ug/L	0.0193	7/23/2024			SW846-8011	=
.,1,1,2-Tetrachloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
,1,1-Trichloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
,1,2,2-Tetrachloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
,1,2-Trichloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
,1-Dichloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
,1-Dichloroethene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
,2,3-Trichloropropane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
,2-Dibromoethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
,2-Dichlorobenzene	U	1	ug/L	1	7/23/2024			SW846-8260D	
,2-Dichloroethane	U	1	ug/L ug/L	1	7/23/2024			SW846-8260D	
,2-Dichloropropane	U	1	ug/L ug/L	1	7/23/2024			SW846-8260D SW846-8260D	
,4-Dichlorobenzene	U	1	ug/L ug/L	1	7/23/2024			SW846-8260D SW846-8260D	=
-Butanone	U	5		5	7/23/2024			SW846-8260D	
	U		ug/L		7/23/2024				
-Hexanone		5	ug/L	5				SW846-8260D	=
-Methyl-2-pentanone	U	5	ug/L	5	7/23/2024			SW846-8260D	=
cetone		5	ug/L	5	7/23/2024			SW846-8260D	=
crolein	U	5	ug/L	5	7/23/2024			SW846-8260D	UJ
crylonitrile	U 	5	ug/L	5	7/23/2024			SW846-8260D	UJ
enzene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
romochloromethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
romodichloromethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
romoform	U	1	ug/L	1	7/23/2024			SW846-8260D	=
romomethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
arbon disulfide	U	5	ug/L	5	7/23/2024			SW846-8260D	=
arbon tetrachloride	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Chlorobenzene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
hloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
hloroform	U	1	ug/L	1	7/23/2024			SW846-8260D	=
hloromethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
is-1,2-Dichloroethene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
is-1,3-Dichloropropene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
ibromochloromethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
ibromomethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
thylbenzene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
odomethane	U	5	ug/L	5	7/23/2024			SW846-8260D	=
1ethylene chloride	U	5	ug/L	5	7/23/2024			SW846-8260D	=
tyrene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
etrachloroethene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
oluene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
otal Xylene	U	3	ug/L	3	7/23/2024			SW846-8260D	=
rans-1,2-Dichloroethene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
rans-1,3-Dichloropropene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
rans-1,4-Dichloro-2-butene	U	5	ug/L	5	7/23/2024			SW846-8260D	UJ
richloroethene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
	U		ug/L		7/23/2024				

Vinyl acetate	U	5	ug/L	5	7/23/2024	SW846-8260D	=
Vinyl chloride	U	1	ug/L	1	7/23/2024	SW846-8260D	=
Dissolved Solids		364	mg/L	10	7/23/2024	EPA-160.1	=
lodide	U	0.5	mg/L	0.5	7/23/2024	EPA-300.0	=
Chemical Oxygen Demand (COD)	N	22.4	mg/L	20	7/23/2024	EPA-410.4	=
Cyanide	U	0.2	mg/L	0.2	7/23/2024	SW846-9012B	=
Total Organic Halides (TOX)		146	ug/L	10	7/23/2024	SW846-9020B	=
Total Organic Carbon (TOC)		5.53	mg/L	2	7/23/2024	SW846-9060A	=

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: MW387 DOWN RGA Type: URGA Period: 3rd Quarter 2024

AKGWA Well Tag #: 8004-4815 SAMPLE ID: MW387SG4-24 Sample Type: REG

AKGWA Well Tag #:	8004-4815		SAMPLE ID:		MW387SG4-24		Sample Type: REG		
Parameter	Qualifier	Result	Units	Reporting Limit	Date Collected	Counting Error (+/-)	TPU	Method	Validation
Bromide	•	0.475	mg/L	0.2	7/22/2024			SW846-9056A	=
Chloride	JW	36.9	mg/L	250	7/22/2024			SW846-9056A	J
Fluoride	*J	0.903	mg/L	4	7/22/2024			SW846-9056A	=
Nitrate as Nitrogen	J	0.899	mg/L	10	7/22/2024			SW846-9056A	=
Sulfate		27.3	mg/L	2	7/22/2024			SW846-9056A	=
Barometric Pressure Reading		30.02	Inches/Hg		7/22/2024				Х
Conductivity		566	μmhos/cm		7/22/2024				Х
Depth to Water		38.81	ft		7/22/2024				Х
Dissolved Oxygen		4.53	mg/L		7/22/2024				Х
Eh (approx)		413	mV		7/22/2024				Х
oH		6.19	Std Unit		7/22/2024				Х
		66.7	deg F		7/22/2024				Х
urbidity		0.06	NTU		7/22/2024				X
Aluminum		0.23	mg/L	0.05	7/22/2024			SW846-6020B	=
Antimony	U	0.003	mg/L	0.003	7/22/2024			SW846-6020B	=
Arsenic	U	0.005	mg/L	0.005	7/22/2024			SW846-6020B	=
Barium		0.117	mg/L	0.004	7/22/2024			SW846-6020B	=
Beryllium	U	0.0005	mg/L	0.0005	7/22/2024			SW846-6020B	=
Boron		0.0458	mg/L	0.015	7/22/2024			SW846-6020B	=
Cadmium	U	0.001	mg/L	0.001	7/22/2024			SW846-6020B	=
Calcium		37.4	mg/L	0.2	7/22/2024			SW846-6020B	=
Chromium	J	0.00464	mg/L	0.01	7/22/2024			SW846-6020B	=
Cobalt	J	0.000371	mg/L	0.001	7/22/2024			SW846-6020B	=
Copper	J	0.00148	mg/L	0.002	7/22/2024			SW846-6020B	=
ron		0.821	mg/L	0.1	7/22/2024			SW846-6020B	=
.ead	U	0.002	mg/L	0.002	7/22/2024			SW846-6020B	=
Magnesium	-	16.3	mg/L	0.03	7/22/2024			SW846-6020B	=
Manganese		0.0333	mg/L	0.005	7/22/2024			SW846-6020B	=
Molybdenum	U	0.001	mg/L	0.001	7/22/2024			SW846-6020B	=
Nickel	J	0.00117	mg/L	0.002	7/22/2024			SW846-6020B	=
Potassium		1.82	mg/L	0.3	7/22/2024			SW846-6020B	=
Rhodium	U	0.005	mg/L	0.005	7/22/2024			SW846-6020B	=
Selenium	U	0.005	mg/L	0.005	7/22/2024			SW846-6020B	=
Silver	U	0.001	mg/L	0.001	7/22/2024			SW846-6020B	=
Sodium		48.6	mg/L	2.5	7/22/2024			SW846-6020B	=
- Tantalum	UN	0.005	mg/L	0.005	7/22/2024			SW846-6020B	UJ
Thallium	U	0.002	mg/L	0.002	7/22/2024			SW846-6020B	=
Jranium	U	0.0002	mg/L	0.0002	7/22/2024			SW846-6020B	=
/anadium	U	0.002	mg/L	0.00	7/22/2024			SW846-6020B	=
linc	J	0.0073	mg/L	0.02	7/22/2024			SW846-6020B	=
Mercury	U	0.0002	mg/L	0.0002	7/22/2024			SW846-7470A	=
Barium, Dissolved		0.0002	mg/L	0.0002	7/22/2024			SW846-6020B	J
Chromium, Dissolved	J	0.00367	mg/L	0.004	7/22/2024			SW846-6020B	, J
Jranium, Dissolved	U J	0.00307	mg/L	0.0002	7/22/2024			SW846-6020B	, ,
·						0.750	0.761		
Radium-226	U	0.892	pCi/L	0.954	7/22/2024	0.759	0.761	AN-1418	=

Strontium-90	U	-2.32	pCi/L	5.02	7/22/2024	2.29	2.29	EPA-905.0-M	UJ
Tritium	U	-75.2	pCi/L	240	7/22/2024	132	132	EPA-906.0-M	=
Technetium-99		34.6	pCi/L	15.6	7/22/2024	10.9	11.6	HASL 300, Tc-02- RC M	=
Thorium-230	U	0.0878	pCi/L	0.736	7/22/2024	0.375	0.377	HASL 300, Th-01- RC M	=
Alpha activity	U	6.61	pCi/L	6.95	7/22/2024	5.12	5.24	SW846-9310	=
Beta activity		38.7	pCi/L	9.35	7/22/2024	8.97	11	SW846-9310	=
1,2-Dibromo-3-chloropropane	U	0.019	ug/L	0.019	7/22/2024			SW846-8011	=
1,1,1,2-Tetrachloroethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
.,1,1-Trichloroethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
.,1,2,2-Tetrachloroethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
,1,2-Trichloroethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
,1-Dichloroethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
,1-Dichloroethene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
,2,3-Trichloropropane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
.,2-Dibromoethane	U	1	ug/L	1	7/22/2024			SW846-8260D	
,,2-Dichlorobenzene	U	1	ug/L ug/L	1	7/22/2024			SW846-8260D	
,2-Dichloroethane	U	1	ug/L ug/L	1	7/22/2024			SW846-8260D	
•	U	1		1	7/22/2024			SW846-8260D SW846-8260D	
,2-Dichloropropane ,4-Dichlorobenzene	U	1	ug/L ug/L	1	7/22/2024			SW846-8260D SW846-8260D	=
·	U							SW846-8260D	
-Butanone		5	ug/L	5	7/22/2024				=
-Hexanone	U	5	ug/L	5	7/22/2024			SW846-8260D	=
-Methyl-2-pentanone	U	5	ug/L	5	7/22/2024			SW846-8260D	=
cetone	U	5	ug/L	5	7/22/2024			SW846-8260D	=
crolein	U	5	ug/L	5	7/22/2024			SW846-8260D	UJ
crylonitrile	U	5	ug/L	5	7/22/2024			SW846-8260D	UJ
enzene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
romochloromethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
romodichloromethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
romoform	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Bromomethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Carbon disulfide	U	5	ug/L	5	7/22/2024			SW846-8260D	=
Carbon tetrachloride	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Chlorobenzene	U	1	-	1	7/22/2024			SW846-8260D	=
hloroethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Chloroform	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Chloromethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
is-1,2-Dichloroethene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
is-1,3-Dichloropropene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Dibromochloromethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Dibromomethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
thylbenzene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
odomethane	U	5	ug/L	5	7/22/2024			SW846-8260D	=
Nethylene chloride	J	0.79	ug/L	5	7/22/2024			SW846-8260D	=
tyrene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
etrachloroethene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
oluene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
otal Xylene	U	3	ug/L	3	7/22/2024	-	-	SW846-8260D	=
rans-1,2-Dichloroethene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
rans-1,3-Dichloropropene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
rans-1,4-Dichloro-2-butene	U	5	ug/L	5	7/22/2024			SW846-8260D	UJ
richloroethene	J	0.46	ug/L	1	7/22/2024			SW846-8260D	=
	U		ug/L		7/22/2024			SW846-8260D	

Vinyl acetate	U	5	ug/L	5	7/22/2024	SW846-8260D =
Vinyl chloride	U	1	ug/L	1	7/22/2024	SW846-8260D =
Dissolved Solids		300	mg/L	10	7/22/2024	EPA-160.1 =
lodide	U	0.5	mg/L	0.5	7/22/2024	EPA-300.0 =
Chemical Oxygen Demand (COD)		42.1	mg/L	20	7/22/2024	EPA-410.4 =
Cyanide	U	0.2	mg/L	0.2	7/22/2024	SW846-9012B =
Total Organic Halides (TOX)	J	7.58	ug/L	10	7/22/2024	SW846-9020B =
Total Organic Carbon (TOC)	J	0.887	mg/L	2	7/22/2024	SW846-9060A =

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: MW388 DOWN RGA Type: LRGA Period: 3rd Quarter 2024

AKGWA Well Tag #: 8004-4816 SAMPLE ID: MW388SG4-24 Sample Type: REG

AKGWA Well Tag #:	8004-4816	SAMPLE ID: MV		MW388SG4-24		Sample Ty			
Parameter	Qualifier	Result	Units	Reporting Limit	Date Collected	Counting Error (+/-)	TPU	Method	Validation
Bromide		0.429	mg/L	0.2	7/22/2024			SW846-9056A	=
Chloride	JW	33.2	mg/L	250	7/22/2024			SW846-9056A	=
Fluoride	*J	0.378	mg/L	4	7/22/2024			SW846-9056A	=
Nitrate as Nitrogen	J	0.889	mg/L	10	7/22/2024			SW846-9056A	=
Sulfate		20.6	mg/L	2	7/22/2024			SW846-9056A	=
Barometric Pressure Reading		30.02	Inches/Hg		7/22/2024				Х
Conductivity		466	μmhos/cm		7/22/2024				Х
Depth to Water		38.79	ft		7/22/2024				Х
Dissolved Oxygen		4.38	mg/L		7/22/2024				Х
Eh (approx)		396	mV		7/22/2024				Х
оН		5.99	Std Unit		7/22/2024				Х
Temperature		63.7	deg F		7/22/2024				Х
Turbidity		3.66	NTU		7/22/2024				Х
Aluminum		0.0518	mg/L	0.05	7/22/2024			SW846-6020B	=
Antimony	U	0.003	mg/L	0.003	7/22/2024			SW846-6020B	=
Arsenic	U	0.005	mg/L	0.005	7/22/2024			SW846-6020B	=
Barium		0.177	mg/L	0.004	7/22/2024			SW846-6020B	=
Beryllium	U	0.0005	mg/L	0.0005	7/22/2024			SW846-6020B	=
Boron		0.0346	mg/L	0.015	7/22/2024			SW846-6020B	=
 Cadmium	U	0.001	mg/L	0.001	7/22/2024			SW846-6020B	=
Calcium		29.3	mg/L	0.2	7/22/2024			SW846-6020B	=
Chromium	U	0.01	mg/L	0.01	7/22/2024			SW846-6020B	=
Cobalt	U	0.001	mg/L	0.001	7/22/2024			SW846-6020B	=
Copper	J	0.000981	mg/L	0.002	7/22/2024			SW846-6020B	=
Iron		0.251	mg/L	0.1	7/22/2024			SW846-6020B	=
Lead	U	0.002	mg/L	0.002	7/22/2024			SW846-6020B	=
Magnesium		13.2	mg/L	0.03	7/22/2024			SW846-6020B	=
Manganese	J	0.00373	mg/L	0.005	7/22/2024			SW846-6020B	=
Molybdenum	U	0.001	mg/L	0.001	7/22/2024			SW846-6020B	=
Nickel	J	0.000774	mg/L	0.002	7/22/2024			SW846-6020B	=
Potassium		1.8	mg/L	0.3	7/22/2024			SW846-6020B	=
Rhodium	U	0.005	mg/L	0.005	7/22/2024			SW846-6020B	=
Selenium	U	0.005	mg/L	0.005	7/22/2024			SW846-6020B	=
Silver	U	0.001	mg/L	0.001	7/22/2024			SW846-6020B	=
Sodium		48.2	mg/L	0.25	7/22/2024			SW846-6020B	=
Tantalum	UN	0.005	mg/L	0.005	7/22/2024			SW846-6020B	=
Thallium	U	0.002	mg/L	0.002	7/22/2024			SW846-6020B	=
Uranium	U	0.0002	mg/L	0.0002	7/22/2024			SW846-6020B	=
Vanadium	U	0.02	mg/L	0.02	7/22/2024			SW846-6020B	=
Zinc	J	0.00462	mg/L	0.02	7/22/2024			SW846-6020B	=
Mercury	U	0.0002	mg/L	0.0002	7/22/2024			SW846-7470A	=
Barium, Dissolved		0.171	mg/L	0.004	7/22/2024			SW846-6020B	J
Chromium, Dissolved	U	0.01	mg/L	0.004	7/22/2024			SW846-6020B	n
Uranium, Dissolved	U	0.0002	mg/L	0.0002	7/22/2024			SW846-6020B	UJ UJ
Radium-226		1.85	pCi/L	0.822	7/22/2024	0.984	0.992	AN-1418	=
		1.00	P = 1/ L	0.022	,, 22,2024	5.564	0.552	, 1710	_

Strontium-90	U	-0.5	pCi/L	7.27	7/22/2024	3.89	3.89	EPA-905.0-M	=
Tritium	U	-72	pCi/L	263	7/22/2024	145	145	EPA-906.0-M	=
Technetium-99	U	2.57	pCi/L	18.7	7/22/2024	10.7	10.7	HASL 300, Tc-02- RC M	=
Thorium-230	U	0.193	pCi/L	1.14	7/22/2024	0.608	0.611	HASL 300, Th-01- RC M	=
Alpha activity	U	2.16	pCi/L	6.41	7/22/2024	3.56	3.59	SW846-9310	=
Beta activity		25.8	pCi/L	9.26	7/22/2024	7.82	8.93	SW846-9310	=
1,2-Dibromo-3-chloropropane	U	0.0189	ug/L	0.0189	7/22/2024			SW846-8011	=
1,1,1,2-Tetrachloroethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
1,1,1-Trichloroethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
1,1,2,2-Tetrachloroethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
1,1,2-Trichloroethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
1,1-Dichloroethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
1,1-Dichloroethene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
1,2,3-Trichloropropane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
1,2-Dibromoethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
1,2-Dichlorobenzene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
1,2-Dichloroethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
1,2-Dichloropropane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
1,4-Dichlorobenzene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
2-Butanone	U	5	ug/L	5	7/22/2024			SW846-8260D	=
2-Hexanone	U	5	ug/L	5	7/22/2024			SW846-8260D	=
4-Methyl-2-pentanone	U	5	ug/L	5	7/22/2024			SW846-8260D	=
Acetone	U	5	ug/L	5	7/22/2024			SW846-8260D	=
Acrolein	U	5	ug/L	5	7/22/2024			SW846-8260D	UJ
Acrylonitrile	U	5	ug/L	5	7/22/2024			SW846-8260D	UJ
Benzene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Bromochloromethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Bromodichloromethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Bromoform	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Bromomethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Carbon disulfide	U	5	ug/L	5	7/22/2024			SW846-8260D	=
Carbon tetrachloride	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Chlorobenzene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Chloroethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Chloroform	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Chloromethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
cis-1,2-Dichloroethene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
cis-1,3-Dichloropropene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Dibromochloromethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Dibromomethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Ethylbenzene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
lodomethane	U	5	ug/L	5	7/22/2024			SW846-8260D	=
Methylene chloride	U	5	ug/L	5	7/22/2024			SW846-8260D	=
Styrene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Tetrachloroethene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Toluene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Total Xylene	U	3	ug/L	3	7/22/2024			SW846-8260D	=
trans-1,2-Dichloroethene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
trans-1,3-Dichloropropene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
trans-1,4-Dichloro-2-butene	U	5	ug/L	5	7/22/2024			SW846-8260D	UJ
Trichloroethene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Trichlorofluoromethane	U	1		1	7/22/2024			SW846-8260D	=

Vinyl acetate	U	5	ug/L	5	7/22/2024	SW846-8260D =	=
Vinyl chloride	U	1	ug/L	1	7/22/2024	SW846-8260D =	=
Dissolved Solids		248	mg/L	10	7/22/2024	EPA-160.1 =	=
lodide	U	0.5	mg/L	0.5	7/22/2024	EPA-300.0 =	=
Chemical Oxygen Demand (COD)	U	20	mg/L	20	7/22/2024	EPA-410.4 =	=
Cyanide	U	0.2	mg/L	0.2	7/22/2024	SW846-9012B =	=
Total Organic Halides (TOX)		12.1	ug/L	10	7/22/2024	SW846-9020B =	=
Total Organic Carbon (TOC)	J	0.908	mg/L	2	7/22/2024	SW846-9060A =	=

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: MW390 DOWN RGA Type: UCRS Period: 3rd Quarter 2024

AKGWA Well Tag #: 8004-4811 SAMPLE ID: MW390SG4-24 Sample Type: REG

AKGWA Well Tag #:	8004-4811		SAMPLE ID:		MW390SG4-24		Sample Ty		
Parameter	Qualifier	Result	Units	Reporting Limit	Date Collected	Counting Error (+/-)	TPU	Method	Validation
Bromide		0.235	mg/L	0.2	7/23/2024			SW846-9056A	=
Chloride	BJ	20.7	mg/L	250	7/23/2024			SW846-9056A	U
-luoride	JW	0.253	mg/L	4	7/23/2024			SW846-9056A	=
Nitrate as Nitrogen	J	1.12	mg/L	10	7/23/2024			SW846-9056A	=
Sulfate		33.6	mg/L	2	7/23/2024			SW846-9056A	=
Barometric Pressure Reading		30.04	Inches/Hg		7/23/2024				Х
Conductivity		600	μmhos/cm		7/23/2024				Х
Depth to Water		36.31	ft		7/23/2024				Х
Dissolved Oxygen		3	mg/L		7/23/2024				Х
Eh (approx)		479	mV		7/23/2024				Х
Н		6.34	Std Unit		7/23/2024				Х
emperature		63.2	deg F		7/23/2024				Х
urbidity		0	NTU		7/23/2024				Х
Aluminum		0.1	mg/L	0.05	7/23/2024			SW846-6020B	=
Antimony	U	0.003	mg/L	0.003	7/23/2024			SW846-6020B	=
Arsenic	U	0.005	mg/L	0.005	7/23/2024			SW846-6020B	=
Barium		0.225	mg/L	0.004	7/23/2024			SW846-6020B	=
eryllium	U	0.0005	mg/L	0.0005	7/23/2024			SW846-6020B	=
oron		0.0221	mg/L	0.015	7/23/2024			SW846-6020B	=
admium	U	0.001	mg/L	0.001	7/23/2024			SW846-6020B	=
alcium		27.7	mg/L	0.2	7/23/2024			SW846-6020B	=
Chromium	U	0.01	mg/L	0.01	7/23/2024			SW846-6020B	=
obalt	U	0.001	mg/L	0.001	7/23/2024			SW846-6020B	=
Copper	J	0.00173	mg/L	0.002	7/23/2024			SW846-6020B	=
ron		0.101	mg/L	0.1	7/23/2024			SW846-6020B	=
ead	U	0.002	mg/L	0.002	7/23/2024			SW846-6020B	=
/Jagnesium		11.8	mg/L	0.03	7/23/2024			SW846-6020B	=
√anganese	J	0.0015	mg/L	0.005	7/23/2024			SW846-6020B	=
лоlybdenum	J	0.000333	mg/L	0.001	7/23/2024			SW846-6020B	=
lickel	J	0.0015	mg/L	0.002	7/23/2024			SW846-6020B	=
Potassium		0.347	mg/L	0.3	7/23/2024			SW846-6020B	=
Rhodium	U	0.005	mg/L	0.005	7/23/2024			SW846-6020B	=
elenium	U	0.005	mg/L	0.005	7/23/2024			SW846-6020B	=
ilver	U	0.001	mg/L	0.001	7/23/2024			SW846-6020B	=
odium	-	91	mg/L	2.5	7/23/2024			SW846-6020B	=
antalum	U	0.005	mg/L	0.005	7/23/2024			SW846-6020B	=
hallium	U	0.002	mg/L	0.002	7/23/2024			SW846-6020B	=
Jranium	J	0.000197	mg/L	0.0002	7/23/2024			SW846-6020B	=
anadium	U	0.02	mg/L	0.02	7/23/2024			SW846-6020B	=
inc	J	0.00648	mg/L	0.02	7/23/2024			SW846-6020B	=
Mercury	U	0.0002	mg/L	0.0002	7/23/2024			SW846-7470A	=
arium, Dissolved		0.23	mg/L	0.004	7/23/2024			SW846-6020B	J
Chromium, Dissolved	U	0.23	mg/L	0.01	7/23/2024			SW846-6020B	ΛΊ
Jranium, Dissolved	J	0.00019	mg/L	0.0002	7/23/2024			SW846-6020B	UJ
Radium-226	J	0.00013	pCi/L	0.686	7/23/2024	0.671	0.674	AN-1418	=
AGUIUIII-ZZU		0.771	pci/ L	0.000	1/23/2024	0.071	0.074	WIN-T410	-

Strontium-90	U	-0.836	pCi/L	3.06	7/23/2024	1.41	1.41	EPA-905.0-M	=
Tritium Tritium	U	78.2	pCi/L	280	7/23/2024	161	162	EPA-906.0-M	=
Technetium-99		57.4	pCi/L	16.1	7/23/2024	12.5	14	HASL 300, Tc-02- RC M	=
Thorium-230	U	0.137	pCi/L	1.89	7/23/2024	0.921	0.923	HASL 300, Th-01- RC M	=
Alpha activity	U	5.03	pCi/L	7.18	7/23/2024	4.95	5.02	SW846-9310	=
Beta activity		39.1	pCi/L	9.13	7/23/2024	8.93	11	SW846-9310	=
1,2-Dibromo-3-chloropropane	U	0.0188	ug/L	0.0188	7/23/2024			SW846-8011	=
1,1,1,2-Tetrachloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,1,1-Trichloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,1,2,2-Tetrachloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,1,2-Trichloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,1-Dichloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,1-Dichloroethene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,2,3-Trichloropropane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,2-Dibromoethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,2-Dichlorobenzene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,2-Dichloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,2-Dichloropropane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,4-Dichlorobenzene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
2-Butanone	U	5	ug/L	5	7/23/2024			SW846-8260D	=
2-Hexanone	U	5	ug/L	5	7/23/2024			SW846-8260D	=
4-Methyl-2-pentanone	U	5	ug/L	5	7/23/2024			SW846-8260D	=
Acetone	U	5	ug/L	5	7/23/2024			SW846-8260D	=
Acrolein	U	5	ug/L	5	7/23/2024			SW846-8260D	UJ
Acrylonitrile	U	5	ug/L	5	7/23/2024			SW846-8260D	UJ
Benzene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Bromochloromethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Bromodichloromethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Bromoform	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Bromomethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Carbon disulfide	U	5	ug/L	5	7/23/2024			SW846-8260D	=
Carbon tetrachloride	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Chlorobenzene	U	1		1	7/23/2024			SW846-8260D	=
Chloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Chloroform	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Chloromethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
cis-1,2-Dichloroethene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
cis-1,3-Dichloropropene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Dibromochloromethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Dibromomethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Ethylbenzene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Iodomethane	U	5	ug/L	5	7/23/2024			SW846-8260D	=
Methylene chloride	U	5	ug/L	5	7/23/2024			SW846-8260D	=
Styrene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Tetrachloroethene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Toluene	U	1	ug/L	1	7/23/2024			SW846-8260D	
Total Xylene	U	3	ug/L	3	7/23/2024			SW846-8260D	=
trans-1,2-Dichloroethene	U	1	ug/L	1	7/23/2024			SW846-8260D	
trans-1,3-Dichloropropene	U	1	ug/L ug/L	1	7/23/2024			SW846-8260D	
trans-1,4-Dichloro-2-butene	U	5	ug/L ug/L	5	7/23/2024			SW846-8260D	UJ
Trichloroethene	U	1	ug/L ug/L	1	7/23/2024			SW846-8260D	=
Trichlorofluoromethane	U	1							=
memoromethane	U	1	ug/L	1	7/23/2024			SW846-8260D	-

Vinyl acetate	U	5	ug/L	5	7/23/2024	SW846-8260D =
Vinyl chloride	U	1	ug/L	1	7/23/2024	SW846-8260D =
Dissolved Solids		355	mg/L	10	7/23/2024	EPA-160.1 =
lodide	U	0.5	mg/L	0.5	7/23/2024	EPA-300.0 =
Chemical Oxygen Demand (COD)	JN	10.8	mg/L	20	7/23/2024	EPA-410.4 =
Cyanide	U	0.2	mg/L	0.2	7/23/2024	SW846-9012B =
Total Organic Halides (TOX)		12	ug/L	10	7/23/2024	SW846-9020B =
Total Organic Carbon (TOC)	J	1.93	mg/L	2	7/23/2024	SW846-9060A =

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: MW391 DOWN RGA Type: URGA Period: 3rd Quarter 2024

AKGWA Well Tag #: 8004-4805 SAMPLE ID: MW391SG4-24 Sample Type: REG

AKGWA Well Tag #:	8004-4805		SAMPLI	SAMPLE ID: N		4	Sample Type: REG		
Parameter	Qualifier	Result	Units	Reporting Limit	Date Collected	Counting Error (+/-)	TPU	Method	Validation
Bromide		0.49	mg/L	0.2	7/23/2024			SW846-9056A	=
Chloride	BJ	42	mg/L	250	7/23/2024			SW846-9056A	U
luoride	JW	0.129	mg/L	4	7/23/2024			SW846-9056A	=
Nitrate as Nitrogen	J	1.19	mg/L	10	7/23/2024			SW846-9056A	=
Sulfate		12.2	mg/L	0.4	7/23/2024			SW846-9056A	=
Barometric Pressure Reading		30.08	Inches/Hg		7/23/2024				Х
Conductivity		384	μmhos/cm		7/23/2024				Х
Depth to Water		42.64	ft		7/23/2024				Х
Dissolved Oxygen		5.02	mg/L		7/23/2024				Х
Eh (approx)		373	mV		7/23/2024				Х
oH		6.13	Std Unit		7/23/2024				Х
emperature		63.1	deg F		7/23/2024				Х
urbidity		0	NTU		7/23/2024				Х
lluminum	J	0.0224	mg/L	0.05	7/23/2024			SW846-6020B	=
Antimony	U	0.003	mg/L	0.003	7/23/2024			SW846-6020B	=
Arsenic	U	0.005	mg/L	0.005	7/23/2024			SW846-6020B	=
Barium		0.21	mg/L	0.004	7/23/2024			SW846-6020B	=
Beryllium	U	0.0005	mg/L	0.0005	7/23/2024			SW846-6020B	=
Soron		0.0241	mg/L	0.015	7/23/2024			SW846-6020B	=
admium	U	0.001	mg/L	0.001	7/23/2024			SW846-6020B	=
alcium		24.7	mg/L	0.2	7/23/2024			SW846-6020B	=
Chromium	U	0.01	mg/L	0.01	7/23/2024			SW846-6020B	=
Cobalt	U	0.001	mg/L	0.001	7/23/2024			SW846-6020B	=
Copper	J	0.000621	mg/L	0.002	7/23/2024			SW846-6020B	=
ron		0.125	mg/L	0.1	7/23/2024			SW846-6020B	=
ead	U	0.002	mg/L	0.002	7/23/2024			SW846-6020B	=
/Jagnesium		10.3	mg/L	0.03	7/23/2024			SW846-6020B	=
Manganese	J	0.00221	mg/L	0.005	7/23/2024			SW846-6020B	=
Лоlybdenum	U	0.001	mg/L	0.001	7/23/2024			SW846-6020B	=
lickel	U	0.002	mg/L	0.002	7/23/2024			SW846-6020B	=
otassium		1.41	mg/L	0.3	7/23/2024			SW846-6020B	=
thodium	U	0.005	mg/L	0.005	7/23/2024			SW846-6020B	=
elenium	U	0.005	mg/L	0.005	7/23/2024			SW846-6020B	=
ilver	U	0.001	mg/L	0.001	7/23/2024			SW846-6020B	=
odium		31.4	mg/L	0.25	7/23/2024			SW846-6020B	=
antalum	U	0.005	mg/L	0.005	7/23/2024			SW846-6020B	=
hallium	U	0.003	mg/L	0.003	7/23/2024			SW846-6020B	=
Jranium Jranium	U	0.002	mg/L	0.002	7/23/2024			SW846-6020B	=
'anadium	U	0.002	mg/L	0.0002	7/23/2024			SW846-6020B	=
inc	U	0.02	mg/L	0.02	7/23/2024			SW846-6020B	=
Mercury	U	0.0002	mg/L	0.002				SW846-7470A	
arium, Dissolved	U	0.0002	mg/L mg/L	0.0002	7/23/2024 7/23/2024			SW846-7470A SW846-6020B	=
<u> </u>									J
Chromium, Dissolved	U	0.01	mg/L	0.01	7/23/2024			SW846-6020B	UJ
Jranium, Dissolved	U	0.0002	mg/L	0.0002	7/23/2024	0.563	0.500	SW846-6020B	UJ
Radium-226	U	0.411	pCi/L	0.828	7/23/2024	0.562	0.563	AN-1418	=

Cl		0.74	- 6: /1	2.45	7/22/2024	4.26	4.26	5DA 005 0 A4	
Strontium-90 Tritium	U	0.71	pCi/L pCi/L	2.45	7/23/2024 7/23/2024	1.36 153	1.36 153	EPA-905.0-M EPA-906.0-M	= =
Technetium-99	U	9.87	pCi/L	15.2	7/23/2024	9.18	9.25	HASL 300, Tc-02-	
			P 0.7 2			J.15		RC M	
horium-230	U	-0.0222	pCi/L	2.11	7/23/2024	0.955	0.956	HASL 300, Th-01- RC M	=
Alpha activity	U	-0.555	pCi/L	8	7/23/2024	3.39	3.39	SW846-9310	=
Beta activity	U	6.69	pCi/L	9.83	7/23/2024	6.06	6.16	SW846-9310	=
,2-Dibromo-3-chloropropane	U	0.0186	ug/L	0.0186	7/23/2024			SW846-8011	=
,1,1,2-Tetrachloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
,1,1-Trichloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
.,1,2,2-Tetrachloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
.,1,2-Trichloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
,1-Dichloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
.,1-Dichloroethene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
.,2,3-Trichloropropane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
,2-Dibromoethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
,2-Dichlorobenzene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
,2-Dichloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
,2-Dichloropropane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
,4-Dichlorobenzene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
-Butanone	U	5	ug/L	5	7/23/2024			SW846-8260D	=
-Hexanone	U	5	ug/L	5	7/23/2024			SW846-8260D	=
-Methyl-2-pentanone	U	5	ug/L	5	7/23/2024			SW846-8260D	=
cetone	U	5	ug/L	5	7/23/2024			SW846-8260D	=
crolein	U	5	ug/L	5	7/23/2024			SW846-8260D	UJ
crylonitrile	U	5	ug/L	5	7/23/2024			SW846-8260D	UJ 03
enzene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
romochloromethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
romodichloromethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Bromoform	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Bromomethane	U	1	ug/L ug/L	1	7/23/2024			SW846-8260D	=
Carbon disulfide	U	5		5	7/23/2024			SW846-8260D	
			ug/L						
Carbon tetrachloride	U	1	ug/L	1	7/23/2024			SW846-8260D	UJ
Chlorobenzene	U	1		1	7/23/2024			SW846-8260D	=
Chloroethane		1	ug/L	1	7/23/2024			SW846-8260D	=
Chloroform	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Chloromethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
is-1,2-Dichloroethene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
is-1,3-Dichloropropene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Dibromochloromethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Dibromomethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
thylbenzene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
odomethane	U	5	ug/L	5	7/23/2024			SW846-8260D	=
Methylene chloride	U	5	ug/L	5	7/23/2024			SW846-8260D	=
tyrene	U	1	ug/L	1	7/23/2024			SW846-8260D	UJ
etrachloroethene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
oluene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
otal Xylene	U	3	ug/L	3	7/23/2024			SW846-8260D	=
rans-1,2-Dichloroethene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
rans-1,3-Dichloropropene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
rans-1,4-Dichloro-2-butene	U	5	ug/L	5	7/23/2024			SW846-8260D	UJ
richloroethene	J	0.47	ug/L	1	7/23/2024			SW846-8260D	=
Frichlorofluoromethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=

Vinyl acetate	U	5	ug/L	5	7/23/2024	SW846-8260D	=
Vinyl chloride	U	1	ug/L	1	7/23/2024	SW846-8260D	=
Dissolved Solids		182	mg/L	10	7/23/2024	EPA-160.1	=
lodide	U	0.5	mg/L	0.5	7/23/2024	EPA-300.0	=
Chemical Oxygen Demand (COD)	JN	10.8	mg/L	20	7/23/2024	EPA-410.4	=
Cyanide	U	0.2	mg/L	0.2	7/23/2024	SW846-9012B	=
Total Organic Halides (TOX)		21	ug/L	10	7/23/2024	SW846-9020B	=
Total Organic Carbon (TOC)	J	0.462	mg/L	2	7/23/2024	SW846-9060A	=

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: MW392 DOWN RGA Type: LRGA Period: 3rd Quarter 2024

AKGWA Well Tag #: 8004-4806 SAMPLE ID: MW392SG4-24 Sample Type: REG

Seromide	AKGWA Well Tag #:	8004-4806		SAMPLE ID:		MW392SG4-24		Sample T		
	Parameter	Qualifier	Result	Units				TPU	Method	Validation
Decide B	Bromide	•	0.525	mg/L	0.2	7/23/2024			SW846-9056A	=
Second	Chloride	ВЈ	41.6	mg/L	250	7/23/2024			SW846-9056A	U
Mile as Nilrogen	Fluoride	JW	0.167		4				SW846-9056A	=
contract 7.73 mg/L 0.4 7/23/2024 SW846-9056A = barometric Pressure Reading 30.08 linches/hig 7/23/2024 X Sepath to Water 41.83 ft 7/23/2024 X Spepth to Water 41.83 ft 7/23/2024 X In Lapprox) 368 mV 7/23/2024 X Oble 5.97 Skd Unit 7/23/2024 X Oble 5.97 Skd Unit 7/23/2024 X Oble 5.97 Skd Unit 7/23/2024 X Curbointy 0 NTU 7/23/2024 X Valuminum J 0.0219 mg/L 0.05 7/23/2024 SW846-60208 = Alsemin J 0.003 mg/L 0.005 7/23/2024 SW846-60208 = Alsemin J 0.003 mg/L 0.005 7/23/2024 SW846-60208 = Alsemin J 0.003 mg/L 0.004	Nitrate as Nitrogen	J	0.677		10				SW846-9056A	=
Serometric Pressure Reading 30.08 Inches/Hg 7/23/2024 X X Conductivity 329 µmhos/cm 7/23/2024 X X X X X X X X X	Sulfate		7.73		0.4				SW846-9056A	=
Conductivity 329	Barometric Pressure Reading		30.08							X
Name	Conductivity									
Second Congress 1.87 mg/L	•									
Second S	•			mg/L						
Sept										
Femperature 63.5 deg F 7/23/2024 X Furbidity 0 NTU 7/33/2024 X Mulminum J 0.0219 mg/L 0.05 7/23/2024 SW846-60208 = Intimony U 0.003 mg/L 0.003 7/23/2024 SW846-60208 = Avasenic U 0.005 mg/L 0.005 7/23/2024 SW846-60208 = Berlum U 0.0005 mg/L 0.0005 7/23/2024 SW846-60208 = Berlum U 0.0001 mg/L 0.0005 7/23/2024 SW846-60208 = Cadmium U 0.001 mg/L 0.001 7/23/2024 SW846-60208 = Carbinium U 0.01 mg/L 0.01 7/23/2024 SW846-60208 = Carbinium U 0.01 mg/L 0.00 7/23/2024 SW846-60208 = Carbinium U 0.01 mg/L 0.00										
Autholity 0 NTU 7/23/2024 X Aluminum J 0.0219 mg/L 0.05 7/23/2024 SW846-60208 = Aktimony U 0.003 mg/L 0.005 7/23/2024 SW846-60208 = Aktimony U 0.005 mg/L 0.005 7/23/2024 SW846-60208 = Sarium 0.305 mg/L 0.004 7/23/2024 SW846-60208 = Seryllium U 0.0001 mg/L 0.0015 7/23/2024 SW846-60208 = Cadmium U 0.001 mg/L 0.001 7/23/2024 SW846-60208 = Calcium 2 0.001 mg/L 0.001 7/23/2024 SW846-60208 = Calcium 2 0.001 mg/L 0.01 7/23/2024 SW846-60208 = Calcium 3 0.000313 mg/L 0.01 7/23/2024 SW846-60208 = Calcium 3 0.000										
Numinum J 0.0219 mg/L 0.05 7/23/2024 SW846-60208 = Numinomy U 0.003 mg/L 0.003 7/23/2024 SW846-60208 = Naminomy U 0.005 mg/L 0.005 7/23/2024 SW846-60208 = Naminomy U 0.005 mg/L 0.005 7/23/2024 SW846-60208 = Naminomy U 0.005 mg/L 0.004 7/23/2024 SW846-60208 = Naminomy U 0.0005 mg/L 0.005 7/23/2024 SW846-60208 = Naminomy U 0.001 mg/L 0.015 7/23/2024 SW846-60208 = Naminomy U 0.001 mg/L 0.015 7/23/2024 SW846-60208 = Naminomy U 0.001 mg/L 0.01 7/23/2024 SW846-60208 = Naminomy U 0.001 mg/L 0.01 7/23/2024 SW846-60208 = Naminomy U 0.001 mg/L 0.01 7/23/2024 SW846-60208 = Naminomy U 0.01 mg/L 0.01 7/23/2024 SW846-60208 = Naminomy U 0.01 mg/L 0.01 7/23/2024 SW846-60208 = Naminomy U 0.001 mg/L 0.01 7/23/2024 SW846-60208 = Naminomy U 0.001 mg/L 0.01 7/23/2024 SW846-60208 = Naminomy U 0.0003 mg/L 0.002 7/23/2024 SW846-60208 = Naminomy U 0.0003 mg/L 0.002 7/23/2024 SW846-60208 = Naminomy U 0.0002 mg/L 0.002 7/23/2024 SW846-60208 = Naminomy U 0.0002 mg/L 0.002 7/23/2024 SW846-60208 = Naminomy U 0.000 mg/L 0.002 7/23/2024 SW846-60208 = Naminomy U 0.000 mg/L 0.002 7/23/2024 SW846-60208 = Naminomy U 0.000 mg/L 0.001 7/23/2024 SW846-60208 = Naminomy U 0.001 mg/L 0.001 7/23/2024 SW846-60208 = Naminomy U 0.001 mg/L 0.001 7/23/2024 SW846-60208 = Naminomy U 0.000 mg/L 0.002 7/23/2024 SW846-60208 = Naminomy U 0.000 mg/L 0.002 7/23/2024 SW846-60208 = Naminomy U 0.000 mg/L 0.000 7/23/2024 SW846-60208 = Naminomy U 0.000 mg/L 0	•									
Antimony U 0.003 mg/L 0.003 7/23/2024 SW846-60208 = Arsenic U 0.005 mg/L 0.005 7/23/2024 SW846-60208 = Arsenic U 0.005 mg/L 0.004 7/23/2024 SW846-60208 = Arsenic U 0.005 mg/L 0.004 7/23/2024 SW846-60208 = Arsenic U 0.005 mg/L 0.0005 7/23/2024 SW846-60208 = Arsenic U 0.0005 mg/L 0.0005 7/23/2024 SW846-60208 = Arsenic U 0.0001 mg/L 0.001 7/23/2024 SW846-60208 = Arsenic U 0.001 mg/L 0.01 7/23/2024 SW846-60208 = Arsenic U 0.001 mg/L 0.01 7/23/2024 SW846-60208 = Arsenic U 0.001 mg/L 0.01 7/23/2024 SW846-60208 = Arsenic U 0.001 mg/L 0.001 7/23/2024 SW846-60208 = Arsenic U 0.002 mg/L 0.002 7/23/2024 SW846-60208 = Arsenic U 0.002 mg/L 0.003 7/23/2024 SW846-60208 = Arsenic U 0.002 mg/L 0.005 7/23/2024 SW846-60208 = Arsenic U 0.005 mg/L 0.005 7/23/2024 SW846-60208 = Arse		ı			0.05				SW846-6020B	
Arsenic U 0.005 mg/L 0.005 7/23/2024 SW846-6020B = Carlum										
Barium	-									
Sery lium										
Boron 0.0211 mg/L 0.015 7/23/2024 SW846-60208 = Cadmium U 0.001 mg/L 0.001 7/23/2024 SW846-60208 = Cadmium U 0.01 mg/L 0.01 7/23/2024 SW846-60208 = Cadmium U 0.01 mg/L 0.01 7/23/2024 SW846-60208 = Chobalt J 0.000313 mg/L 0.001 7/23/2024 SW846-60208 = Copper J 0.000956 mg/L 0.002 7/23/2024 SW846-60208 = Copper J 0.0002 mg/L 0.002 7/23/2024 SW846-60208 = ced U 0.002 mg/L 0.002 7/23/2024 SW846-60208 = Magnesium 9.7 mg/L 0.003 7/23/2024 SW846-60208 = Magnesium U 0.001 mg/L 0.001 7/23/2024 SW846-60208 = Mag										
Radmium U 0.001 mg/L 0.001 7/23/2024 SW846-6020B = Calcium 22.7 mg/L 0.2 7/23/2024 SW846-6020B = Chromium U 0.01 mg/L 0.01 7/23/2024 SW846-6020B = Cobalt J 0.000313 mg/L 0.001 7/23/2024 SW846-6020B = Cobalt J 0.000956 mg/L 0.002 7/23/2024 SW846-6020B = Corper J 0.000956 mg/L 0.002 7/23/2024 SW846-6020B = corper J 0.002 mg/L 0.002 7/23/2024 SW846-6020B = Adarganesium 9.7 mg/L 0.03 7/23/2024 SW846-6020B = Adarganese 0.198 mg/L 0.005 7/23/2024 SW846-6020B = Ordostavium U 0.001 mg/L 0.001 7/23/2024 SW846-6020B = Ordostaviu	·									
22.7 mg/L 0.2 7/23/2024 SW846-6020B = 1										
Description		0								
Description		- 11								
Description J										
Beel		J								
Adagnesium 9.7 mg/L 0.03 7/23/2024 SW846-6020B = Adanganese 0.198 mg/L 0.005 7/23/2024 SW846-6020B = Adolybdenum U 0.001 mg/L 0.001 7/23/2024 SW846-6020B = Adolybdenum U 0.0023 mg/L 0.002 7/23/2024 SW846-6020B = Adolum U 0.005 mg/L 0.005 7/23/2024 SW846-6020B = Adolum U 0.001 mg/L 0.001 7/23/2024 SW846-6020B = Adolum U 0.001 mg/L 0.005 7/23/2024 SW846-6020B = Adolum U 0.002 mg/L 0.005 7/23/2024 SW846-6020B = Adolum U <td></td>										
Manganese 0.198 mg/L 0.005 7/23/2024 SW846-6020B = Molybdenum U 0.001 mg/L 0.001 7/23/2024 SW846-6020B = Nickel 0.00223 mg/L 0.002 7/23/2024 SW846-6020B = Potassium 2.03 mg/L 0.05 7/23/2024 SW846-6020B = Rhodium U 0.005 mg/L 0.005 7/23/2024 SW846-6020B = Relenium U 0.005 mg/L 0.005 7/23/2024 SW846-6020B = Silver U 0.001 mg/L 0.001 7/23/2024 SW846-6020B = Goldium 23.5 mg/L 0.025 7/23/2024 SW846-6020B = Fantalum U 0.005 mg/L 0.005 7/23/2024 SW846-6020B = Grantalum U 0.002 mg/L 0.002 7/23/2024 SW846-6020B = Jaranium U <td></td> <td>U</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>		U								
Wolybdenum U 0.001 mg/L 0.001 7/23/2024 SW846-6020B = Wickel 0.00223 mg/L 0.002 7/23/2024 SW846-6020B = Potassium 2.03 mg/L 0.33 7/23/2024 SW846-6020B = Rhodium U 0.005 mg/L 0.005 7/23/2024 SW846-6020B = Selenium U 0.005 mg/L 0.005 7/23/2024 SW846-6020B = Silver U 0.001 mg/L 0.001 7/23/2024 SW846-6020B = Sodium 2.3.5 mg/L 0.025 7/23/2024 SW846-6020B = Tantalum U 0.005 mg/L 0.005 7/23/2024 SW846-6020B = Tantalum U 0.002 mg/L 0.002 7/23/2024 SW846-6020B = Uranium U 0.002 mg/L 0.002 7/23/2024 SW846-6020B = Users										
Nickel										
Potassium 2.03 mg/L 0.3 7/23/2024 SW846-6020B = Rhodium U 0.005 mg/L 0.005 7/23/2024 SW846-6020B = Selenium U 0.005 mg/L 0.005 7/23/2024 SW846-6020B = Silver U 0.001 mg/L 0.001 7/23/2024 SW846-6020B = Sodium 23.5 mg/L 0.25 7/23/2024 SW846-6020B = Fantalum U 0.005 mg/L 0.005 7/23/2024 SW846-6020B = Challium U 0.002 mg/L 0.002 7/23/2024 SW846-6020B = Jaranium U 0.002 mg/L 0.002 7/23/2024 SW846-6020B = Jaranium U 0.002 mg/L 0.02 7/23/2024 SW846-6020B = Jaranium U 0.002 mg/L 0.02 7/23/2024 SW846-6020B = Ja		U								
None										
Selenium										
Silver										
Swade-6020B										
Fantalum U 0.005 mg/L 0.005 7/23/2024 SW846-6020B = Thallium U 0.002 mg/L 0.002 7/23/2024 SW846-6020B = Uranium U 0.0002 mg/L 0.0002 7/23/2024 SW846-6020B = Vanadium U 0.02 mg/L 0.02 7/23/2024 SW846-6020B = Vinc U 0.02 mg/L 0.02 7/23/2024 SW846-6020B = Vercury U 0.0002 mg/L 0.0002 7/23/2024 SW846-6020B J Barium, Dissolved U 0.295 mg/L 0.004 7/23/2024 SW846-6020B U Chromium, Dissolved U 0.01 mg/L 0.01 7/23/2024 SW846-6020B UJ Uranium, Dissolved U 0.002 mg/L 0.0002 7/23/2024 SW846-6020B UJ		U								
Thallium U 0.002 mg/L 0.002 7/23/2024 SW846-6020B = Uranium U 0.0002 mg/L 0.0002 7/23/2024 SW846-6020B = Vanadium U 0.02 mg/L 0.02 7/23/2024 SW846-6020B = Zinc U 0.02 mg/L 0.02 7/23/2024 SW846-6020B = Wercury U 0.0002 mg/L 0.0002 7/23/2024 SW846-7470A = Barium, Dissolved 0.295 mg/L 0.004 7/23/2024 SW846-6020B J Chromium, Dissolved U 0.01 mg/L 0.01 7/23/2024 SW846-6020B UJ Jranium, Dissolved U 0.002 mg/L 0.0002 7/23/2024 SW846-6020B UJ										
Uranium U 0.0002 mg/L 0.0002 7/23/2024 SW846-6020B = Vanadium U 0.02 mg/L 0.02 7/23/2024 SW846-6020B = Zinc U 0.02 mg/L 0.02 7/23/2024 SW846-6020B = Mercury U 0.0002 mg/L 0.0002 7/23/2024 SW846-7470A = Barium, Dissolved 0.295 mg/L 0.004 7/23/2024 SW846-6020B J Chromium, Dissolved U 0.01 mg/L 0.01 7/23/2024 SW846-6020B UJ Uranium, Dissolved U 0.0002 mg/L 0.0002 7/23/2024 SW846-6020B UJ										=
Vanadium U 0.02 mg/L 0.02 7/23/2024 SW846-6020B = Vinc U 0.02 mg/L 0.02 7/23/2024 SW846-6020B = Mercury U 0.0002 mg/L 0.0002 7/23/2024 SW846-7470A = Barium, Dissolved 0.295 mg/L 0.004 7/23/2024 SW846-6020B J Chromium, Dissolved U 0.01 mg/L 0.01 7/23/2024 SW846-6020B UJ Jranium, Dissolved U 0.0002 mg/L 0.0002 7/23/2024 SW846-6020B UJ	- Thallium									=
Swa46-6020B Swa46-6020B Swa46-6020B Swa46-6020B Swa46-6020B Swa46-6020B Swa46-7470A Swa46-7470A Swa46-7470A Swa46-7470A Swa46-6020B						7/23/2024			SW846-6020B	=
Mercury U 0.0002 mg/L 0.0002 7/23/2024 SW846-7470A = Barium, Dissolved 0.295 mg/L 0.004 7/23/2024 SW846-6020B J Chromium, Dissolved U 0.01 mg/L 0.01 7/23/2024 SW846-6020B UJ Uranium, Dissolved U 0.0002 mg/L 0.0002 7/23/2024 SW846-6020B UJ	/anadium				0.02					=
Barium, Dissolved 0.295 mg/L 0.004 7/23/2024 SW846-6020B J Chromium, Dissolved U 0.01 mg/L 0.01 7/23/2024 SW846-6020B UJ Uranium, Dissolved U 0.0002 mg/L 0.0002 7/23/2024 SW846-6020B UJ	linc	U	0.02	mg/L	0.02	7/23/2024			SW846-6020B	=
Chromium, Dissolved U 0.01 mg/L 0.01 7/23/2024 SW846-6020B UJ Jranium, Dissolved U 0.0002 mg/L 0.0002 7/23/2024 SW846-6020B UJ	Mercury	U	0.0002	mg/L	0.0002	7/23/2024			SW846-7470A	=
Jranium, Dissolved U 0.0002 mg/L 0.0002 7/23/2024 SW846-6020B UJ	Barium, Dissolved		0.295	mg/L	0.004	7/23/2024			SW846-6020B	J
· · · · · · · · · · · · · · · · · · ·	Chromium, Dissolved	U	0.01	mg/L	0.01	7/23/2024			SW846-6020B	UJ
Radium-226 U 0.313 pCi/L 0.817 7/23/2024 0.52 0.521 AN-1418 =	Jranium, Dissolved	U	0.0002	mg/L	0.0002	7/23/2024			SW846-6020B	UJ
	Radium-226	U	0.313	pCi/L	0.817	7/23/2024	0.52	0.521	AN-1418	=

Strontium-90	U	2.64	pCi/L	3.29	7/23/2024	2.09	2.13	EPA-905.0-M	=
Tritium	U	192	pCi/L	283	7/23/2024	172	176	EPA-905.0-IVI	
Technetium-99	U	0.664	pCi/L	15.2	7/23/2024	8.51	8.51	HASL 300, Tc-02- RC M	=
horium-230	U	0.0853	pCi/L	1.97	7/23/2024	0.933	0.935	HASL 300, Th-01- RC M	=
Alpha activity	U	-1.57	pCi/L	8.11	7/23/2024	3.06	3.07	SW846-9310	=
eta activity	U	5.11	pCi/L	9.76	7/23/2024	5.82	5.88	SW846-9310	=
,2-Dibromo-3-chloropropane	U	0.0191	ug/L	0.0191	7/23/2024	3.02	3.00	SW846-8011	=
.,1,1,2-Tetrachloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	
.,1,1-Trichloroethane	U	1	ug/L ug/L	1	7/23/2024			SW846-8260D	
.,1,2,2-Tetrachloroethane	U	1	ug/L ug/L	1	7/23/2024			SW846-8260D	
	U	1	ug/L ug/L	1	7/23/2024			SW846-8260D	
.,1,2-Trichloroethane	U								
.,1-Dichloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
.,1-Dichloroethene		1	ug/L	1	7/23/2024			SW846-8260D	=
.,2,3-Trichloropropane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
.,2-Dibromoethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
,2-Dichlorobenzene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
,2-Dichloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
,2-Dichloropropane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
.,4-Dichlorobenzene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
-Butanone	U	5	ug/L	5	7/23/2024			SW846-8260D	=
-Hexanone	U	5	ug/L	5	7/23/2024			SW846-8260D	=
-Methyl-2-pentanone	U	5	ug/L	5	7/23/2024			SW846-8260D	=
cetone	U	5	ug/L	5	7/23/2024			SW846-8260D	=
crolein	U	5	ug/L	5	7/23/2024			SW846-8260D	UJ
crylonitrile	U	5	ug/L	5	7/23/2024			SW846-8260D	UJ
lenzene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
romochloromethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
romodichloromethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
romoform	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Bromomethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Carbon disulfide	U	5	ug/L	5	7/23/2024			SW846-8260D	=
Carbon tetrachloride	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Chlorobenzene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Chloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Chloroform	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Chloromethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
is-1,2-Dichloroethene	J	0.44	ug/L	1	7/23/2024			SW846-8260D	=
is-1,3-Dichloropropene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Dibromochloromethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Dibromomethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
thylbenzene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
odomethane	U	5	ug/L	5	7/23/2024			SW846-8260D	=
Methylene chloride	U	5	ug/L	5	7/23/2024			SW846-8260D	=
tyrene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
etrachloroethene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
oluene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
otal Xylene	U	3	ug/L	3	7/23/2024			SW846-8260D	=
rans-1,2-Dichloroethene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
rans-1,3-Dichloropropene	U	1	ug/L ug/L	1	7/23/2024			SW846-8260D	
rans-1,4-Dichloro-2-butene	U	5	ug/L ug/L	5	7/23/2024			SW846-8260D	UJ
richloroethene	U	4.04	ug/L ug/L		7/23/2024			SW846-8260D SW846-8260D	
	11			1					=
richlorofluoromethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=

Vinyl acetate	U	5	ug/L	5	7/23/2024	SW846-8260D =
Vinyl chloride	U	1	ug/L	1	7/23/2024	SW846-8260D =
Dissolved Solids		172	mg/L	10	7/23/2024	EPA-160.1 =
lodide	U	0.5	mg/L	0.5	7/23/2024	EPA-300.0 =
Chemical Oxygen Demand (COD)	UN	20	mg/L	20	7/23/2024	EPA-410.4 =
Cyanide	U	0.2	mg/L	0.2	7/23/2024	SW846-9012B =
Total Organic Halides (TOX)	J	8.76	ug/L	10	7/23/2024	SW846-9020B =
Total Organic Carbon (TOC)	J	0.51	mg/L	2	7/23/2024	SW846-9060A =

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: MW393 DOWN RGA Type: UCRS Period: 3rd Quarter 2024

AKGWA Well Tag #: 8004-4807 SAMPLE ID: MW393SG4-24 Sample Type: REG

AKGWA Well Tag #:	8004-4807		SAMPLE ID:		MW393SG4-24		Sample T		
Parameter	Qualifier	Result	Units	Reporting Limit	Date Collected	Counting Error (+/-)	TPU	Method	Validation
Bromide	UW	0.2	mg/L	0.2	7/24/2024			SW846-9056A	=
Chloride	J	9.43	mg/L	250	7/24/2024			SW846-9056A	=
-luoride	J	0.219	mg/L	4	7/24/2024			SW846-9056A	=
Nitrate as Nitrogen	J	0.226	mg/L	10	7/24/2024			SW846-9056A	=
Sulfate		23.2	mg/L	0.8	7/24/2024			SW846-9056A	=
Barometric Pressure Reading		30.16	Inches/Hg		7/24/2024				Х
Conductivity		460	μmhos/cm		7/24/2024				Х
Depth to Water		29.2	ft		7/24/2024				Х
Dissolved Oxygen		1	mg/L		7/24/2024				Х
:h (approx)		383	mV		7/24/2024				Х
oH		6.37	Std Unit		7/24/2024				Х
emperature		66.1	deg F		7/24/2024				Х
urbidity		18.09	NTU		7/24/2024				Х
Aluminum	J	0.0284	mg/L	0.05	7/24/2024			SW846-6020B	=
Antimony	U	0.003	mg/L	0.003	7/24/2024			SW846-6020B	=
Arsenic	J	0.00401	mg/L	0.005	7/24/2024			SW846-6020B	=
Barium		0.091	mg/L	0.004	7/24/2024			SW846-6020B	=
Beryllium	U	0.0005	mg/L	0.0005	7/24/2024			SW846-6020B	=
Soron		0.0168	mg/L	0.015	7/24/2024			SW846-6020B	=
admium	U	0.001	mg/L	0.001	7/24/2024			SW846-6020B	=
alcium		15.8	mg/L	0.2	7/24/2024			SW846-6020B	=
Chromium	U	0.01	mg/L	0.01	7/24/2024			SW846-6020B	=
Cobalt	U	0.001	mg/L	0.001	7/24/2024			SW846-6020B	=
Copper	J	0.000726	mg/L	0.002	7/24/2024			SW846-6020B	=
ron		1.09	mg/L	0.1	7/24/2024			SW846-6020B	=
ead	U	0.002	mg/L	0.002	7/24/2024			SW846-6020B	=
/Jagnesium	-	4.01	mg/L	0.03	7/24/2024			SW846-6020B	=
Manganese		0.0338	mg/L	0.005	7/24/2024			SW846-6020B	=
/lolybdenum	J	0.000463	mg/L	0.001	7/24/2024			SW846-6020B	=
lickel	U	0.002	mg/L	0.002	7/24/2024			SW846-6020B	=
otassium	-	0.459	mg/L	0.3	7/24/2024			SW846-6020B	=
Rhodium	U	0.005	mg/L	0.005	7/24/2024			SW846-6020B	=
elenium	J	0.00174	mg/L	0.005	7/24/2024			SW846-6020B	=
ilver	U	0.001	mg/L	0.001	7/24/2024			SW846-6020B	=
odium		77.9	mg/L	2.5	7/24/2024			SW846-6020B	=
antalum	U	0.005	mg/L	0.005	7/24/2024			SW846-6020B	=
Thallium	U	0.002	mg/L	0.002	7/24/2024			SW846-6020B	=
Jranium		0.000213	mg/L	0.0002	7/24/2024			SW846-6020B	=
anadium	U	0.002	mg/L	0.00	7/24/2024			SW846-6020B	=
inc	U	0.02	mg/L	0.02	7/24/2024			SW846-6020B	=
Mercury	U	0.0002	mg/L	0.0002	7/24/2024			SW846-7470A	=
arium, Dissolved		0.0503	mg/L	0.004	7/24/2024			SW846-6020B	J
Chromium, Dissolved	U	0.0303	mg/L	0.004	7/24/2024			SW846-6020B	, ,
Jranium, Dissolved	J	0.000129	mg/L	0.0002	7/24/2024			SW846-6020B	J
Radium-226	U	0.000123	pCi/L	0.635	7/24/2024	0.403	0.403	AN-1418	=
MANUTH-ZZU	U	0.1/8	pci/L	0.033	1 / 24/ 2024	0.403	0.403	VIA.1410	_

Strontium-90	U	0.528	pCi/L	5.77	7/24/2024	3.17	3.17	EPA-905.0-M	=
Fritium	U	57.1	pCi/L	245	7/24/2024	140	140	EPA-906.0-M	=
Fechnetium-99	U	-8.36	pCi/L	18	7/24/2024	9.64	9.64	HASL 300, Tc-02- RC M	=
Thorium-230	U	1.34	pCi/L	1.4	7/24/2024	1.11	1.13	HASL 300, Th-01- RC M	=
Alpha activity	U	0.395	pCi/L	9.11	7/24/2024	4.29	4.29	SW846-9310	=
Beta activity	U	-1.96	pCi/L	9.57	7/24/2024	4.72	4.72	SW846-9310	=
.,2-Dibromo-3-chloropropane	U	0.0192	ug/L	0.0192	7/24/2024			SW846-8011	=
I,1,1,2-Tetrachloroethane	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
I,1,1-Trichloroethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
.,1,2,2-Tetrachloroethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
,1,2-Trichloroethane	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
1,1-Dichloroethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
,1-Dichloroethene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
.,2,3-Trichloropropane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
,,2-Dibromoethane	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
.,2-Dichlorobenzene	U	1	ug/L	1	7/24/2024			SW846-8260D	
.,2-Dichloroethane	U	1	ug/L ug/L	1	7/24/2024			SW846-8260D	
,,2-Dichloropropane	U	1	ug/L ug/L	1	7/24/2024			SW846-8260D SW846-8260D	
· · ·	U							SW846-8260D	
.,4-Dichlorobenzene		1	ug/L	1	7/24/2024			SW846-8260D SW846-8260D	
-Butanone	U	5	ug/L	5	7/24/2024				=
-Hexanone	UY2	5	ug/L	5	7/24/2024			SW846-8260D	=
-Methyl-2-pentanone	UY2	5	ug/L	5	7/24/2024			SW846-8260D	=
cetone	J	2.39	ug/L	5	7/24/2024			SW846-8260D	=
crolein	U	5	ug/L	5	7/24/2024			SW846-8260D	UJ
Acrylonitrile	U	5	ug/L	5	7/24/2024			SW846-8260D	UJ
lenzene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
romochloromethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
romodichloromethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
romoform	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Bromomethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Carbon disulfide	U	5	ug/L	5	7/24/2024			SW846-8260D	=
Carbon tetrachloride	U	1	ug/L	1	7/24/2024			SW846-8260D	UJ
Chlorobenzene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
Chloroethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Chloroform	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Chloromethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
is-1,2-Dichloroethene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
is-1,3-Dichloropropene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Dibromochloromethane	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
Dibromomethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
thylbenzene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
odomethane	U	5	ug/L	5	7/24/2024			SW846-8260D	=
Nethylene chloride	U	5	ug/L	5	7/24/2024			SW846-8260D	=
tyrene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	UJ
etrachloroethene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
oluene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
otal Xylene	UY2	3	ug/L	3	7/24/2024			SW846-8260D	=
rans-1,2-Dichloroethene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
rans-1,3-Dichloropropene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
rans-1,4-Dichloro-2-butene	U	5	ug/L	5	7/24/2024			SW846-8260D	UJ
rans 1,4 Dicinioro 2 Daterie									
Trichloroethene	J	0.83	ug/L	1	7/24/2024			SW846-8260D	=

Vinyl acetate	U	5	ug/L	5	7/24/2024	SW846-8260D	=
Vinyl chloride	U	1	ug/L	1	7/24/2024	SW846-8260D	=
Dissolved Solids		272	mg/L	10	7/24/2024	EPA-160.1	=
lodide	U	0.5	mg/L	0.5	7/24/2024	EPA-300.0	=
Chemical Oxygen Demand (COD)	J	15.7	mg/L	20	7/24/2024	EPA-410.4	=
Cyanide	U	0.2	mg/L	0.2	7/24/2024	SW846-9012B	=
Total Organic Halides (TOX)		22.1	ug/L	10	7/24/2024	SW846-9020B	=
Total Organic Carbon (TOC)	J	1.91	mg/L	2	7/24/2024	SW846-9060A	=

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: MW394 UP RGA Type: URGA Period: 3rd Quarter 2024

AKGWA Well Tag #: 8004-4802 SAMPLE ID: MW394SG4-24 Sample Type: REG

AKGWA Well Tag #:	8004-4802		SAMPL	SAMPLE ID:		4	Sample T		
Parameter	Qualifier	Result	Units	Reporting Limit	Date Collected	Counting Error (+/-)	TPU	Method	Validation
Bromide	W	0.8	mg/L	0.2	7/24/2024			SW846-9056A	J
Chloride	J	22.5	mg/L	250	7/24/2024			SW846-9056A	=
Fluoride	J	0.147	mg/L	4	7/24/2024			SW846-9056A	=
Nitrate as Nitrogen	J	1.18	mg/L	10	7/24/2024			SW846-9056A	=
Sulfate		11.7	mg/L	0.4	7/24/2024			SW846-9056A	=
Barometric Pressure Reading		30.16	Inches/Hg		7/24/2024				Х
Conductivity		400	μmhos/cm		7/24/2024				Х
Depth to Water		54.41	ft		7/24/2024				Х
Dissolved Oxygen		4.66	mg/L		7/24/2024				Х
Eh (approx)		404	mV		7/24/2024				Х
рΗ		6.03	Std Unit		7/24/2024				Х
Temperature		63.8	deg F		7/24/2024				Х
Turbidity		0	NTU		7/24/2024				Х
Aluminum	U	0.05	mg/L	0.05	7/24/2024			SW846-6020B	=
Antimony	U	0.003	mg/L	0.003	7/24/2024			SW846-6020B	=
Arsenic	U	0.005	mg/L	0.005	7/24/2024			SW846-6020B	=
Barium		0.284	mg/L	0.004	7/24/2024			SW846-6020B	=
Beryllium	U	0.0005	mg/L	0.0005	7/24/2024			SW846-6020B	=
Boron		0.0206	mg/L	0.015	7/24/2024			SW846-6020B	=
 Cadmium	U	0.001	mg/L	0.001	7/24/2024			SW846-6020B	=
 Calcium		27.5	mg/L	0.2	7/24/2024			SW846-6020B	=
 Chromium	U	0.01	mg/L	0.01	7/24/2024			SW846-6020B	=
Cobalt	U	0.001	mg/L	0.001	7/24/2024			SW846-6020B	=
Copper	J	0.00103	mg/L	0.002	7/24/2024			SW846-6020B	=,
ron	J	0.0602	mg/L	0.1	7/24/2024			SW846-6020B	=
Lead	U	0.002	mg/L	0.002	7/24/2024			SW846-6020B	=,
Magnesium		11.5	mg/L	0.03	7/24/2024			SW846-6020B	=
Manganese	J	0.00156	mg/L	0.005	7/24/2024			SW846-6020B	=
Molybdenum	U	0.001	mg/L	0.001	7/24/2024			SW846-6020B	=
Nickel		0.00811	mg/L	0.002	7/24/2024			SW846-6020B	=
Potassium		1.57	mg/L	0.3	7/24/2024			SW846-6020B	=
Rhodium	U	0.005	mg/L	0.005	7/24/2024			SW846-6020B	=
Selenium	U	0.005	mg/L	0.005	7/24/2024			SW846-6020B	=
Silver	U	0.001	mg/L	0.001	7/24/2024			SW846-6020B	=
Sodium		33.2	mg/L	0.25	7/24/2024			SW846-6020B	=
Tantalum	U	0.005	mg/L	0.005	7/24/2024			SW846-6020B	=
Thallium	U	0.002	mg/L	0.002	7/24/2024			SW846-6020B	=
Uranium	U	0.0002	mg/L	0.0002	7/24/2024			SW846-6020B	=
Vanadium	U	0.02	mg/L	0.02	7/24/2024			SW846-6020B	=
Zinc	J	0.00357	mg/L	0.02	7/24/2024			SW846-6020B	=
Mercury	U	0.0002	mg/L	0.0002	7/24/2024			SW846-7470A	=
Barium, Dissolved	<u>~</u>	0.28	mg/L	0.0002	7/24/2024			SW846-6020B	
Chromium, Dissolved	U	0.01	mg/L	0.01	7/24/2024			SW846-6020B	n
Jranium, Dissolved	U	0.0002	mg/L	0.0002	7/24/2024			SW846-6020B	UJ
Radium-226	U	0.448	pCi/L	0.852	7/24/2024	0.593	0.594	AN-1418	=
	U	0.440	PCI/ L	0.032	1127/2024	0.555	0.554	VIA 1410	-

Strontium-90	U	1.62	pCi/L	3.48	7/24/2024	2.05	2.06	EPA-905.0-M	=
Tritium	U	79.4	pCi/L	249	7/24/2024	144	145	EPA-906.0-M	=
Technetium-99	U	6.82	pCi/L	17.9	7/24/2024	10.5	10.5	HASL 300, Tc-02- RC M	=
Thorium-230	U	0.856	pCi/L	1.99	7/24/2024	1.23	1.24	HASL 300, Th-01- RC M	=
Alpha activity	U	0.787	pCi/L	7.44	7/24/2024	3.42	3.43	SW846-9310	=
Beta activity	U	3.93	pCi/L	7.25	7/24/2024	4.38	4.44	SW846-9310	=
1,2-Dibromo-3-chloropropane	U	0.0195	ug/L	0.0195	7/24/2024			SW846-8011	=
1,1,1,2-Tetrachloroethane	UY2	1	ug/L	1	7/24/2024			SW846-8260D	UJ
I,1,1-Trichloroethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
L,1,2,2-Tetrachloroethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
L,1,2-Trichloroethane	UY2	1	ug/L	1	7/24/2024			SW846-8260D	UJ
,1-Dichloroethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
1,1-Dichloroethene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
1,2,3-Trichloropropane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
1,2-Dibromoethane	UY2	1	ug/L	1	7/24/2024			SW846-8260D	UJ
L,2-Dichlorobenzene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
L,2-Dichloroethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
L,2-Dichloropropane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
L,4-Dichlorobenzene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
!-Butanone	U	5	ug/L	5	7/24/2024			SW846-8260D	=
2-Hexanone	UY2	5	ug/L	5	7/24/2024			SW846-8260D	UJ
-Methyl-2-pentanone	UY2	5	ug/L	5	7/24/2024			SW846-8260D	UJ
Acetone	U	5	ug/L	5	7/24/2024			SW846-8260D	=
Acrolein	U	5	ug/L	5	7/24/2024			SW846-8260D	UJ
Acrylonitrile	U	5	ug/L	5	7/24/2024			SW846-8260D	UJ
Benzene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Bromochloromethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Bromodichloromethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Bromoform	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Bromomethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Carbon disulfide	U	5	ug/L	5	7/24/2024			SW846-8260D	=
Carbon tetrachloride	U	1	ug/L	1	7/24/2024			SW846-8260D	UJ
Chlorobenzene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	UJ
Chloroethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Chloroform	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Chloromethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
is-1,2-Dichloroethene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
is-1,3-Dichloropropene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Dibromochloromethane	UY2	1	ug/L	1	7/24/2024			SW846-8260D	UJ
Dibromomethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Ethylbenzene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	UJ
odomethane	U	5	ug/L	5	7/24/2024			SW846-8260D	=
Methylene chloride	U	5	ug/L	5	7/24/2024			SW846-8260D	=
tyrene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	UJ
etrachloroethene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	UJ
oluene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	UJ
	U				7/24/2024				UJ
Fotal Xylene	UY2	3	ug/L	3	1/24/2024			SW846-8260D	0,5
•		3		3 1	7/24/2024			SW846-8260D	=
rans-1,2-Dichloroethene	UY2		ug/L	1					
rans-1,2-Dichloroethene rans-1,3-Dichloropropene	UY2 U	1	ug/L ug/L		7/24/2024			SW846-8260D	=
Total Xylene trans-1,2-Dichloroethene trans-1,3-Dichloropropene trans-1,4-Dichloro-2-butene Trichloroethene	UY2 U UY2	1	ug/L	1	7/24/2024 7/24/2024			SW846-8260D SW846-8260D	= UJ

Vinyl acetate	U	5	ug/L	5	7/24/2024	SW846-8260D =
Vinyl chloride	U	1	ug/L	1	7/24/2024	SW846-8260D =
Dissolved Solids		217	mg/L	10	7/24/2024	EPA-160.1 =
lodide	U	0.5	mg/L	0.5	7/24/2024	EPA-300.0 =
Chemical Oxygen Demand (COD)	J	11	mg/L	20	7/24/2024	EPA-410.4 =
Cyanide	U	0.2	mg/L	0.2	7/24/2024	SW846-9012B =
Total Organic Halides (TOX)	J	8.76	ug/L	10	7/24/2024	SW846-9020B =
Total Organic Carbon (TOC)	J	0.59	mg/L	2	7/24/2024	SW846-9060A =

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: MW395 UP RGA Type: LRGA Period: 3rd Quarter 2024

AKGWA Well Tag #: 8004-4801 SAMPLE ID: MW395SG4-24 Sample Type: REG

AKGWA Well Tag #:	8004-4801	8004-4801		E ID:	MW395SG4-2	4	Sample Type: <u>REG</u>		
Parameter	Qualifier	Result	Units	Reporting Limit	Date Collected	Counting Error (+/-)	TPU	Method	Validation
Bromide	W	0.622	mg/L	0.2	7/24/2024			SW846-9056A	=
Chloride	J	22.8	mg/L	250	7/24/2024			SW846-9056A	=
Fluoride	J	0.133	mg/L	4	7/24/2024			SW846-9056A	=
Nitrate as Nitrogen	J	1.27	mg/L	10	7/24/2024			SW846-9056A	=
Sulfate		11.1	mg/L	0.4	7/24/2024			SW846-9056A	=
Barometric Pressure Reading		30.16	Inches/Hg		7/24/2024				Х
Conductivity		391	μmhos/cm		7/24/2024				Х
Depth to Water		55.21	ft		7/24/2024				Х
Dissolved Oxygen		3.5	mg/L		7/24/2024				Х
ih (approx)		393	mV		7/24/2024				Х
oH		6.09	Std Unit		7/24/2024				Х
emperature		62.9	deg F		7/24/2024				Х
urbidity		1.09	NTU		7/24/2024				Х
.luminum	J	0.0325	mg/L	0.05	7/24/2024			SW846-6020B	=
Intimony	U	0.003	mg/L	0.003	7/24/2024			SW846-6020B	=
Arsenic	U	0.005	mg/L	0.005	7/24/2024			SW846-6020B	=
Barium		0.254	mg/L	0.004	7/24/2024			SW846-6020B	=
eryllium	U	0.0005	mg/L	0.0005	7/24/2024			SW846-6020B	=
oron	-	0.0195	mg/L	0.015	7/24/2024			SW846-6020B	=
admium	U	0.001	mg/L	0.001	7/24/2024			SW846-6020B	=
alcium	-	26.9	mg/L	0.2	7/24/2024			SW846-6020B	=
hromium	U	0.01	mg/L	0.01	7/24/2024			SW846-6020B	=
obalt	U	0.001	mg/L	0.001	7/24/2024			SW846-6020B	=
Copper	J	0.000944	mg/L	0.002	7/24/2024			SW846-6020B	=
ron		0.0913	mg/L	0.1	7/24/2024			SW846-6020B	=
ead	U	0.002	mg/L	0.002	7/24/2024			SW846-6020B	=
/lagnesium		11.3	mg/L	0.03	7/24/2024			SW846-6020B	=
Manganese	J	0.00361	mg/L	0.005	7/24/2024			SW846-6020B	=
Nolybdenum	U	0.001	mg/L	0.001	7/24/2024			SW846-6020B	=
lickel	U	0.002	mg/L	0.002	7/24/2024			SW846-6020B	=
otassium		1.55	mg/L	0.3	7/24/2024			SW846-6020B	=
thodium	U	0.005	mg/L	0.005	7/24/2024			SW846-6020B	=
elenium	U	0.005	mg/L	0.005	7/24/2024			SW846-6020B	=
ilver	U	0.003	mg/L	0.003	7/24/2024			SW846-6020B	=
odium	<u> </u>	30.8	mg/L	0.001	7/24/2024			SW846-6020B	=
antalum	U	0.005	mg/L	0.005	7/24/2024			SW846-6020B	=
hallium	U	0.003	mg/L	0.003	7/24/2024				
								SW846-6020B	=
ranium	U	0.0002	mg/L	0.0002	7/24/2024			SW846-6020B	=
'anadium	U	0.02	mg/L	0.02	7/24/2024			SW846-6020B	=
inc	U	0.02	mg/L	0.02	7/24/2024			SW846-6020B	=
Mercury	U	0.0002	mg/L	0.0002	7/24/2024			SW846-7470A	=
arium, Dissolved		0.252	mg/L	0.004	7/24/2024			SW846-6020B	J
Chromium, Dissolved	U	0.01	mg/L	0.01	7/24/2024			SW846-6020B	UJ
Jranium, Dissolved	U	0.0002	mg/L	0.0002	7/24/2024			SW846-6020B	UJ
Radium-226	U	0.493	pCi/L	0.738	7/24/2024	0.553	0.554	AN-1418	=

					- /- / /				
Strontium-90	U	2.45	pCi/L	6.16	7/24/2024	3.59	3.61	EPA-905.0-M	=
Tritium	U	78	pCi/L	253	7/24/2024	147	147	EPA-906.0-M	=
Fechnetium-99	U	3.05	pCi/L	18.3	7/24/2024	10.5	10.5	HASL 300, Tc-02- RC M	=
horium-230	U	0.181	pCi/L	1.75	7/24/2024	0.888	0.891	HASL 300, Th-01- RC M	=
Alpha activity	U	-2.48	pCi/L	7.63	7/24/2024	2.36	2.36	SW846-9310	UJ
Beta activity	U	5.15	pCi/L	9.74	7/24/2024	5.81	5.87	SW846-9310	=
1,2-Dibromo-3-chloropropane	U	0.019	ug/L	0.019	7/24/2024			SW846-8011	=
1,1,1,2-Tetrachloroethane	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
L,1,1-Trichloroethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
.,1,2,2-Tetrachloroethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
.,1,2-Trichloroethane	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
L,1-Dichloroethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
,1-Dichloroethene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
.,2,3-Trichloropropane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
I,2-Dibromoethane	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
,2-Dichlorobenzene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
L,2-Dichloroethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
L,2-Dichloropropane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
,4-Dichlorobenzene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
2-Butanone	U	5	ug/L	5	7/24/2024			SW846-8260D	=
?-Hexanone	UY2	5	ug/L	5	7/24/2024			SW846-8260D	=
l-Methyl-2-pentanone	UY2	5	ug/L	5	7/24/2024			SW846-8260D	=
Acetone	U	5	ug/L	5	7/24/2024			SW846-8260D	=
Acrolein	U	5	ug/L	5	7/24/2024			SW846-8260D	UJ
Acrylonitrile	U	5	ug/L	5	7/24/2024			SW846-8260D	UJ
Benzene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Promochloromethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Bromodichloromethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Bromoform	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Bromomethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Carbon disulfide	U	5	ug/L	5	7/24/2024			SW846-8260D	=
Carbon tetrachloride	U	1	ug/L	1	7/24/2024			SW846-8260D	UJ
Chlorobenzene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
Chloroethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Chloroform	U	1	ug/L	1	7/24/2024			SW846-8260D	
Chloromethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
cis-1,2-Dichloroethene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
cis-1,3-Dichloropropene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Dibromochloromethane	UY2	1	ug/L	1	7/24/2024			SW846-8260D	
Dibromomethane	U	1	ug/L	1	7/24/2024			SW846-8260D	
Ethylbenzene	UY2	1	ug/L ug/L	1	7/24/2024			SW846-8260D	
odomethane	U	5	ug/L ug/L	5	7/24/2024			SW846-8260D	
Methylene chloride	U	5	ug/L ug/L	5	7/24/2024			SW846-8260D SW846-8260D	
tyrene	UY2	1		1	7/24/2024			SW846-8260D SW846-8260D	UJ
etrachloroethene			ug/L						
	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
Toluene	UY2	1	ug/L	2	7/24/2024			SW846-8260D	=
Fotal Xylene	UY2	3	ug/L	3	7/24/2024			SW846-8260D	=
rans-1,2-Dichloroethene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
rans-1,3-Dichloropropene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
rans-1,4-Dichloro-2-butene	U	5	ug/L	5	7/24/2024			SW846-8260D	UJ
Frichland Constant Constant		5.29	ug/L	1	7/24/2024			SW846-8260D	=
Trichlorofluoromethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=

Vinyl acetate	U	5	ug/L	5	7/24/2024	SW846-8260D =
Vinyl chloride	U	1	ug/L	1	7/24/2024	SW846-8260D =
Dissolved Solids		214	mg/L	10	7/24/2024	EPA-160.1 =
lodide	U	0.5	mg/L	0.5	7/24/2024	EPA-300.0 =
Chemical Oxygen Demand (COD)	U	20	mg/L	20	7/24/2024	EPA-410.4 =
Cyanide	U	0.2	mg/L	0.2	7/24/2024	SW846-9012B =
Total Organic Halides (TOX)		18.9	ug/L	10	7/24/2024	SW846-9020B =
Total Organic Carbon (TOC)	J	0.573	mg/L	2	7/24/2024	SW846-9060A =

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: MW396 UP RGA Type: UCRS Period: 3rd Quarter 2024

AKGWA Well Tag #: 8004-4803 SAMPLE ID: MW396SG4-24 Sample Type: REG

AKGWA Well Tag #:	8004-4803		SAMPLE ID:		MW396SG4-24		Sample T		
Parameter	Qualifier	Result	Units	Reporting Limit	Date Collected	Counting Error (+/-)	TPU	Method	Validation
Bromide	W	1.09	mg/L	0.2	7/24/2024			SW846-9056A	=
Chloride	J	56.8	mg/L	250	7/24/2024			SW846-9056A	=
·luoride	J	0.62	mg/L	4	7/24/2024			SW846-9056A	=
litrate as Nitrogen	J	0.149	mg/L	10	7/24/2024			SW846-9056A	=
ulfate		27.5	mg/L	4	7/24/2024			SW846-9056A	=
arometric Pressure Reading		30.16	Inches/Hg		7/24/2024				Х
Conductivity		643	μmhos/cm		7/24/2024				Х
epth to Water		13.05	ft		7/24/2024				Х
Dissolved Oxygen		2.61	mg/L		7/24/2024				Х
h (approx)		373	mV		7/24/2024				Х
Н		6.58	Std Unit		7/24/2024				Х
emperature		63.6	deg F		7/24/2024				Х
urbidity		0	NTU		7/24/2024				Х
luminum	U	0.05	mg/L	0.05	7/24/2024			SW846-6020B	=
ntimony	U	0.003	mg/L	0.003	7/24/2024			SW846-6020B	=
rsenic	U	0.005	mg/L	0.005	7/24/2024			SW846-6020B	=
arium		0.353	mg/L	0.004	7/24/2024			SW846-6020B	=
eryllium	U	0.0005	mg/L	0.0005	7/24/2024			SW846-6020B	=
oron	J	0.00561	mg/L	0.015	7/24/2024			SW846-6020B	=
admium	U	0.001	mg/L	0.001	7/24/2024			SW846-6020B	=
alcium		29.8	mg/L	0.2	7/24/2024			SW846-6020B	=
hromium	U	0.01	mg/L	0.01	7/24/2024			SW846-6020B	=
obalt	U	0.001	mg/L	0.001	7/24/2024			SW846-6020B	=
opper	J	0.000865	mg/L	0.002	7/24/2024			SW846-6020B	=
on	J	0.0539	mg/L	0.1	7/24/2024			SW846-6020B	=
ead	U	0.002	mg/L	0.002	7/24/2024			SW846-6020B	=
1agnesium		13.3	mg/L	0.03	7/24/2024			SW846-6020B	=
/langanese		0.00937	mg/L	0.005	7/24/2024			SW846-6020B	=
1olybdenum	J	0.00034	mg/L	0.001	7/24/2024			SW846-6020B	=
lickel	U	0.002	mg/L	0.002	7/24/2024			SW846-6020B	=
otassium		0.748	mg/L	0.3	7/24/2024			SW846-6020B	=
hodium	U	0.005	mg/L	0.005	7/24/2024			SW846-6020B	=
elenium	U	0.005	mg/L	0.005	7/24/2024			SW846-6020B	=
ilver	U	0.001	mg/L	0.001	7/24/2024			SW846-6020B	=
odium		87.9	mg/L	2.5	7/24/2024			SW846-6020B	=
antalum	U	0.005	mg/L	0.005	7/24/2024			SW846-6020B	=
hallium	U	0.002	mg/L	0.002	7/24/2024			SW846-6020B	=
ranium	U	0.0002	mg/L	0.0002	7/24/2024			SW846-6020B	=
anadium	U	0.02	mg/L	0.02	7/24/2024			SW846-6020B	=
inc	U	0.02	mg/L	0.02	7/24/2024			SW846-6020B	=
Mercury	U	0.0002	mg/L	0.0002	7/24/2024			SW846-7470A	=
arium, Dissolved		0.351	mg/L	0.004	7/24/2024			SW846-6020B	J
thromium, Dissolved	U	0.01	mg/L	0.01	7/24/2024			SW846-6020B	n
Iranium, Dissolved	U	0.0002	mg/L	0.0002	7/24/2024			SW846-6020B	UJ
adium-226		0.994	pCi/L	0.769	7/24/2024	0.739	0.743	AN-1418	=
addidill-220		0.554	pci/ L	0.703	1/27/2024	0.733	0.743	VIA-1410	-

Strontium-90	U	0.415	pCi/L	3.87	7/24/2024	2.12	2.12	EPA-905.0-M	=
Tritium	U	83.6	pCi/L	255	7/24/2024	148	149	EPA-906.0-M	=
Technetium-99	U	-8.86	pCi/L	18.2	7/24/2024	9.7	9.7	HASL 300, Tc-02- RC M	=
Thorium-230	U	0.146	pCi/L	1.39	7/24/2024	0.7	0.702	HASL 300, Th-01- RC M	=
Alpha activity	U	3.42	pCi/L	8.84	7/24/2024	5.05	5.09	SW846-9310	=
Beta activity	U	1.29	pCi/L	9.93	7/24/2024	5.43	5.44	SW846-9310	=
1,2-Dibromo-3-chloropropane	U	0.0193	ug/L	0.0193	7/24/2024			SW846-8011	=
1,1,1,2-Tetrachloroethane	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
1,1,1-Trichloroethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
1,1,2,2-Tetrachloroethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
1,1,2-Trichloroethane	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
1,1-Dichloroethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
1,1-Dichloroethene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
1,2,3-Trichloropropane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
1,2-Dibromoethane	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
1,2-Dichlorobenzene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
1,2-Dichloroethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
1,2-Dichloropropane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
1,4-Dichlorobenzene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
2-Butanone	U	5	ug/L	5	7/24/2024			SW846-8260D	=
2-Hexanone	UY2	5	ug/L	5	7/24/2024			SW846-8260D	=
4-Methyl-2-pentanone	UY2	5	ug/L	5	7/24/2024			SW846-8260D	=
Acetone	J	1.85	ug/L	5	7/24/2024			SW846-8260D	=
Acrolein	U	5	ug/L	5	7/24/2024			SW846-8260D	UJ
Acrylonitrile	U	5	ug/L	5	7/24/2024			SW846-8260D	UJ
Benzene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Bromochloromethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Bromodichloromethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Bromoform	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Bromomethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Carbon disulfide	U	5	ug/L	5	7/24/2024			SW846-8260D	=
Carbon tetrachloride	U	1	ug/L	1	7/24/2024			SW846-8260D	UJ
Chlorobenzene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
Chloroethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Chloroform	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Chloromethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
cis-1,2-Dichloroethene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
cis-1,3-Dichloropropene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Dibromochloromethane	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
Dibromomethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Ethylbenzene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
Iodomethane	U	5	ug/L	5	7/24/2024			SW846-8260D	=
Methylene chloride	U	5	ug/L	5	7/24/2024			SW846-8260D	=
Styrene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	UJ
Tetrachloroethene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
Toluene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
Total Xylene	UY2	3	ug/L	3	7/24/2024	-		SW846-8260D	=
trans-1,2-Dichloroethene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
trans-1,3-Dichloropropene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
trans-1,4-Dichloro-2-butene	U	5	ug/L	5	7/24/2024			SW846-8260D	UJ
Trichloroethene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Trichlorofluoromethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=

Vinyl acetate	U	5	ug/L	5	7/24/2024	SW846-8260D =
Vinyl chloride	U	1	ug/L	1	7/24/2024	SW846-8260D =
Dissolved Solids		398	mg/L	10	7/24/2024	EPA-160.1 =
lodide	U	0.5	mg/L	0.5	7/24/2024	EPA-300.0 =
Chemical Oxygen Demand (COD)	J	18	mg/L	20	7/24/2024	EPA-410.4 =
Cyanide	U	0.2	mg/L	0.2	7/24/2024	SW846-9012B =
Total Organic Halides (TOX)		42.6	ug/L	10	7/24/2024	SW846-9020B =
Total Organic Carbon (TOC)		3.51	mg/L	2	7/24/2024	SW846-9060A =

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: MW397 UP RGA Type: LRGA Period: 3rd Quarter 2024

AKGWA Well Tag #: 8004-4817 SAMPLE ID: MW397SG4-24 Sample Type: REG

AKGWA Well Tag #:	8004-4817		SAMPLI	E ID:	MW397SG4-2	4	Sample Ty	-	
Parameter	Qualifier	Result	Units	Reporting Limit	Date Collected	Counting Error (+/-)	TPU	Method	Validation
Bromide	-	0.37	mg/L	0.2	7/22/2024			SW846-9056A	=
Chloride	JW	33.4	mg/L	250	7/22/2024			SW846-9056A	=
Fluoride	*J	0.202	mg/L	4	7/22/2024			SW846-9056A	=
Nitrate as Nitrogen	J	1.03	mg/L	10	7/22/2024			SW846-9056A	=
Sulfate		11.8	mg/L	0.4	7/22/2024			SW846-9056A	=
Barometric Pressure Reading		30.01	Inches/Hg		7/22/2024				Х
Conductivity		318	μmhos/cm		7/22/2024				Х
Depth to Water		62.82	ft		7/22/2024				Х
Dissolved Oxygen		6.17	mg/L		7/22/2024				Х
Eh (approx)		397	mV		7/22/2024				Х
oH		5.95	Std Unit		7/22/2024				Х
emperature		65.7	deg F		7/22/2024				Х
urbidity		3.02	NTU		7/22/2024				Х
Aluminum		0.205	mg/L	0.05	7/22/2024			SW846-6020B	=
Antimony	U	0.003	mg/L	0.003	7/22/2024			SW846-6020B	=
Arsenic	U	0.005	mg/L	0.005	7/22/2024			SW846-6020B	=
Barium		0.131	mg/L	0.004	7/22/2024			SW846-6020B	=
Beryllium	U	0.0005	mg/L	0.0005	7/22/2024			SW846-6020B	=
Boron	J	0.00783	mg/L	0.015	7/22/2024			SW846-6020B	=
Cadmium	U	0.001	mg/L	0.001	7/22/2024			SW846-6020B	=
Calcium	-	18.4	mg/L	0.2	7/22/2024			SW846-6020B	=
Chromium	U	0.01	mg/L	0.01	7/22/2024			SW846-6020B	=
Cobalt	U	0.001	mg/L	0.001	7/22/2024			SW846-6020B	=
Copper	J	0.00092	mg/L	0.002	7/22/2024			SW846-6020B	=
ron		0.56	mg/L	0.1	7/22/2024			SW846-6020B	=
ead	U	0.002	mg/L	0.002	7/22/2024			SW846-6020B	=
/Jagnesium		7.52	mg/L	0.03	7/22/2024			SW846-6020B	=
Manganese		0.0102	mg/L	0.005	7/22/2024			SW846-6020B	=
Molybdenum	U	0.001	mg/L	0.001	7/22/2024			SW846-6020B	=
lickel	J	0.000875	mg/L	0.002	7/22/2024			SW846-6020B	=
Potassium	<u> </u>	1.77	mg/L	0.3	7/22/2024			SW846-6020B	=
Rhodium	U	0.005	mg/L	0.005	7/22/2024			SW846-6020B	=
elenium	U	0.005	mg/L	0.005	7/22/2024			SW846-6020B	=
ilver	U	0.003	mg/L	0.003	7/22/2024			SW846-6020B	=
odium		32.3	mg/L	0.001	7/22/2024			SW846-6020B	
antalum	UN	0.005	mg/L	0.005	7/22/2024			SW846-6020B	=
hallium	U	0.003	mg/L	0.003					
Iranium Iranium	U	0.002	mg/L	0.002	7/22/2024			SW846-6020B SW846-6020B	=
/anadium	U	0.0002	mg/L		7/22/2024				=
				0.02				SW846-6020B	=
inc Agraury	J	0.00387	mg/L	0.02	7/22/2024			SW846-6020B	=
Mercury	U	0.0002	mg/L	0.0002	7/22/2024			SW846-7470A	=
Barium, Dissolved		0.127	mg/L	0.004	7/22/2024			SW846-6020B	J
Chromium, Dissolved	U	0.01	mg/L	0.01	7/22/2024			SW846-6020B	UJ
Jranium, Dissolved	U	0.0002	mg/L	0.0002	7/22/2024		0	SW846-6020B	UJ
Radium-226		0.886	pCi/L	0.653	7/22/2024	0.7	0.702	AN-1418	=

Strontium-90	U	-0.659	pCi/L	6.69	7/22/2024	3.54	3.54	EPA-905.0-M	=
Tritium	U	44.2	pCi/L	248	7/22/2024	143	143	EPA-906.0-M	=
Technetium-99	U	9.13	pCi/L	15.7	7/22/2024	9.42	9.47	HASL 300, Tc-02- RC M	=
Thorium-230	U	0.228	pCi/L	0.536	7/22/2024	0.339	0.342	HASL 300, Th-01- RC M	=
Alpha activity	U	5.23	pCi/L	8.91	7/22/2024	5.52	5.59	SW846-9310	=
Beta activity		16.4	pCi/L	9.54	7/22/2024	7.04	7.55	SW846-9310	=
1,2-Dibromo-3-chloropropane	U	0.019	ug/L	0.019	7/22/2024			SW846-8011	=
1,1,1,2-Tetrachloroethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
1,1,1-Trichloroethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
1,1,2,2-Tetrachloroethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
1,1,2-Trichloroethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
1,1-Dichloroethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
1,1-Dichloroethene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
1,2,3-Trichloropropane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
1,2-Dibromoethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
1,2-Dichlorobenzene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
1,2-Dichloroethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
1,2-Dichloropropane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
1,4-Dichlorobenzene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
2-Butanone	U	5	ug/L	5	7/22/2024			SW846-8260D	=
2-Hexanone	U	5	ug/L	5	7/22/2024			SW846-8260D	=
1-Methyl-2-pentanone	U	5	ug/L	5	7/22/2024			SW846-8260D	=
Acetone	U	5	ug/L	5	7/22/2024			SW846-8260D	=
Acrolein	U	5	ug/L	5	7/22/2024			SW846-8260D	UJ
Acrylonitrile	U	5	ug/L	5	7/22/2024			SW846-8260D	UJ
Benzene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Bromochloromethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Bromodichloromethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Bromoform	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Bromomethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Carbon disulfide	U	5	ug/L	5	7/22/2024			SW846-8260D	=
Carbon tetrachloride	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Chlorobenzene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Chloroethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Chloroform	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Chloromethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
cis-1,2-Dichloroethene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
cis-1,3-Dichloropropene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Dibromochloromethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Dibromomethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Ethylbenzene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
lodomethane	U	5	ug/L	5	7/22/2024			SW846-8260D	=
Methylene chloride	J	0.69	ug/L	5	7/22/2024			SW846-8260D	=
Styrene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Tetrachloroethene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Toluene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Total Xylene	U	3	ug/L	3	7/22/2024			SW846-8260D	=
trans-1,2-Dichloroethene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
trans-1,3-Dichloropropene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
trans-1,4-Dichloro-2-butene	U	5	ug/L	5	7/22/2024			SW846-8260D	UJ
Trichloroethene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Trichlorofluoromethane	U	1		1	7/22/2024			SW846-8260D	=

Vinyl acetate	U	5	ug/L	5	7/22/2024	SW846-8260D =
Vinyl chloride	U	1	ug/L	1	7/22/2024	SW846-8260D =
Dissolved Solids		160	mg/L	10	7/22/2024	EPA-160.1 =
lodide	U	0.5	mg/L	0.5	7/22/2024	EPA-300.0 =
Chemical Oxygen Demand (COD)	U	20	mg/L	20	7/22/2024	EPA-410.4 =
Cyanide	U	0.2	mg/L	0.2	7/22/2024	SW846-9012B =
Total Organic Halides (TOX)	J	5	ug/L	10	7/22/2024	SW846-9020B =
Total Organic Carbon (TOC)	J	0.536	mg/L	2	7/22/2024	SW846-9060A =

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: QC Period: 3rd Quarter 2024

AKGWA Well Tag #: N/A SAMPLE ID: FB1SG4-24 Sample Type: FB

ANGWA Well Tug #.	IN/ A		SAIVIE	LL ID. FD	1304-24	Sample Type			
Parameter	Qualifier	Result	Units	Reporting Limit	Date Collected	Counting Error (+/-)	TPU	Method	Validation
Aluminum	U	0.05	mg/L	0.05	7/25/2024			SW846-6020B	=
Antimony	U	0.003	mg/L	0.003	7/25/2024			SW846-6020B	=
Arsenic	U	0.005	mg/L	0.005	7/25/2024			SW846-6020B	=
Barium	U	0.004	mg/L	0.004	7/25/2024			SW846-6020B	=
Beryllium	U	0.0005	mg/L	0.0005	7/25/2024			SW846-6020B	=
Boron	U	0.015	mg/L	0.015	7/25/2024			SW846-6020B	=
Cadmium	U	0.001	mg/L	0.001	7/25/2024			SW846-6020B	=
Calcium	U	0.2	mg/L	0.2	7/25/2024			SW846-6020B	=
Chromium	U	0.01	mg/L	0.01	7/25/2024			SW846-6020B	=
Cobalt	U	0.001	mg/L	0.001	7/25/2024			SW846-6020B	=
Copper	U	0.002	mg/L	0.002	7/25/2024			SW846-6020B	=
Iron	U	0.1	mg/L	0.1	7/25/2024			SW846-6020B	=
Lead	U	0.002	mg/L	0.002	7/25/2024			SW846-6020B	=
Magnesium	U	0.03	mg/L	0.03	7/25/2024			SW846-6020B	=
Manganese	U	0.005	mg/L	0.005	7/25/2024			SW846-6020B	=
Molybdenum	U	0.001	mg/L	0.001	7/25/2024			SW846-6020B	=
Nickel	U	0.002	mg/L	0.002	7/25/2024			SW846-6020B	=
Potassium	U	0.3	mg/L	0.3	7/25/2024			SW846-6020B	=
Rhodium	U	0.005	mg/L	0.005	7/25/2024			SW846-6020B	=
Selenium	U	0.005	mg/L	0.005	7/25/2024			SW846-6020B	=
Silver	U	0.001	mg/L	0.001	7/25/2024			SW846-6020B	=
Sodium	U	0.25	mg/L	0.25	7/25/2024			SW846-6020B	=
Tantalum	U	0.005	mg/L	0.005	7/25/2024			SW846-6020B	=
Thallium	U	0.002	mg/L	0.002	7/25/2024			SW846-6020B	=
Uranium	U	0.0002	mg/L	0.0002	7/25/2024			SW846-6020B	=
Vanadium	J	0.005	mg/L	0.02	7/25/2024			SW846-6020B	=
Zinc	U	0.02	mg/L	0.02	7/25/2024			SW846-6020B	=
Mercury	U	0.0002	mg/L	0.0002	7/25/2024			SW846-7470A	=
Radium-226	U	0.352	pCi/L	0.798	7/25/2024	0.536	0.537	AN-1418	=
Strontium-90	U	0.226	pCi/L	4.35	7/25/2024	2.31	2.31	EPA-905.0-M	=
Tritium	U	38.5	pCi/L	290	7/25/2024	164	164	EPA-906.0-M	=
Technetium-99	U	-4.15	pCi/L	17.8	7/25/2024	9.78	9.78	HASL 300, Tc-02-RC	M =
Thorium-230	U	0.868	pCi/L	1.75	7/25/2024	1.11	1.12	HASL 300, Th-01-RC	M =
Alpha activity	U	3.41	pCi/L	5.05	7/25/2024	3.42	3.47	SW846-9310	UJ
Beta activity	U	-5.47	pCi/L	11	7/25/2024	5.21	5.21	SW846-9310	UJ
1,2-Dibromo-3-chloropropane	U	0.019	ug/L	0.019	7/25/2024			SW846-8011	=
1,1,1,2-Tetrachloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,1,1-Trichloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,1,2,2-Tetrachloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,1,2-Trichloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,1-Dichloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,1-Dichloroethene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,2,3-Trichloropropane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,2-Dibromoethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,2-Dichlorobenzene	U	1	ug/L	1	7/25/2024			SW846-8260D	=

1,2-Dichloroethane	U	1	ug/L	1	7/25/2024	SW846-8260D	=
1,2-Dichloropropane	U	1	ug/L	1	7/25/2024	SW846-8260D	=
1,4-Dichlorobenzene	U	1	ug/L	1	7/25/2024	SW846-8260D	=
2-Butanone	U	5	ug/L	5	7/25/2024	SW846-8260D	=
2-Hexanone	U	5	ug/L	5	7/25/2024	SW846-8260D	=
4-Methyl-2-pentanone	U	5	ug/L	5	7/25/2024	SW846-8260D	=
Acetone	U	5	ug/L	5	7/25/2024	SW846-8260D	=
Acrolein	U	5	ug/L	5	7/25/2024	SW846-8260D	UJ
Acrylonitrile	U	5	ug/L	5	7/25/2024	SW846-8260D	UJ
Benzene	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Bromochloromethane	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Bromodichloromethane	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Bromoform	U	1	ug/L	1	7/25/2024	SW846-8260D	=.
Bromomethane	U	1	ug/L	1	7/25/2024	SW846-8260D	=.
Carbon disulfide	U	5	ug/L	5	7/25/2024	SW846-8260D	=.
Carbon tetrachloride	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Chlorobenzene	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Chloroethane	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Chloroform	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Chloromethane	U	1	ug/L	1	7/25/2024	SW846-8260D	=
cis-1,2-Dichloroethene	U	1	ug/L	1	7/25/2024	SW846-8260D	=.
cis-1,3-Dichloropropene	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Dibromochloromethane	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Dibromomethane	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Ethylbenzene	U	1	ug/L	1	7/25/2024	SW846-8260D	=.
lodomethane	U	5	ug/L	5	7/25/2024	SW846-8260D	=
Methylene chloride	U	5	ug/L	5	7/25/2024	SW846-8260D	=
Styrene	U	1	ug/L	1	7/25/2024	SW846-8260D	=.
Tetrachloroethene	U	1	ug/L	1	7/25/2024	SW846-8260D	=.
Toluene	U	1	ug/L	1	7/25/2024	SW846-8260D	=.
Total Xylene	U	3	ug/L	3	7/25/2024	SW846-8260D	=
trans-1,2-Dichloroethene	U	1	ug/L	1	7/25/2024	SW846-8260D	=
trans-1,3-Dichloropropene	U	1	ug/L	1	7/25/2024	SW846-8260D	=
trans-1,4-Dichloro-2-butene	U	5	ug/L	5	7/25/2024	SW846-8260D	UJ
Trichloroethene	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Trichlorofluoromethane	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Vinyl acetate	U	5	ug/L	5	7/25/2024	SW846-8260D	=
Vinyl chloride	U	1	ug/L	1	7/25/2024	SW846-8260D	=
lodide	U	0.5	mg/L	0.5	7/25/2024	EPA-300.0	=

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: QC Period: 3rd Quarter 2024

AKGWA Well Tag #: N/A SAMPLE ID: RI1SG4-24 Sample Type: RI

ARGWA Well Tag #.	N/A	SAIVIPLE ID: RI1564-24 Sample Type: 14							
				Reporting	Date	Counting			
Parameter	Qualifier	Result	Units	Limit	Collected	Error (+/-)	TPU		/alidation
Aluminum	U	0.05	mg/L	0.05	7/25/2024			SW846-6020B	=
Antimony	U	0.003	mg/L	0.003	7/25/2024			SW846-6020B	=.
Arsenic	U	0.005	mg/L	0.005	7/25/2024			SW846-6020B	=
Barium	U	0.004	mg/L	0.004	7/25/2024			SW846-6020B	=
Beryllium	U	0.0005	mg/L	0.0005	7/25/2024			SW846-6020B	=
Boron	U	0.015	mg/L	0.015	7/25/2024			SW846-6020B	=
Cadmium	U	0.001	mg/L	0.001	7/25/2024			SW846-6020B	=
Calcium	U	0.2	mg/L	0.2	7/25/2024			SW846-6020B	=
Chromium	U	0.01	mg/L	0.01	7/25/2024			SW846-6020B	=
Cobalt	U	0.001	mg/L	0.001	7/25/2024			SW846-6020B	=
Copper	U	0.002	mg/L	0.002	7/25/2024			SW846-6020B	=
Iron	U	0.1	mg/L	0.1	7/25/2024			SW846-6020B	=
Lead	U	0.002	mg/L	0.002	7/25/2024			SW846-6020B	=
Magnesium	U	0.03	mg/L	0.03	7/25/2024			SW846-6020B	=
Manganese	U	0.005	mg/L	0.005	7/25/2024			SW846-6020B	=
Molybdenum	U	0.001	mg/L	0.001	7/25/2024			SW846-6020B	=
Nickel	U	0.002	mg/L	0.002	7/25/2024			SW846-6020B	=
Potassium	U	0.3	mg/L	0.3	7/25/2024			SW846-6020B	=
Rhodium	U	0.005	mg/L	0.005	7/25/2024			SW846-6020B	=
Selenium	U	0.005	mg/L	0.005	7/25/2024			SW846-6020B	=
Silver	U	0.001	mg/L	0.001	7/25/2024			SW846-6020B	=
Sodium	U	0.25	mg/L	0.25	7/25/2024			SW846-6020B	=
Tantalum	U	0.005	mg/L	0.005	7/25/2024			SW846-6020B	=
Thallium	U	0.002	mg/L	0.002	7/25/2024			SW846-6020B	=
Uranium	U	0.0002	mg/L	0.0002	7/25/2024			SW846-6020B	=
Vanadium	J	0.00524	mg/L	0.02	7/25/2024			SW846-6020B	=
Zinc	U	0.02	mg/L	0.02	7/25/2024			SW846-6020B	=
Mercury	U	0.0002	mg/L	0.0002	7/25/2024			SW846-7470A	=
Radium-226	U	0.207	pCi/L	0.714	7/25/2024	0.431	0.431	AN-1418	
Strontium-90	U	3.51	pCi/L	5.72	7/25/2024	3.45	3.5	EPA-905.0-M	=
Tritium	U	119							=
Technetium-99	U	2.04	pCi/L pCi/L	293 17.4	7/25/2024 7/25/2024	9.92	9.92	EPA-906.0-M HASL 300, Tc-02-RC	
								•	
Thorium-230	U	1.49		1.53	7/25/2024	1.21		HASL 300, Th-01-RC	
Alpha activity	U	-1.01	pCi/L	8.53	7/25/2024	3.36	3.36	SW846-9310	UJ
Beta activity	U	0.746	pCi/L	8.38	7/25/2024	4.47	4.47	SW846-9310	=
1,2-Dibromo-3-chloropropane	U	0.0191	ug/L	0.0191	7/25/2024			SW846-8011	=
1,1,1,2-Tetrachloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,1,1-Trichloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,1,2,2-Tetrachloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,1,2-Trichloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,1-Dichloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,1-Dichloroethene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,2,3-Trichloropropane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,2-Dibromoethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,2-Dichlorobenzene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
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1,2-Dichloroethane	U	1	ug/L	1	7/25/2024	SW846-8260D	=
1,2-Dichloropropane	U	1	ug/L	1	7/25/2024	SW846-8260D	=
1,4-Dichlorobenzene	U	1	ug/L	1	7/25/2024	SW846-8260D	=
2-Butanone	U	5	ug/L	5	7/25/2024	SW846-8260D	=
2-Hexanone	U	5	ug/L	5	7/25/2024	SW846-8260D	=
4-Methyl-2-pentanone	U	5	ug/L	5	7/25/2024	SW846-8260D	=
Acetone	U	5	ug/L	5	7/25/2024	SW846-8260D	=
Acrolein	U	5	ug/L	5	7/25/2024	SW846-8260D	UJ
Acrylonitrile	U	5	ug/L	5	7/25/2024	SW846-8260D	UJ
Benzene	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Bromochloromethane	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Bromodichloromethane	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Bromoform	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Bromomethane	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Carbon disulfide	U	5	ug/L	5	7/25/2024	SW846-8260D	=
Carbon tetrachloride	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Chlorobenzene	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Chloroethane	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Chloroform	J	0.43	ug/L	1	7/25/2024	SW846-8260D	=
Chloromethane	U	1	ug/L	1	7/25/2024	SW846-8260D	=
cis-1,2-Dichloroethene	U	1	ug/L	1	7/25/2024	SW846-8260D	=
cis-1,3-Dichloropropene	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Dibromochloromethane	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Dibromomethane	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Ethylbenzene	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Iodomethane	U	5	ug/L	5	7/25/2024	SW846-8260D	=
Methylene chloride	U	5	ug/L	5	7/25/2024	SW846-8260D	=
Styrene	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Tetrachloroethene	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Toluene	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Total Xylene	U	3	ug/L	3	7/25/2024	SW846-8260D	=
trans-1,2-Dichloroethene	U	1	ug/L	1	7/25/2024	SW846-8260D	=
trans-1,3-Dichloropropene	U	1	ug/L	1	7/25/2024	SW846-8260D	=
trans-1,4-Dichloro-2-butene	U	5	ug/L	5	7/25/2024	SW846-8260D	UJ
Trichloroethene	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Trichlorofluoromethane	U	1	ug/L	1	7/25/2024	SW846-8260D	=
Vinyl acetate	U	5	ug/L	5	7/25/2024	SW846-8260D	=
Vinyl chloride	U	1	ug/L	1	7/25/2024	SW846-8260D	=
lodide	U	0.5	mg/L	0.5	7/25/2024	EPA-300.0	=
-			•				

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: QC Period: 3rd Quarter 2024

AKGWA Well Tag #: N/A SAMPLE ID: TB1SG4-24 Sample Type: TB

ANGWA Well Tag #.	N/A		SAIVII	LE ID: 18	315G4-24	Sample	e rype	: <u>''</u>	
				Reporting	Date	Counting			
Parameter	Qualifier	Result	Units	Limit	Collected	Error (+/-)	TPU	Method	Validation
1,2-Dibromo-3-chloropropane	U	0.0189	ug/L	0.0189	7/22/2024			SW846-8011	=
1,1,1,2-Tetrachloroethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
1,1,1-Trichloroethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
1,1,2,2-Tetrachloroethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
1,1,2-Trichloroethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
1,1-Dichloroethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
1,1-Dichloroethene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
1,2,3-Trichloropropane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
1,2-Dibromoethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
1,2-Dichlorobenzene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
1,2-Dichloroethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
1,2-Dichloropropane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
1,4-Dichlorobenzene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
2-Butanone	U	5	ug/L	5	7/22/2024			SW846-8260D	=
2-Hexanone	U	5	ug/L	5	7/22/2024			SW846-8260D	=
4-Methyl-2-pentanone	U	5	ug/L	5	7/22/2024			SW846-8260D	=
Acetone	J	3.34	ug/L	5	7/22/2024			SW846-8260D	=
Acrolein	U	5	ug/L	5	7/22/2024			SW846-8260D	UJ
Acrylonitrile	U	5	ug/L	5	7/22/2024			SW846-8260D	UJ
Benzene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Bromochloromethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Bromodichloromethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Bromoform	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Bromomethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Carbon disulfide	U	5	ug/L	5	7/22/2024			SW846-8260D	=
Carbon tetrachloride	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Chlorobenzene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Chloroethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Chloroform	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Chloromethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
cis-1,2-Dichloroethene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
cis-1,3-Dichloropropene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Dibromochloromethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Dibromomethane	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Ethylbenzene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Iodomethane	U	5	ug/L	5	7/22/2024			SW846-8260D	=
Methylene chloride	J	0.85	ug/L	5	7/22/2024			SW846-8260D	=
Styrene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Tetrachloroethene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Toluene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
Total Xylene	U	3	ug/L	3	7/22/2024			SW846-8260D	=
trans-1,2-Dichloroethene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
trans-1,3-Dichloropropene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
trans-1,4-Dichloro-2-butene	U	5	ug/L	5	7/22/2024			SW846-8260D	UJ
Trichloroethene	U	1	ug/L	1	7/22/2024			SW846-8260D	=
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Trichlorofluoromethane	U	1 ug/L	1	7/22/2024	SW846-8260D	=
Vinyl acetate	U	5 ug/L	5	7/22/2024	SW846-8260D	=
Vinyl chloride	U	1 ug/L	1	7/22/2024	SW846-8260D	=

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: QC Period: 3rd Quarter 2024

AKGWA Well Tag #: N/A SAMPLE ID: TB2SG4-24 Sample Type: TB

ANGWA Well Tag #.	N/A		SAIVII	PLE ID: 18	32SG4-24	Sample	етуре	: <u>''</u>	
				Reporting	Date	Counting			
Parameter	Qualifier	Result	Units	Limit	Collected	Error (+/-)	TPU	Method	Validation
1,2-Dibromo-3-chloropropane	U	0.0191	ug/L	0.0191	7/23/2024			SW846-8011	=
1,1,1,2-Tetrachloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,1,1-Trichloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,1,2,2-Tetrachloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,1,2-Trichloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,1-Dichloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,1-Dichloroethene	U	1	ug/L	1	7/23/2024			SW846-8260D	=,
1,2,3-Trichloropropane	U	1	ug/L	1	7/23/2024			SW846-8260D	=,
1,2-Dibromoethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,2-Dichlorobenzene	U	1	ug/L	1	7/23/2024			SW846-8260D	=,
1,2-Dichloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=,
1,2-Dichloropropane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
1,4-Dichlorobenzene	U	1	ug/L	1	7/23/2024			SW846-8260D	=,
2-Butanone	U	5	ug/L	5	7/23/2024			SW846-8260D	=
2-Hexanone	U	5	ug/L	5	7/23/2024			SW846-8260D	=,
4-Methyl-2-pentanone	U	5	ug/L	5	7/23/2024			SW846-8260D	=
Acetone	U	5	ug/L	5	7/23/2024			SW846-8260D	=
Acrolein	U	5	ug/L	5	7/23/2024			SW846-8260D	UJ
Acrylonitrile	U	5	ug/L	5	7/23/2024			SW846-8260D	UJ
Benzene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Bromochloromethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Bromodichloromethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Bromoform	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Bromomethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Carbon disulfide	U	5	ug/L	5	7/23/2024			SW846-8260D	=
Carbon tetrachloride	U	1	ug/L	1	7/23/2024			SW846-8260D	UJ
Chlorobenzene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Chloroethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Chloroform	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Chloromethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
cis-1,2-Dichloroethene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
cis-1,3-Dichloropropene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Dibromochloromethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Dibromomethane	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Ethylbenzene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Iodomethane	U	5	ug/L	5	7/23/2024			SW846-8260D	=
Methylene chloride	U	5	ug/L	5	7/23/2024			SW846-8260D	=
Styrene	U	1	ug/L	1	7/23/2024			SW846-8260D	UJ
Tetrachloroethene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Toluene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
Total Xylene	U	3	ug/L	3	7/23/2024			SW846-8260D	=
trans-1,2-Dichloroethene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
trans-1,3-Dichloropropene	U	1	ug/L	1	7/23/2024			SW846-8260D	=
trans-1,4-Dichloro-2-butene	U	5	ug/L	5	7/23/2024			SW846-8260D	UJ
Trichloroethene	U	1		1	7/23/2024			SW846-8260D	=
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Trichlorofluoromethane	U	1 ug/L	1	7/23/2024	SW846-8260D	=
Vinyl acetate	U	5 ug/L	5	7/23/2024	SW846-8260D	=
Vinyl chloride	U	1 ug/L	1	7/23/2024	SW846-8260D	=

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: QC Period: 3rd Quarter 2024

AKGWA Well Tag #: N/A SAMPLE ID: TB3SG4-24 Sample Type: TB

ANGWA Well Tag #.	N/A		SAIVII	PLE ID: 18	33564-24	Sample	e rype	: <u>''</u>	
				Reporting	Date	Counting			
Parameter	Qualifier	Result	Units	Limit	Collected	Error (+/-)	TPU	Method	Validation
1,2-Dibromo-3-chloropropane	U	0.0191	ug/L	0.0191	7/24/2024			SW846-8011	=
1,1,1,2-Tetrachloroethane	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
1,1,1-Trichloroethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
1,1,2,2-Tetrachloroethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
1,1,2-Trichloroethane	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
1,1-Dichloroethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
1,1-Dichloroethene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
1,2,3-Trichloropropane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
1,2-Dibromoethane	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
1,2-Dichlorobenzene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
1,2-Dichloroethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
1,2-Dichloropropane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
1,4-Dichlorobenzene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
2-Butanone	U	5	ug/L	5	7/24/2024			SW846-8260D	=
2-Hexanone	UY2	5	ug/L	5	7/24/2024			SW846-8260D	=
4-Methyl-2-pentanone	UY2	5	ug/L	5	7/24/2024			SW846-8260D	=
Acetone	J	2.48	ug/L	5	7/24/2024			SW846-8260D	=,
Acrolein	U	5	ug/L	5	7/24/2024			SW846-8260D	UJ
Acrylonitrile	U	5	ug/L	5	7/24/2024			SW846-8260D	UJ
Benzene	U	1	ug/L	1	7/24/2024			SW846-8260D	=,
Bromochloromethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Bromodichloromethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Bromoform	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Bromomethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=,
Carbon disulfide	U	5	ug/L	5	7/24/2024			SW846-8260D	=,
Carbon tetrachloride	U	1	ug/L	1	7/24/2024			SW846-8260D	UJ
Chlorobenzene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=,
Chloroethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=,
Chloroform	J	0.37	ug/L	1	7/24/2024			SW846-8260D	=,
Chloromethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=,
cis-1,2-Dichloroethene	U	1	ug/L	1	7/24/2024			SW846-8260D	=,
cis-1,3-Dichloropropene	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Dibromochloromethane	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=,
Dibromomethane	U	1	ug/L	1	7/24/2024			SW846-8260D	=
Ethylbenzene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
Iodomethane	U	5	ug/L	5	7/24/2024			SW846-8260D	=,
Methylene chloride	U	5	ug/L	5	7/24/2024			SW846-8260D	=
Styrene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	UJ
Tetrachloroethene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=,
Toluene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
Total Xylene	UY2	3	ug/L	3	7/24/2024			SW846-8260D	=
trans-1,2-Dichloroethene	U	1	ug/L	1	7/24/2024			SW846-8260D	=,
trans-1,3-Dichloropropene	UY2	1	ug/L	1	7/24/2024			SW846-8260D	=
trans-1,4-Dichloro-2-butene	U	5	ug/L	5	7/24/2024			SW846-8260D	UJ
Trichloroethene	U	1	ug/L	1	7/24/2024			SW846-8260D	=

Trichlorofluoromethane	U	1 ug/L	1	7/24/2024	SW846-8260D	=
Vinyl acetate	U	5 ug/L	5	7/24/2024	SW846-8260D	=
Vinyl chloride	U	1 ug/L	1	7/24/2024	SW846-8260D	=

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: QC Period: 3rd Quarter 2024

AKGWA Well Tag #: N/A SAMPLE ID: TB4SG4-24 Sample Type: TB

ANGWA Well rug #.	JAIVIFEE ID. 184304-24			Sample Type					
Parameter	Qualifier	Result	Units	Reporting Limit	Date Collected	Counting Error (+/-)	TPU	Method	Validation
1,2-Dibromo-3-chloropropane	U	0.0195	ug/L	0.0195	7/25/2024			SW846-8011	=
1,1,1,2-Tetrachloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,1,1-Trichloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,1,2,2-Tetrachloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,1,2-Trichloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,1-Dichloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,1-Dichloroethene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,2,3-Trichloropropane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,2-Dibromoethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,2-Dichlorobenzene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,2-Dichloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,2-Dichloropropane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
1,4-Dichlorobenzene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
2-Butanone	U	5	ug/L	5	7/25/2024			SW846-8260D	=
2-Hexanone	U	5	ug/L	5	7/25/2024			SW846-8260D	=
4-Methyl-2-pentanone	U	5	ug/L	5	7/25/2024			SW846-8260D	=
Acetone	U	5	ug/L	5	7/25/2024			SW846-8260D	=
Acrolein	U	5	ug/L	5	7/25/2024			SW846-8260D	UJ
Acrylonitrile	U	5	ug/L	5	7/25/2024			SW846-8260D	UJ
Benzene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Bromochloromethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Bromodichloromethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Bromoform	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Bromomethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Carbon disulfide	U	5	ug/L	5	7/25/2024			SW846-8260D	=
Carbon tetrachloride	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Chlorobenzene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Chloroethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Chloroform	J	0.42	ug/L	1	7/25/2024			SW846-8260D	=
Chloromethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
cis-1,2-Dichloroethene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
cis-1,3-Dichloropropene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Dibromochloromethane	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Dibromomethane	U	1		1	7/25/2024			SW846-8260D	=
Ethylbenzene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Iodomethane	U	5	ug/L	5	7/25/2024			SW846-8260D	=
Methylene chloride	U	5	ug/L	5	7/25/2024			SW846-8260D	=
Styrene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Tetrachloroethene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Toluene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
Total Xylene	U	3	ug/L	3	7/25/2024			SW846-8260D	=
trans-1,2-Dichloroethene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
trans-1,3-Dichloropropene	U	1	ug/L	1	7/25/2024			SW846-8260D	=
trans-1,4-Dichloro-2-butene	U	5	ug/L	5	7/25/2024			SW846-8260D	UJ
Trichloroethene	U	1		1	7/25/2024			SW846-8260D	=
	•	_	~0/ -	-	., _5, _5, _			35 10 02000	_

Trichlorofluoromethane	U	1 ug/L	1	7/25/2024	SW846-8260D	=
Vinyl acetate	U	5 ug/L	5	7/25/2024	SW846-8260D	=
Vinyl chloride	U	1 ug/L	1	7/25/2024	SW846-8260D	=

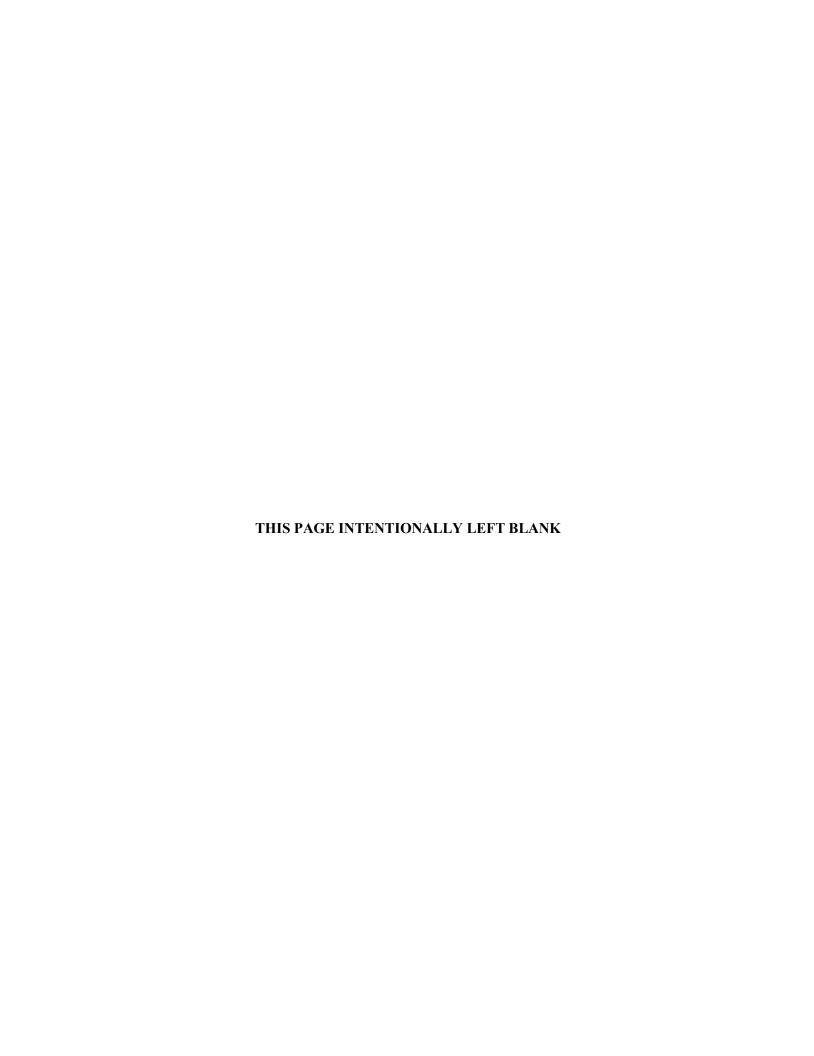
Qualifier	Code Definitions
*	Duplicate analysis not within control limits.
В	Analyte was detected in the associated blank.
Н	Analysis performed outside holding time requirement.
J	Estimated quantitation.
L	LCS and/or LCSD recovery outside of control limits.
L1	LCS/LCSD RPD outside acceptance criteria.
N	Sample spike (MS/MSD) recovery not within control limits
N1	MS/MSD or PS/PSD RPD outside acceptance criteria.
Р	Difference between results from two GC columns outside control limits.
S	Sample surrogate recovery outside acceptance criteria.
Т	Tracer recovery outside control limits of 30-110%.
U	Not detected.
W	Post-digestion spike recovery out of control limits.
W1	Post-digestion spike and post-digestion spike duplicate RPD out of control limits.
Х	Other specific flags and footnotes may be required to properly define the results.
Y1	MS/MSD recovery outside acceptance criteria.
Y2	MS/MSD RPD outside acceptance criteria.

RGA Type	RGA Type Code Definitions					
LRGA	Lower Regional Gravel Aquifer					
UCRS	Upper Continental Recharge System					
URGA	Upper Regional Gravel Aquifer					
NA	Not Applicable.					

Sample Type Code Definitions						
REG	Regular					
FR	Field Replicate (code used for Field Duplicate)					
RI	Equipment Rinsate Blank					
FB	Field Blank					
ТВ	Trip Blank					

Validatio	Validation Code Definitions							
=	Validated result, no additional qualifier necessary							
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.							
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.							
UJ	Analyte not detected above the reported detection limit, and the reported detection limit is approximated due to quality deficiency.							
Х	Not validated							

ATTACHMENT C1 GEL LABORATORIES CERTIFICATE OF ANALYSIS



2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW220SG4-24 Project: FRNP00511
Sample ID: 677449001 Client ID: FRNP005
Matrix: WG

Matrix: WG
Collect Date: 24-JUL-24
Pagging Date: 27-WF-24

Receive Date: 24-JUL-24
Collector: 25-JUL-24
Client

Parameter	Qualifier	Result Un	certainty	MDC	TPU	RL	Units	PF	DF Analys	t Date Time	Batch	Mtd.
Rad Alpha Spec Analys	sis											
AlphaSpec Ra226, Liq	quid "As Rece	ived"										
Radium-226	U	0.600	+/-0.639	0.808	+/-0.641	5.00	pCi/L		CM4	08/22/24 0837	2659829	1
Th-01-RC M, Th Isoto	pes, Liquid ".	As Received'	,									
Thorium-230	U	0.155	+/-0.849	1.71	+/-0.851	50.0	pCi/L		AG2	08/15/24 1233	2646982	2
Rad Gas Flow Proporti 905.0 Mod, Sr90, liqu		0										
Strontium-90	U	0.982	+/-2.40	4.25	+/-2.41	8.00	pCi/L		JE1	08/13/24 0657	2650332	3
9310,Alpha/Beta Activ	vity, liquid "A	s Received"										
Alpha	U	1.91	+/-3.20	5.83	+/-3.22	15.0	pCi/L		HH3	08/05/24 1333	2650243	4
Beta		17.6	+/-6.70	8.59	+/-7.31	50.0	pCi/L					
Rad Liquid Scintillation Analysis 906.0 Mod, Tritium Dist, Liquid "As Received"												
Tritium	U	58.2	+/-144	252	+/-144	300	pCi/L		HB2	08/21/24 1408	2649582	5
Tc-02-RC-MOD, Tc99	9, Liquid "As	Received"										
Technetium-99	U	2.79	+/-10.1	17.7	+/-10.1	25.0	pCi/L		GS3	08/13/24 1539	2647382	6

The following Analytical Methods were performed

Method	Description
1	Eichrom Industries, AN-1418
2	DOE EML HASL-300, Th-01-RC Modified
3	EPA 905.0 Modified/DOE RP501 Rev. 1 Modified
4	EPA 900.0/SW846 9310
5	EPA 906.0 Modified
6	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	AlphaSpec Ra226, Liquid "As Received"	2659829	94.8	(30%-110%)
Thorium-229 Tracer	Th-01-RC M, Th Isotopes, Liquid "As Received"	2646982	84.8	(30%-110%)
Strontium Carrier	905.0 Mod, Sr90, liquid "As Received"	2650332	96.3	(30%-110%)
Technetium-99m Tracer	Tc-02-RC-MOD, Tc99, Liquid "As Received"	2647382	98.8	(30%-110%)

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW220SG4-24 Project: FRNP00511 Sample ID: Client ID: FRNP005 677449001

Parameter Result Uncertainty Units PF DF Analyst Date Time Batch Mtd. Qualifier MDC **TPU** RL

Surrogate/Tracer Recovery Test Batch ID Recovery% Acceptable Limits

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Mtd.: Method DL: Detection Limit PF: Prep Factor Lc/LC: Critical Level **RL**: Reporting Limit

MDA: Minimum Detectable Activity TPU: Total Propagated Uncertainty

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Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: Sample ID: Matrix: MW221SG4-24 677449003 WG Collect Date: 24-JUL-24

Receive Date: 25-JUL-24 Collector: Client

Project: FRNP00511 Client ID: FRNP005

Parameter	Qualifier	Result Uncertain	ty MDC	TPU	RL	Units	PF	DF Analys	t Date Time	Batch	Mtd.
Rad Alpha Spec Analys	sis										
AlphaSpec Ra226, Lie	quid "As Rece	ived"									
Radium-226		1.07 +/-0.7	71 0.756	+/-0.775	5.00	pCi/L		CM4	08/22/24 0837	2659829	1
Th-01-RC M, Th Isoto	pes, Liquid ".	As Received"									
Thorium-230	U	-0.582 +/-0.69	94 2.14	+/-0.694	50.0	pCi/L		AG2	08/15/24 1233	2646982	2
Rad Gas Flow Proporti 905.0 Mod, Sr90, liqu		U									
Strontium-90	U	1.01 +/-1.	96 3.47	+/-1.97	8.00	pCi/L		JE1	08/13/24 0657	2650332	3
9310,Alpha/Beta Acti	vity, liquid "A	s Received"									
Alpha	U	5.40 +/-5.	84 9.40	+/-5.91	15.0	pCi/L		нн3	08/09/24 1220	2650243	4
Beta	U	7.08 +/-5.	38 8.26	+/-5.51	50.0	pCi/L					
Rad Liquid Scintillatio 906.0 Mod, Tritium D	•	s Received"									
Tritium	U	92.5 +/-14	44 247	+/-145	300	pCi/L		HB2	08/21/24 1445	2649582	5
Tc-02-RC-MOD, Tc9	9, Liquid "As	Received"									
Technetium-99	U	10.1 +/-10	0.7 17.9	+/-10.7	25.0	pCi/L		GS3	08/13/24 1556	2647382	6
The following Analytic		vere performed									
Method Desc	cription										

1	Eichrom Industries, AN-1418
2	DOE EML HASL-300, Th-01-RC Modified
3	EPA 905.0 Modified/DOE RP501 Rev. 1 Modified
4	EPA 900.0/SW846 9310
5	EPA 906.0 Modified
6	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	AlphaSpec Ra226, Liquid "As Received"	2659829	93.9	(30%-110%)
Thorium-229 Tracer	Th-01-RC M, Th Isotopes, Liquid "As Received"	2646982	83.8	(30%-110%)
Strontium Carrier	905.0 Mod, Sr90, liquid "As Received"	2650332	92	(30%-110%)
Technetium-99m Tracer	Tc-02-RC-MOD, Tc99, Liquid "As Received"	2647382	98.7	(30%-110%)

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW221SG4-24 Project: FRNP00511 Sample ID: Client ID: FRNP005 677449003

Parameter Result Uncertainty Units PF DF Analyst Date Time Batch Mtd. Qualifier MDC **TPU** RL

Surrogate/Tracer Recovery Test Batch ID Recovery% Acceptable Limits

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Mtd.: Method DL: Detection Limit PF: Prep Factor Lc/LC: Critical Level **RL**: Reporting Limit

MDA: Minimum Detectable Activity TPU: Total Propagated Uncertainty

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

LLC Address:

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: Sample ID: Matrix: MW393SG4-24 677449005 WG Collect Date: 24-JUL-24 Receive Date:

25-JUL-24 Collector: Client

Project: FRNP00511 Client ID: FRNP005

Parameter	Qualifier	Result Uncertainty	MDC	TPU	RL	Units	PF	DF Analys	st Date Time	Batch	Mtd.
Rad Alpha Spec Analys	sis										
AlphaSpec Ra226, Liq	uid "As Rece	ived"									
Radium-226	U	0.178 +/-0.403	0.635	+/-0.403	5.00	pCi/L		CM4	08/22/24 0837	2659829	1
Th-01-RC M, Th Isoto	pes, Liquid ".	As Received"									
Thorium-230	U	1.34 +/-1.11	1.40	+/-1.13	50.0	pCi/L		AG2	08/16/24 1041	2646982	2
Rad Gas Flow Proportion 905.0 Mod, Sr90, liquid		U									
Strontium-90	U	0.528 +/-3.17	5.77	+/-3.17	8.00	pCi/L		JE1	08/13/24 0657	2650332	3
9310,Alpha/Beta Activ	vity, liquid "A	s Received"									
Alpha	U	0.395 +/-4.29	9.11	+/-4.29	15.0	pCi/L		HH3	08/05/24 1333	2650243	4
Beta	U	-1.96 +/-4.72	9.57	+/-4.72	50.0	pCi/L					
Rad Liquid Scintillation 906.0 Mod, Tritium Di		s Received"									
Tritium	U	57.1 +/-140	245	+/-140	300	pCi/L		HB2	08/21/24 1522	2649582	5
Tc-02-RC-MOD, Tc99	, Liquid "As	Received"									
Technetium-99	U	-8.36 +/-9.64	18.0	+/-9.64	25.0	pCi/L		GS3	08/13/24 1612	2647382	6
The following Analytica	al Methods v	vere performed									
Method Desc	ription										

1	Eichrom Industries, AN-1418
2	DOE EML HASL-300, Th-01-RC Modified
3	EPA 905.0 Modified/DOE RP501 Rev. 1 Modified
4	EPA 900.0/SW846 9310
5	EPA 906.0 Modified
6	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	AlphaSpec Ra226, Liquid "As Received"	2659829	94.5	(30%-110%)
Thorium-229 Tracer	Th-01-RC M, Th Isotopes, Liquid "As Received"	2646982	82.9	(30%-110%)
Strontium Carrier	905.0 Mod, Sr90, liquid "As Received"	2650332	72.7	(30%-110%)
Technetium-99m Tracer	Tc-02-RC-MOD, Tc99, Liquid "As Received"	2647382	97.7	(30%-110%)

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Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW393SG4-24 Project: FRNP00511 Sample ID: Client ID: FRNP005 677449005

Parameter Result Uncertainty Units PF DF Analyst Date Time Batch Mtd. Qualifier MDC **TPU** RLBatch ID Recovery% Acceptable Limits

Surrogate/Tracer Recovery

Test

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Mtd.: Method DL: Detection Limit PF: Prep Factor Lc/LC: Critical Level **RL**: Reporting Limit

MDA: Minimum Detectable Activity TPU: Total Propagated Uncertainty

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Company: Four Rivers Nuclear Partnership,

LLC Address:

Collector:

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Project:

Client ID:

FRNP00511

FRNP005

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client

Client Sample ID: Sample ID: Matrix: MW394SG4-24 677449007 WG Collect Date: 24-JUL-24 Receive Date: 25-JUL-24

Parameter	Qualifier	Result Un	certainty	MDC	TPU	RL	Units	PF	DF Analys	t Date 1	Time	Batch I	Mtd.
Rad Alpha Spec Analy AlphaSpec Ra226, Lie		ived"											
Radium-226	U	0.448	+/-0.593	0.852	+/-0.594	5.00	pCi/L		CM4	08/22/24 0	0837	2659829	1
Th-01-RC M, Th Isoto	opes, Liquid ".	As Received'	"										
Thorium-230	U	0.856	+/-1.23	1.99	+/-1.24	50.0	pCi/L		AG2	08/16/24 1	041	2646982	2
Rad Gas Flow Proport 905.0 Mod, Sr90, liqu		_											
Strontium-90	U	1.62	+/-2.05	3.48	+/-2.06	8.00	pCi/L		JE1	08/13/24 0)657	2650332	3
9310,Alpha/Beta Acti	vity, liquid "A	s Received"											
Alpha	U	0.787	+/-3.42	7.44	+/-3.43	15.0	pCi/L		НН3	08/09/24 1	220	2650243	4
Beta	U	3.93	+/-4.38	7.25	+/-4.44	50.0	pCi/L						
Rad Liquid Scintillatio 906.0 Mod, Tritium D		s Received"											
Tritium	U	79.4	+/-144	249	+/-145	300	pCi/L		HB2	08/21/24 1	558	2649582	5
Tc-02-RC-MOD, Tc9	9, Liquid "As	Received"											
Technetium-99	U	6.82	+/-10.5	17.9	+/-10.5	25.0	pCi/L		GS3	08/13/24 1	629	2647382	6
The following Analytic	cal Methods v	vere perforn	ned										

Method	Description
1	Eichrom Industries, AN-1418
2	DOE EML HASL-300, Th-01-RC Modified
3	EPA 905.0 Modified/DOE RP501 Rev. 1 Modified
4	EPA 900.0/SW846 9310
5	EPA 906.0 Modified
6	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	AlphaSpec Ra226, Liquid "As Received"	2659829	92.5	(30%-110%)
Thorium-229 Tracer	Th-01-RC M, Th Isotopes, Liquid "As Received"	2646982	79.6	(30%-110%)
Strontium Carrier	905.0 Mod, Sr90, liquid "As Received"	2650332	81.3	(30%-110%)
Technetium-99m Tracer	Tc-02-RC-MOD, Tc99, Liquid "As Received"	2647382	96.7	(30%-110%)

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW394SG4-24 Project: FRNP00511 Sample ID: Client ID: FRNP005 677449007

Parameter Result Uncertainty Units PF DF Analyst Date Time Batch Mtd. Qualifier MDC **TPU** RLBatch ID Recovery% Acceptable Limits Surrogate/Tracer Recovery

Test

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Mtd.: Method DL: Detection Limit PF: Prep Factor Lc/LC: Critical Level **RL**: Reporting Limit

MDA: Minimum Detectable Activity TPU: Total Propagated Uncertainty

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

LLC Address:

Collector:

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

FRNP00511

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client

Client Sample ID: MW395SG4-24 Sample ID: 677449009 Matrix: WG Collect Date: 24-JUL-24 Receive Date: 25-JUL-24

Project: Client ID: FRNP005

Parameter	Qualifier	Result Unc	ertainty	MDC	TPU	RL	Units	PF	DF Analys	t Date T	ime	Batch I	Mtd
Rad Alpha Spec Anal	lysis												
AlphaSpec Ra226, I	Liquid "As Rece	ived"											
Radium-226	U	0.493	+/-0.553	0.738	+/-0.554	5.00	pCi/L		CM4	08/22/24 08	837	2659829	1
Th-01-RC M, Th Iso	otopes, Liquid "A	As Received"											
Thorium-230	U	0.181	+/-0.888	1.75	+/-0.891	50.0	pCi/L		AG2	08/16/24 10	041	2646982	2
Rad Gas Flow Propor		_											
905.0 Mod, Sr90, lie	•												_
Strontium-90	U	2.45	+/-3.59	6.16	+/-3.61	8.00	pCi/L		JE1	08/13/24 00	658	2650332	3
9310,Alpha/Beta Ac	tivity, liquid "A	s Received"											
Alpha	U	-2.48	+/-2.36	7.63	+/-2.36	15.0	pCi/L		НН3	08/05/24 13	333	2650243	4
Beta	U	5.15	+/-5.81	9.74	+/-5.87	50.0	pCi/L						
Rad Liquid Scintillati 906.0 Mod, Tritium	•	s Received"											
Tritium	U	78.0	+/-147	253	+/-147	300	pCi/L		HB2	08/21/24 10	635	2649582	5
Tc-02-RC-MOD, Tc	99, Liquid "As	Received"											
Technetium-99	U	3.05	+/-10.5	18.3	+/-10.5	25.0	pCi/L		GS3	08/13/24 10	645	2647382	6

The following Analytical Methods were performed

Method	Description
1	Eichrom Industries, AN-1418
2	DOE EML HASL-300, Th-01-RC Modified
3	EPA 905.0 Modified/DOE RP501 Rev. 1 Modified
4	EPA 900.0/SW846 9310
5	EPA 906.0 Modified
6	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	AlphaSpec Ra226, Liquid "As Received"	2659829	97.5	(30%-110%)
Thorium-229 Tracer	Th-01-RC M, Th Isotopes, Liquid "As Received"	2646982	84.6	(30%-110%)
Strontium Carrier	905.0 Mod, Sr90, liquid "As Received"	2650332	72.7	(30%-110%)
Technetium-99m Tracer	Tc-02-RC-MOD, Tc99, Liquid "As Received"	2647382	95.8	(30%-110%)

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5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW395SG4-24 Project: FRNP00511 Sample ID: 677449009 Client ID: FRNP005

Parameter Qualifier Result Uncertainty MDC TPU RL Units PF DF Analyst Date Time Batch Mtd.

Surrogate/Tracer Recovery Test Batch ID Recovery% Acceptable Limits

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

Lc/LC: Critical Level

Mtd.: Method

PF: Prep Factor

RL: Reporting Limit

MDA: Minimum Detectable Activity TPU: Total Propagated Uncertainty

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW396SG4-24
Sample ID: 677449011
Matrix: WG
Collect Date: 24-JUL-24
Receive Date: 25-JUL-24

Collector: Client

e ID:	MW396SG4-24	Project:	FRNP00511
	677449011	Client ID:	FRNP005
	WG		

Parameter	Qualifier	Result Unc	ertainty	MDC	TPU	RL	Units	PF	DF Analyst	t Date Time	Batch	Mtd.
Rad Alpha Spec Analysis												
AlphaSpec Ra226, Liqui	id "As Rece	ived"										
Radium-226		0.994	+/-0.739	0.769	+/-0.743	5.00	pCi/L		CM4	08/22/24 0837	2659829	1
Th-01-RC M, Th Isotope	es, Liquid "A	As Received"										
Thorium-230	U	0.146	+/-0.700	1.39	+/-0.702	50.0	pCi/L		AG2	08/16/24 1041	2646982	2
Rad Gas Flow Proportion 905.0 Mod, Sr90, liquid		O										
Strontium-90	U	0.415	+/-2.12	3.87	+/-2.12	8.00	pCi/L		JE1	08/13/24 0658	2650332	3
9310,Alpha/Beta Activit	y, liquid "A	s Received"										
Alpha	U	3.42	+/-5.05	8.84	+/-5.09	15.0	pCi/L		НН3	08/05/24 1333	2650243	4
Beta	U	1.29	+/-5.43	9.93	+/-5.44	50.0	pCi/L					
Rad Liquid Scintillation A 906.0 Mod, Tritium Dist	-	s Received"										
Tritium	U	83.6	+/-148	255	+/-149	300	pCi/L		HB2	08/21/24 1712	2649582	5
Tc-02-RC-MOD, Tc99,	Liquid "As .	Received"										
Technetium-99	U	-8.86	+/-9.70	18.2	+/-9.70	25.0	pCi/L		GS3	08/13/24 1702	2647382	6
The following Analytical	N f . 41 1		. 1									

The following Analytical Methods were performed

Method	Description
1	Eichrom Industries, AN-1418
2	DOE EML HASL-300, Th-01-RC Modified
3	EPA 905.0 Modified/DOE RP501 Rev. 1 Modified
4	EPA 900.0/SW846 9310
5	EPA 906.0 Modified
6	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	AlphaSpec Ra226, Liquid "As Received"	2659829	94.8	(30%-110%)
Thorium-229 Tracer	Th-01-RC M, Th Isotopes, Liquid "As Received"	2646982	82	(30%-110%)
Strontium Carrier	905.0 Mod, Sr90, liquid "As Received"	2650332	92	(30%-110%)
Technetium-99m Tracer	Tc-02-RC-MOD, Tc99, Liquid "As Received"	2647382	97	(30%-110%)

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Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW396SG4-24 Project: FRNP00511 Sample ID: Client ID: FRNP005 677449011

Parameter Result Uncertainty Units PF DF Analyst Date Time Batch Mtd. Qualifier MDC **TPU** RLBatch ID Recovery% Acceptable Limits Surrogate/Tracer Recovery

Test

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Mtd.: Method DL: Detection Limit PF: Prep Factor Lc/LC: Critical Level **RL**: Reporting Limit

MDA: Minimum Detectable Activity TPU: Total Propagated Uncertainty

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Certificate of Analysis

Project:

Client ID:

Report Date: October 31, 2024

FRNP00511

FRNP005

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW220SG4-24

Sample ID: 677449001

Matrix: WG

Collect Date: 24-JUL-24 08:21
Receive Date: 25-JUL-24
Collector: Client

Solit No A Compounds Liquid "As Received" 1	Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
1	504.1/8011 Analy	sis of EDB/DBCP											
1	8011, VOA Comp	ounds Liquid "As	Received"										
9060A, Total Organic Carbon "As Received" 7040				0.00848	0.0189	ug/L	0.943	1	LOF	08/03/24	1535	2647154	2
Total Organic Carbon Average J 0.758 0.330 2.00 mg/L 1 KB3 0.818/24 2.08 2.67949 3.7 1.00 1.0	Carbon Analysis	-											
Total Organic Carbon Average J 0.758 0.330 2.00 mg/L 1 KB3 0.818/24 2.08 2.67949 3.7 1.00 1.0	9060A, Total Orga	anic Carbon "As R	eceived"										
9012B, Total Cyanide "As Received" Cyanide, Total Cyanide, Total U 0.200 0.00167 0.200 mg/L 1.00 1.0 AXH3 072672 1200 264663 4 4 4 4 4 4 4 4 4				0.330	2.00	mg/L		1	KB3	08/18/24	2308	2657949	3
Cyanide, Total U 0.200 0.00167 0.200 mg/L 1.00 1.0	Flow Injection An	alysis											
Cyanide, Total U 0.200 0.00167 0.200 mg/L 1.00 1.0	9012B, Total Cyar	nide "As Received	"										
Pozo	•			0.00167	0.200	mg/L	1.00	1	AXH3	07/26/24	1200	2646663	4
Pozo	Halogen Analysis												
Total Organic Halogens J 7.16 3.33 10.0 ug/L 15 15 15 15 15 15 15 15 15 15 15 15 15	9020B, TOX (Org	ganic Halogen) "As	Received"										
300.0, Iodide in Liquid "As Received" 0.500 0.167 0.500 mg/L 0.7 TXT 08/12/24 1229 2654903 6 5 5 5 5 5 5 5 5 5				3.33	10.0	ug/L		1	JS13	08/19/24	1815	2658912	5
300.0, Iodide in Liquid "As Received" 0.500 0.167 0.500 mg/L 0.7 TXT 08/12/24 1229 2654903 6 5 5 5 5 5 5 5 5 5	Ion Chromatograp	ohy											
Didide		· ·	1"										
Chloride		-		0.167	0.500	mg/L		1	TXT1	08/12/24	1229	2654903	6
Nitrate-N J 1.06 0.0660 10.0 mg/L 2 Sulfate 21.6 0.266 0.800 mg/L 2 Sulfate 21.6 0.0670 0.200 mg/L 1 CH6 07/25/24 1356 2646386 8 Fluoride J 0.242 0.0330 4.00 mg/L 1 Sulfate 2 Sulfate 2 Sulfate 3 Sulfa	SW846 9056A Ar	nions (5) "As Recei	ived"										
Sulfate 21.6 0.266 0.800 mg/L 2 2 Bromide W 0.261 0.0670 0.200 mg/L 1 CH6 07/25/24 1356 2646386 8 Fluoride J 0.242 0.0330 4.00 mg/L 1 CH6 07/25/24 1356 2646386 8 Mercury Analysis-CVAA 7470, Mercury Liquid "As Received" Mercury U 0.000200 0.000670 0.00200 mg/L 1.00 1 JP2 07/29/24 1059 2646459 9 Metals Analysis-ICP-MS 8 8 8 0.000500 mg/L 1.00 1 JP2 07/29/24 1059 2646459 9 Metals Analysis-ICP-MS 8 8 9 0.00000 0.00000 mg/L 1.00 1 PRB 08/10/24 2258 2647183 10 Rhodium U 0.00500 0.00100 0.00500 mg/L </td <td></td> <td>J</td> <td></td> <td>0.134</td> <td>250</td> <td>mg/L</td> <td></td> <td>2</td> <td>CH6</td> <td>07/25/24</td> <td>1904</td> <td>2646386</td> <td>7</td>		J		0.134	250	mg/L		2	CH6	07/25/24	1904	2646386	7
Bromide	Nitrate-N	J	1.06	0.0660	10.0	mg/L		2					
Fluoride	Sulfate		21.6			mg/L		2					
Mercury Analysis-CVAA 7470, Mercury Liquid "As Received" Mercury U 0.000200 0.000200 mg/L 1.00 1 JP2 07/29/24 1059 2646459 9 Metals Analysis-ICP-MS 6020, Metals (15+) "As Received" Rhodium U 0.00500 0.00160 0.00500 mg/L 1.00 1 PRB 08/10/24 2258 2647183 10 Tantalum U 0.00500 0.00160 0.00500 mg/L 1.00 1 PRB 08/10/24 2258 2647183 10 Aluminum U 0.00500 0.0193 0.0500 mg/L 1.00 1 PRB 08/10/24 2000 2647183 11 Antimony U 0.00300 0.00100 0.00300 mg/L 1.00 1 FRB 08/10/24 2000 2647183 11 Arsenic U 0.00300 0.00100 0.00300 mg/L 1.00 1 FRB		W				_		1	CH6	07/25/24	1356	2646386	8
7470, Mercury Liquid "As Received" Mercury U 0.000200 0.0000670 0.000200 mg/L 1.00 1 JP2 07/29/24 1059 2646459 9 Metals Analysis-ICP-MS 6020, Metals (15+) "As Received" Rhodium U 0.00500 0.00160 0.00500 mg/L 1.00 1 PRB 08/10/24 2258 2647183 10 Tantalum U 0.00500 0.00160 0.00500 mg/L 1.00 1 PRB 08/10/24 2258 2647183 10 Aluminum U 0.00500 0.0193 0.0500 mg/L 1.00 1 PRB 08/10/24 2000 2647183 11 Antimony U 0.00300 0.00100 0.00300 mg/L 1.00 1 PRB 08/10/24 2000 2647183 11 Arsenic U 0.00500 0.00200 0.00500 mg/L 1.00 1 Barium		•	0.242	0.0330	4.00	mg/L		1					
Mercury U 0.000200 0.0000670 0.000200 mg/L 1.00 1 JP2 07/29/24 1059 2646459 9 Metals Analysis-ICP-MS 6020, Metals (15+) "As Received" Rhodium U 0.00500 0.00160 0.00500 mg/L 1.00 1 PRB 08/10/24 2258 2647183 10 Tantalum U 0.00500 0.00100 0.00500 mg/L 1.00 1 PRB 08/10/24 2258 2647183 10 Aluminum U 0.0500 0.0193 0.0500 mg/L 1.00 1 PRB 08/10/24 200 2647183 11 Antimony U 0.00300 0.00100 0.00300 mg/L 1.00 1 Incompany Incompany Incompany 0.000500 0.00000 mg/L 1.00 1 Incompany Incompany Incompany Incompany Incompany Incompany Incompany Incompany Incompany Incompany <td>Mercury Analysis</td> <td>-CVAA</td> <td></td>	Mercury Analysis	-CVAA											
Metals Analysis-ICP-MS 6020, Metals (15+) "As Received" Rhodium U 0.00500 0.00160 0.00500 mg/L 1.00 1 PRB 08/10/24 2258 2647183 10 Tantalum U 0.00500 0.00100 0.00500 mg/L 1.00 1 PRB 08/10/24 2258 2647183 10 Aluminum U 0.0500 0.0193 0.0500 mg/L 1.00 1 PRB 08/10/24 2000 2647183 11 Antimony U 0.00300 0.00100 0.00300 mg/L 1.00 1 PRB 08/10/24 2000 2647183 11 Arsenic U 0.00300 0.00100 0.00300 mg/L 1.00 1 Barium 0.204 0.000670 0.00400 mg/L 1.00 1 Beryllium U 0.000500 0.000200 0.00500 mg/L 1.00 1 Boron J 0.00712 0.00520 0.0150 mg/L 1.00 1	7470, Mercury Lie	quid "As Received"	"										
6020, Metals (15+) "As Received" U 0.00500 0.00160 0.00500 mg/L 1.00 1 PRB 08/10/24 2258 2647183 10 Tantalum U 0.00500 0.00100 0.00500 mg/L 1.00 1 PRB 08/10/24 2258 2647183 10 Aluminum U 0.0500 0.0193 0.0500 mg/L 1.00 1 PRB 08/10/24 2000 2647183 11 Antimony U 0.00300 0.00100 0.00300 mg/L 1.00 1 PRB 08/10/24 2000 2647183 11 Arsenic U 0.00300 0.00100 0.00300 mg/L 1.00 1 Barium 0.204 0.000670 0.00400 mg/L 1.00 1 Beryllium U 0.000500 0.000200 0.000500 mg/L 1.00 1 Boron J 0.00712 0.00520 0.0150 mg/L 1.00 1	•		0.000200	0.0000670	0.000200	mg/L	1.00	1	JP2	07/29/24	1059	2646459	9
Rhodium U 0.00500 0.00160 0.00500 mg/L 1.00 1 PRB 08/10/24 2258 2647183 10 Tantalum U 0.00500 0.00100 0.00500 mg/L 1.00 1 PRB 08/10/24 2258 2647183 1 Aluminum U 0.0500 0.0193 0.0500 mg/L 1.00 1 PRB 08/10/24 2000 2647183 11 Antimony U 0.00300 0.00100 0.00300 mg/L 1.00 1 PRB 08/10/24 2000 2647183 11 Arsenic U 0.00300 0.00200 0.00500 mg/L 1.00 1 FRB 08/10/24 2000 2647183 11 Barium 0.00500 0.00200 0.00500 mg/L 1.00 1 FRB 08/10/24 2000 2647183 11 Beryllium U 0.000500 0.000200 0.000500 mg/L 1.00 <td>Metals Analysis-I</td> <td>CP-MS</td> <td></td>	Metals Analysis-I	CP-MS											
Tantalum U 0.00500 0.00100 0.00500 mg/L 1.00 1 Aluminum U 0.0500 0.0193 0.0500 mg/L 1.00 1 PRB 08/10/24 2000 2647183 11 Antimony U 0.00300 0.00100 0.00300 mg/L 1.00 1 Arsenic U 0.00500 0.00200 0.00500 mg/L 1.00 1 Barium 0.204 0.000670 0.00400 mg/L 1.00 1 Beryllium U 0.000500 0.000200 0.000500 mg/L 1.00 1 Boron J 0.00712 0.00520 0.0150 mg/L 1.00 1	6020, Metals (15+) "As Received"											
Aluminum U 0.0500 0.0193 0.0500 mg/L 1.00 1 PRB 08/10/24 2000 2647183 11 Antimony U 0.00300 0.00100 0.00300 mg/L 1.00 1 Arsenic U 0.00500 0.00200 0.00500 mg/L 1.00 1 Barium 0.204 0.000670 0.00400 mg/L 1.00 1 Beryllium U 0.000500 0.000200 0.000500 mg/L 1.00 1 Boron J 0.00712 0.00520 0.0150 mg/L 1.00 1	Rhodium	U	0.00500	0.00160	0.00500	mg/L	1.00	1	PRB	08/10/24	2258	2647183	10
Antimony U 0.00300 0.00100 0.00300 mg/L 1.00 1 Arsenic U 0.00500 0.00200 0.00500 mg/L 1.00 1 Barium 0.204 0.000670 0.00400 mg/L 1.00 1 Beryllium U 0.000500 0.000200 0.000500 mg/L 1.00 1 Boron J 0.00712 0.00520 0.0150 mg/L 1.00 1	Tantalum	U	0.00500	0.00100	0.00500	mg/L	1.00	1					
Arsenic U 0.00500 0.00200 0.00500 mg/L 1.00 1 Barium 0.204 0.000670 0.00400 mg/L 1.00 1 Beryllium U 0.000500 0.000200 0.000500 mg/L 1.00 1 Boron J 0.00712 0.00520 0.0150 mg/L 1.00 1	Aluminum	U	0.0500	0.0193	0.0500	mg/L	1.00	1	PRB	08/10/24	2000	2647183	11
Barium 0.204 0.000670 0.00400 mg/L 1.00 1 Beryllium U 0.000500 0.000200 0.000500 mg/L 1.00 1 Boron J 0.00712 0.00520 0.0150 mg/L 1.00 1	Antimony	U	0.00300	0.00100	0.00300	mg/L	1.00	1					
Beryllium U 0.000500 0.000200 0.000500 mg/L 1.00 1 Boron J 0.00712 0.00520 0.0150 mg/L 1.00 1	Arsenic	U	0.00500	0.00200	0.00500	mg/L	1.00	1					
Boron J 0.00712 0.00520 0.0150 mg/L 1.00 1	Barium		0.204	0.000670	0.00400	mg/L	1.00	1					
ę	Beryllium	U	0.000500	0.000200	0.000500	mg/L	1.00	1					
Cadmium U 0.00100 0.000300 0.00100 mg/L 1.00 1	Boron	J	0.00712	0.00520	0.0150	mg/L	1.00	1					
	Cadmium	U	0.00100	0.000300	0.00100	mg/L	1.00	1					

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW220SG4-24 Project: FRNP00511 Sample ID: 677449001 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Metals Analysis-ICP-MS												
6020, Metals (15+) "As	6020, Metals (15+) "As Received"											
Calcium		25.5	0.0800	0.200	mg/L	1.00	1					
Chromium	J	0.00902	0.00300	0.0100	mg/L	1.00	1					
Cobalt	U	0.00100	0.000300	0.00100	mg/L	1.00	1					
Copper	J	0.00194	0.000300	0.00200	mg/L	1.00	1					
Iron	J	0.0385	0.0330	0.100	mg/L	1.00	1					
Lead	U	0.00200	0.000500	0.00200	mg/L	1.00	1					
Magnesium		10.4	0.0100	0.0300	mg/L	1.00	1					
Manganese	J	0.00279	0.00100	0.00500	mg/L	1.00	1					
Molybdenum		0.00131	0.000200	0.00100	mg/L	1.00	1					
Nickel		0.00649	0.000600	0.00200	mg/L	1.00	1					
Potassium		11.0	0.0800	0.300	mg/L	1.00	1					
Selenium	U	0.00500	0.00150	0.00500	mg/L	1.00	1					
Silver	U	0.00100	0.000300	0.00100	mg/L	1.00	1					
Sodium		46.0	0.0800	0.250	mg/L	1.00	1					
Thallium	U	0.00200	0.000600	0.00200	mg/L	1.00	1					
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00	1					
Vanadium	U	0.0200	0.00330	0.0200	mg/L	1.00	1					
Zinc	J	0.00543	0.00330	0.0200	mg/L	1.00	1					
Solids Analysis												
160.1, Dissolved Solids	"As Receive	ed"										
Total Dissolved Solids		246	2.38	10.0	mg/L			KLP1	07/30/24	1447	2648069	12
Spectrometric Analysis												
410.4, Chem. Oxygen I	Demand "As l	Received"										
COD	J	13.3	8.95	20.0	mg/L		1	HH2	07/31/24	1733	2647741	13
Volatile Organics												
8260D, Volatiles- full s	uite "As Rec	eived"										
1,1,1,2-Tetrachloroethane	UY2	1.00	0.333	1.00	ug/L		1	JB6	07/26/24	1259	2646976	14
1,1,1-Trichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1,2,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1,2-Trichloroethane	UY2	1.00	0.333	1.00	ug/L		1					
1,1-Dichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1					
1,2,3-Trichloropropane	U	1.00	0.333	1.00	ug/L		1					
1,2-Dibromoethane	UY2	1.00	0.333	1.00	ug/L		1					

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Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW220SG4-24 Project: FRNP00511 Sample ID: 677449001 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
Volatile Organics									
8260D, Volatiles- full s	suite "As Rec	eived"							
1,2-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloroethane	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloropropane	U	1.00	0.333	1.00	ug/L		1		
1,4-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
2-Butanone	U	5.00	1.67	5.00	ug/L		1		
2-Hexanone	UY2	5.00	1.67	5.00	ug/L		1		
4-Methyl-2-pentanone	UY2	5.00	1.67	5.00	ug/L		1		
Acetone	U	5.00	1.74	5.00	ug/L		1		
Acrolein	U	5.00	1.67	5.00	ug/L		1		
Acrylonitrile	U	5.00	1.67	5.00	ug/L		1		
Benzene	U	1.00	0.333	1.00	ug/L		1		
Bromochloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromodichloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromoform	U	1.00	0.333	1.00	ug/L		1		
Bromomethane	U	1.00	0.337	1.00	ug/L		1		
Carbon disulfide	U	5.00	1.67	5.00	ug/L		1		
Carbon tetrachloride	U	1.00	0.333	1.00	ug/L		1		
Chlorobenzene	UY2	1.00	0.333	1.00	ug/L		1		
Chloroethane	U	1.00	0.333	1.00	ug/L		1		
Chloroform	U	1.00	0.333	1.00	ug/L		1		
Chloromethane	U	1.00	0.333	1.00	ug/L		1		
Dibromochloromethane	UY2	1.00	0.333	1.00	ug/L		1		
Dibromomethane	U	1.00	0.333	1.00	ug/L		1		
Ethylbenzene	UY2	1.00	0.333	1.00	ug/L		1		
Iodomethane	U	5.00	1.67	5.00	ug/L		1		
Methylene chloride	U	5.00	0.500	5.00	ug/L		1		
Styrene	UY2	1.00	0.333	1.00	ug/L		1		
Tetrachloroethylene	UY2	1.00	0.333	1.00	ug/L		1		
Toluene	UY2	1.00	0.333	1.00	ug/L		1		
Trichloroethylene	U	1.00	0.333	1.00	ug/L		1		
Trichlorofluoromethane	U	1.00	0.333	1.00	ug/L		1		
Vinyl acetate	U	5.00	1.67	5.00	ug/L		1		
Vinyl chloride	U	1.00	0.333	1.00	ug/L		1		
Xylenes (total)	UY2	3.00	1.00	3.00	ug/L		1		
cis-1,2-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1		
cis-1,3-Dichloropropylene	U	1.00	0.333	1.00	ug/L		1		

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Report Date: October 31, 2024

DF Analyst Date Time Batch Method

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Qualifier

Parameter

Notes:

Volatile Organics

Project: C-746-S&T Landfill Quarterly(SG24-04)

Result

Client Sample ID: MW220SG4-24 Project: FRNP00511 Sample ID: 677449001 Client ID: FRNP005

DL

RL

Units

PF

Volatile Organics								
8260D, Volatiles- full st	uite "As Recei	ved"						
trans-1,2-Dichloroethylene	U	1.00	0.333	1.00	ug/I	_ 1		
trans-1,3-Dichloropropylene	UY2	1.00	0.333	1.00	ug/I	1		
trans-1,4-Dichloro-2-butene	U	5.00	1.67	5.00	ug/I	_ 1		
The following Prep Met	hods were per	formed:						
Method	Description			Analyst	Date	Tim	e Prep Batc	h
SW846 7470A Prep	EPA 7470A M	ercury Prep Liquid		JM13	07/26/2	24 1100	2646458	
SW846 8011 PREP	8011 Prep			LOF	08/03/2	24 1306	2647153	
SW846 3005A	ICP-MS 3005A	PREP		BB2	07/31/2	24 1510	2647182	
SW846 9010C Distillation	SW846 9010C	Prep		ES2	07/26/2	24 1134	2646662	
The following Analytic	al Methods we	ere performed:						
Method	Description					Analyst Co	mments	
1	SW846 8011							
2	SW846 8011							
3	SW846 9060A							
4	SW846 9012B							
5	SW846 9020B							
6	EPA 300.0							
7	SW846 9056A							
8	SW846 9056A							
9	SW846 7470A							
10	SW846 3005A/	6020B						
11	SW846 3005A/	6020B						
12	EPA 160.1							
13	EPA 410.4							
14	SW846 8260D							
Surrogate/Tracer Recov	ery Test				Result	Nominal	Recovery%	Acceptable Limits
1-Chloro-2-fluorobenzene	8011, VC	A Compounds Liquid "As Receiv	/ed"		6.20 ug/L	6.73	92	(56%-149%)
Bromofluorobenzene		olatiles- full suite "As Received"			49.9 ug/L	50.0	100	(74%-123%)
1,2-Dichloroethane-d4	8260D, V	olatiles- full suite "As Received"			49.2 ug/L	50.0	98	(76%-127%)
Toluene-d8	8260D, V	olatiles- full suite "As Received"			50.4 ug/L	50.0	101	(77%-121%)
					-			

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW220SG4-24 Project: FRNP00511 Sample ID: 677449001 Client ID: FRNP005

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW220SG4-24 Sample ID: 677449002

Matrix: WG

Collect Date: 24-JUL-24 08:21
Receive Date: 25-JUL-24
Collector: Client

Project: FRNP00511 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Time Batch	Method
Metals Analysis-ICF	P-MS									
6020, Dissolved Met	tals (3 Elements)	"As Received"								
Barium		0.216	0.000670	0.00400	mg/L	1.00	1	PRB 08/10/24	2004 2647183	1
Chromium	J	0.00844	0.00300	0.0100	mg/L	1.00	1			
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00	1			
The following Prep	Methods were pe	erformed:								
Method	Description	1		Analyst	Date	7	Гітє	Prep Batch	ı	
EPA 160	Laboratory Fil	ltration		SD	07/26/24	1	1322	2646414		
SW846 3005A	ICP-MS 3005.	A PREP		BB2	07/31/24	1	1510	2647182		
The following Anal	ytical Methods w	vere performed:								
Method	Description				A	Analyst	Cor	nments		
1	SW846 3005A	/6020B								

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: October 31, 2024

FRNP00511

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW221SG4-24

Sample ID: 677449003

Matrix: WG

Collect Date: 24-JUL-24 07:35
Receive Date: 25-JUL-24
Collector: Client

57/449003	Client ID:	FRNP005
WG		
24-JUL-24 07:35		

Project:

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	e Batch	Method
504.1/8011 Analysis of	EDB/DBCP											
8011, VOA Compound	ls Liquid "As	Received"										
1,2-Dibromo-3-chloropropan	ie U	0.0187	0.00841	0.0187	ug/L	0.934	1	LOF	08/03/24	1606	2647154	1
Carbon Analysis												
9060A, Total Organic O	Carbon "As R	eceived"										
Total Organic Carbon Averag	ge J	0.652	0.330	2.00	mg/L		1	KB3	08/19/24	0041	2657949	3
Flow Injection Analysis	S											
9012B, Total Cyanide '	'As Received	"										
Cyanide, Total	U	0.200	0.00167	0.200	mg/L	1.00	1	AXH3	07/26/24	1201	2646663	4
Halogen Analysis												
9020B, TOX (Organic	Halogen) "As	Received"										
Total Organic Halogens	J	3.64	3.33	10.0	ug/L		1	JS13	08/19/24	1848	2658912	5
Ion Chromatography												
300.0, Iodide in Liquid	"As Received	d"										
Iodide	U	0.500	0.167	0.500	mg/L		1	TXT1	08/12/24	1242	2654903	6
SW846 9056A Anions	(5) "As Recei	ived"										
Bromide	W	0.623	0.0670	0.200	mg/L		1	CH6	07/25/24	1426	2646386	7
Fluoride	J	0.190	0.0330	4.00	mg/L		1					
Sulfate		16.1	0.133	0.400	mg/L		1					
Chloride	J	35.0	0.268	250	mg/L		4	CH6	07/25/24	1935	2646386	8
Nitrate-N	J	0.931	0.132	10.0	mg/L		4					
Mercury Analysis-CVA	AA											
7470, Mercury Liquid '	'As Received	"										
Mercury	U	0.000200	0.0000670	0.000200	mg/L	1.00	1	JP2	07/29/24	1100	2646459	9
Metals Analysis-ICP-M	1S											
6020, Metals (15+) "As	Received"											
Aluminum	U	0.0500	0.0193	0.0500	mg/L	1.00	1	PRB	08/10/24	2007	2647183	10
Antimony	U	0.00300	0.00100	0.00300	mg/L	1.00	1					
Arsenic	U	0.00500	0.00200	0.00500	mg/L	1.00	1					
Barium		0.213	0.000670	0.00400	mg/L	1.00	1					
Beryllium	U	0.000500	0.000200	0.000500	mg/L	1.00	1					
Boron		0.0242	0.00520	0.0150	mg/L	1.00	1					
Cadmium	U	0.00100	0.000300	0.00100	mg/L	1.00						
Calcium		21.3	0.0800	0.200	mg/L	1.00						
Chromium	J	0.00721	0.00300	0.0100	mg/L	1.00	1					

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW221SG4-24 Project: FRNP00511 Sample ID: 677449003 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	e Batch	Method
Metals Analysis-ICP-M	IS											
6020, Metals (15+) "As	Received"											
Cobalt		0.00112	0.000300	0.00100	mg/L	1.00	1					
Copper		0.00329	0.000300	0.00200	mg/L	1.00	1					
Iron	U	0.100	0.0330	0.100	mg/L	1.00	1					
Lead	U	0.00200	0.000500	0.00200	mg/L	1.00	1					
Magnesium		9.39	0.0100	0.0300	mg/L	1.00	1					
Manganese		0.00541	0.00100	0.00500	mg/L	1.00	1					
Molybdenum		0.00654	0.000200	0.00100	mg/L	1.00						
Nickel		0.120	0.000600	0.00200	mg/L	1.00						
Potassium		2.32	0.0800	0.300	mg/L	1.00						
Selenium	U	0.00500	0.00150	0.00500	mg/L	1.00						
Silver	U	0.00100	0.000300	0.00100	mg/L	1.00						
Sodium		45.3	0.0800	0.250	mg/L	1.00						
Thallium	U	0.00200	0.000600	0.00200	mg/L	1.00						
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00						
Vanadium	U	0.0200	0.00330	0.0200	mg/L	1.00						
Zinc	J	0.0104	0.00330	0.0200	mg/L	1.00						
Rhodium	U	0.00500	0.00160	0.00500	mg/L	1.00		PRB	08/10/24	2300	2647183	11
Tantalum	U	0.00500	0.00100	0.00500	mg/L	1.00	1					
Solids Analysis												
160.1, Dissolved Solids	"As Receive	ed"										
Total Dissolved Solids		210	2.38	10.0	mg/L			KLP1	07/30/24	1447	2648069	12
Spectrometric Analysis												
410.4, Chem. Oxygen D	Demand "As l	Received"										
COD	U	20.0	8.95	20.0	mg/L		1	HH2	07/31/24	1733	2647741	13
Volatile Organics												
8260D, Volatiles- full s	uite "As Rec	eived"										
1,1,1,2-Tetrachloroethane	UY2	1.00	0.333	1.00	ug/L		1	JB6	07/26/24	1324	2646976	14
1,1,1-Trichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1,2,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1,2-Trichloroethane	UY2	1.00	0.333	1.00	ug/L		1					
1,1-Dichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1					
1,2,3-Trichloropropane	U	1.00	0.333	1.00	ug/L		1					
1,2-Dibromoethane	UY2	1.00	0.333	1.00	ug/L		1					

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW221SG4-24 Project: FRNP00511 Sample ID: 677449003 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
Volatile Organics									
8260D, Volatiles- full s	suite "As Rec	eived"							
1,2-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloroethane	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloropropane	U	1.00	0.333	1.00	ug/L		1		
1,4-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
2-Butanone	U	5.00	1.67	5.00	ug/L		1		
2-Hexanone	UY2	5.00	1.67	5.00	ug/L		1		
4-Methyl-2-pentanone	UY2	5.00	1.67	5.00	ug/L		1		
Acetone	J	2.45	1.74	5.00	ug/L		1		
Acrolein	U	5.00	1.67	5.00	ug/L		1		
Acrylonitrile	U	5.00	1.67	5.00	ug/L		1		
Benzene	U	1.00	0.333	1.00	ug/L		1		
Bromochloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromodichloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromoform	U	1.00	0.333	1.00	ug/L		1		
Bromomethane	U	1.00	0.337	1.00	ug/L		1		
Carbon disulfide	U	5.00	1.67	5.00	ug/L		1		
Carbon tetrachloride	U	1.00	0.333	1.00	ug/L		1		
Chlorobenzene	UY2	1.00	0.333	1.00	ug/L		1		
Chloroethane	U	1.00	0.333	1.00	ug/L		1		
Chloroform	U	1.00	0.333	1.00	ug/L		1		
Chloromethane	U	1.00	0.333	1.00	ug/L		1		
Dibromochloromethane	UY2	1.00	0.333	1.00	ug/L		1		
Dibromomethane	U	1.00	0.333	1.00	ug/L		1		
Ethylbenzene	UY2	1.00	0.333	1.00	ug/L		1		
Iodomethane	U	5.00	1.67	5.00	ug/L		1		
Methylene chloride	U	5.00	0.500	5.00	ug/L		1		
Styrene	UY2	1.00	0.333	1.00	ug/L		1		
Tetrachloroethylene	UY2	1.00	0.333	1.00	ug/L		1		
Toluene	UY2	1.00	0.333	1.00	ug/L		1		
Trichloroethylene	J	0.350	0.333	1.00	ug/L		1		
Trichlorofluoromethane	U	1.00	0.333	1.00	ug/L		1		
Vinyl acetate	U	5.00	1.67	5.00	ug/L		1		
Vinyl chloride	U	1.00	0.333	1.00	ug/L		1		
Xylenes (total)	UY2	3.00	1.00	3.00	ug/L		1		
cis-1,2-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1		
cis-1,3-Dichloropropylene	U	1.00	0.333	1.00	ug/L		1		

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Certificate of Analysis

Report Date: October 31, 2024

DF Analyst Date Time Batch Method

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Qualifier

Project: C-746-S&T Landfill Quarterly(SG24-04)

Result

Client Sample ID: MW221SG4-24 Project: FRNP00511 Sample ID: 677449003 Client ID: FRNP005

DL

RL

Units

PF

volatile Organics								
8260D, Volatiles- full s	uite "As Recei	ved"						
trans-1,2-Dichloroethylene	U	1.00	0.333	1.00	ug/I	_ 1		
trans-1,3-Dichloropropylene	UY2	1.00	0.333	1.00	ug/I	_ 1		
trans-1,4-Dichloro-2-butene	U	5.00	1.67	5.00) ug/I	_ 1		
The following Prep Met	thods were per	formed:						
Method	Description			Analyst	Date	Tim	e Prep Batc	h
SW846 3005A	ICP-MS 3005A	A PREP		BB2	07/31/2	24 1510	2647182	
SW846 8011 PREP	8011 Prep			LOF	08/03/2	24 1306	2647153	
SW846 7470A Prep	EPA 7470A M	ercury Prep Liquid		JM13	07/26/2	24 1100	2646458	
SW846 9010C Distillation	SW846 9010C	Prep		ES2	07/26/2	24 1134	2646662	
The following Analytic	al Methods w	ere performed:						
Method	Description					Analyst Co	mments	
1	SW846 8011					-		
2	SW846 8011							
3	SW846 9060A							
4	SW846 9012B							
5	SW846 9020B							
6	EPA 300.0							
7	SW846 9056A							
8	SW846 9056A							
9	SW846 7470A							
10	SW846 3005A/	6020B						
11	SW846 3005A/	6020B						
12	EPA 160.1							
13	EPA 410.4							
14	SW846 8260D							
Surrogate/Tracer Recov	ery Test				Result	Nominal	Recovery%	Acceptable Limits
1-Chloro-2-fluorobenzene	8011, VC	OA Compounds Liquid "As Receiv	ed"		6.27 ug/L	6.67	94	(56%-149%)
Bromofluorobenzene		Volatiles- full suite "As Received"			52.1 ug/L	50.0	104	(74%-123%)
1,2-Dichloroethane-d4	8260D, V	Volatiles- full suite "As Received"			50.3 ug/L	50.0	101	(76%-127%)
Toluene-d8	8260D, V	Volatiles- full suite "As Received"			52.8 ug/L	50.0	106	(77%-121%)
					-			

Parameter

Volatile Organics

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW221SG4-24 Project: FRNP00511 Sample ID: 677449003 Client ID: FRNP005

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW221SG4-24 Sample ID: 677449004

Matrix: WG

Collect Date: 24-JUL-24 07:35
Receive Date: 25-JUL-24
Collector: Client

Project: FRNP00511 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst D	ate	Time Batch	Method
Metals Analysis-ICP-N	1S										
6020, Dissolved Metal	s (3 Elements)	"As Received"									
Barium		0.209	0.000670	0.00400	mg/L	1.00	1	PRB 08/	10/24	2011 2647183	1
Chromium	J	0.00497	0.00300	0.0100	mg/L	1.00	1				
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00	1				
The following Prep Me	thods were pe	erformed:									
Method	Description	n		Analyst	Date	,	Time	e Prep B	Batch		
SW846 3005A	ICP-MS 3005	SA PREP		BB2	07/31/24		1510	2647182	2		
EPA 160	Laboratory Fi	ltration		SD	07/26/24		1322	2646414	4		
The following Analyti	cal Methods v	vere performed:									
Method	Description				Α	Analyst	Coı	nments			
1	SW846 3005A	A/6020B									

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: October 31, 2024

FRNP00511

FRNP005

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW393SG4-24

Sample ID: 677449005

Matrix: WG

Collect Date: 24-JUL-24 11:18
Receive Date: 25-JUL-24
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time Batc	n Method
504.1/8011 Analysis of	EDB/DBCP										
8011, VOA Compound	s Liquid "As	Received"									
1,2-Dibromo-3-chloropropan	e U	0.0192	0.00864	0.0192	ug/L	0.960	1	LOF	08/03/24	1636 26471	54 2
Carbon Analysis											
9060A, Total Organic (Carbon "As R	eceived"									
Total Organic Carbon Averag		1.91	0.330	2.00	mg/L		1	KB3	08/19/24	0131 26579	19 3
Flow Injection Analysis											
9012B, Total Cyanide '	'As Received'	"									
Cyanide, Total	U	0.200	0.00167	0.200	mg/L	1.00	1	AXH3	07/26/24	1202 26466	53 4
Halogen Analysis											
9020B, TOX (Organic	Halogen) "As	Received"									
Total Organic Halogens	ζ,	22.1	3.33	10.0	ug/L		1	JS13	08/19/24	1949 26589	2 5
Ion Chromatography											
300.0, Iodide in Liquid	"As Received	1"									
Iodide	U	0.500	0.167	0.500	mg/L		1	TXT1	08/12/24	1254 26549	03 6
SW846 9056A Anions	(5) "As Recei	ved"									
Nitrate-N	J	0.226	0.0660	10.0	mg/L		2	CH6	07/25/24	2006 26463	36 7
Sulfate		23.2	0.266	0.800	mg/L		2				
Bromide	UW	0.200	0.0670	0.200	mg/L		1	CH6	07/25/24	1457 26463	86 8
Chloride	J	9.43	0.0670	250	mg/L		1				
Fluoride	J	0.219	0.0330	4.00	mg/L		1				
Mercury Analysis-CVA											
7470, Mercury Liquid '	'As Received'										
Mercury	U	0.000200	0.0000670	0.000200	mg/L	1.00	1	JP2	07/29/24	1102 26464	59 9
Metals Analysis-ICP-M	IS										
6020, Metals (15+) "As	Received"										
Aluminum	J	0.0284	0.0193	0.0500	mg/L	1.00	1	PRB	08/10/24	2014 26471	33 10
Antimony	U	0.00300	0.00100	0.00300	mg/L	1.00	1				
Arsenic	J	0.00401	0.00200	0.00500	mg/L	1.00	1				
Barium		0.0910	0.000670	0.00400	mg/L	1.00	1				
Beryllium	U	0.000500	0.000200	0.000500	mg/L	1.00	1				
Boron		0.0168	0.00520	0.0150	mg/L	1.00	1				
Cadmium	U	0.00100	0.000300	0.00100	mg/L	1.00	1				
Calcium	**	15.8	0.0800	0.200	mg/L	1.00	1				
Chromium	U	0.0100	0.00300	0.0100	mg/L	1.00	1				

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW393SG4-24 Project: FRNP00511 Sample ID: 677449005 Client ID: FRNP005

Metals Analysis-ICP-MS	Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	e Batch	Method
Cobate	Metals Analysis-ICP-M	IS											
Copper	6020, Metals (15+) "As	Received"											
Iron	Cobalt	U	0.00100	0.000300	0.00100	mg/L	1.00	1					
Lead	Copper	J	0.000726	0.000300	0.00200	mg/L	1.00	1					
Magnesium 4.01 0.0100 0.0300 mg/L 1.00 1 IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Iron		1.09	0.0330	0.100	mg/L	1.00	1					
Manganese	Lead	U	0.00200	0.000500	0.00200	mg/L	1.00	1					
Molybdenum	Magnesium		4.01	0.0100	0.0300	mg/L	1.00	1					
Nickel U 0.00200 0.000600 0.00200 mg/L 1.00 1 Potassium 0.459 0.0800 0.300 mg/L 1.00 1 Silver U 0.00104 0.00150 0.00500 mg/L 1.00 1 Silver U 0.00100 0.000300 0.00100 mg/L 1.00 1 Silver U 0.00200 0.000600 0.00200 mg/L 1.00 1 Vanadium U 0.00200 0.000600 0.00200 mg/L 1.00 1 Vanadium U 0.00200 0.00330 0.0200 mg/L 1.00 1 Vanadium U 0.00500 0.00160 0.00500 mg/L 1.00 1 Vanadium U 0.00500 0.00330 0.0000 mg/L 1.00 1 Va	Manganese		0.0338	0.00100	0.00500	mg/L	1.00	1					
Potassium	Molybdenum	J	0.000463	0.000200	0.00100	mg/L	1.00	1					
Selenium	Nickel	U	0.00200	0.000600	0.00200	mg/L	1.00	1					
Silver U 0.00100 0.000300 0.00100 mg/L 1.00 1 Thallium U 0.00200 0.000600 0.000200 mg/L 1.00 1 Vanadium 0.000213 0.0000670 0.000200 mg/L 1.00 1 Vanadium U 0.0200 0.00330 0.0200 mg/L 1.00 1 Zinc U 0.0200 0.00330 0.0200 mg/L 1.00 1 Sodium 77.9 0.800 2.50 mg/L 1.00 1 PRB 08/11/24 1754 2647183 11 Rhodium U 0.00500 0.00160 0.00500 mg/L 1.00 1 PRB 08/11/24 1754 2647183 12 Tantalum U 0.00500 mg/L 1.00 1 PRB 08/11/24 1754 2647183 12 Total Dissolved Solids Tas Received Total Dissolved Solids ** 272 2.38 10.0	Potassium		0.459	0.0800	0.300	mg/L		1					
Thallium	Selenium	J	0.00174	0.00150	0.00500	mg/L	1.00	1					
Uranium 0.000213 0.0000670 0.000200 mg/L 1.00 1 Vanadium U 0.0200 0.00330 0.0200 mg/L 1.00 1 Zinc U 0.0200 0.00330 0.0200 mg/L 1.00 1 Sodium 77.9 0.800 2.50 mg/L 1.00 1 PRB 08/11/24 1754 2647183 11 Rhodium U 0.00500 0.00160 0.00500 mg/L 1.00 1 PRB 08/10/24 2302 2647183 12 Tantalum U 0.00500 0.00100 0.00500 mg/L 1.00 1 PRB 08/10/24 2302 2647183 12 Solids Analysis 160.1, Dissolved Solids "As Received" Total Dissolved Solids 272 2.38 10.0 mg/L 1 HH2 07/30/24 1447 2648069 13 Spectrometric Analysis 410.4, Chem. Oxygen Demand "As Received" RECeived"		U	0.00100	0.000300	0.00100	mg/L	1.00	1					
Vanadium U 0.0200 0.00330 0.0200 mg/L 1.00 1 Zinc U 0.0200 0.00330 0.0200 mg/L 1.00 1 Sodium 77.9 0.800 2.50 mg/L 1.00 1 PRB 08/11/24 1754 2647183 11 Rhodium U 0.00500 0.00100 0.00500 mg/L 1.00 1 PRB 08/10/24 2302 2647183 12 Tantalum U 0.00500 0.00100 0.00500 mg/L 1.00 1 PRB 08/10/24 2302 2647183 12 Solids Analysis 160.1, Dissolved Solids "As Received" Total Dissolved Solids "As Received" COD J 15.7 8.95 20.0 mg/L 1 HH2 07/30/24 1473 2647741 14 Volatile Organics 8260D, Volatiles- full suite "As Received" 1,1,1,2-Tetrachloroethane U <td< td=""><td></td><td>U</td><td>0.00200</td><td>0.000600</td><td></td><td></td><td></td><td>1</td><td></td><td></td><td></td><td></td><td></td></td<>		U	0.00200	0.000600				1					
Cinc	Uranium		0.000213	0.0000670	0.000200	mg/L		1					
Sodium	Vanadium	U	0.0200	0.00330		mg/L		1					
Rhodium		U				_							
Tantalum U 0.00500 0.00100 0.00500 mg/L 1.00 1 Solids Analysis 160.1, Dissolved Solids "As Received" Total Dissolved Solids 3 272 2.38 10.0 mg/L				0.800		mg/L		10			1754	2647183	
Solids Analysis 160.1, Dissolved Solids "As Received"		U						1	PRB	08/10/24	2302	2647183	12
160.1, Dissolved Solids "As Received"	Tantalum	U	0.00500	0.00100	0.00500	mg/L	1.00	1					
Total Dissolved Solids 272 2.38 10.0 mg/L KLP1 07/30/24 1447 2648069 13 Spectrometric Analysis 410.4, Chem. Oxygen Demand "As Received"	•												
Spectrometric Analysis 410.4, Chem. Oxygen Demand "As Received" Spectrometric Analysis 410.4, Chem. Oxygen Demand "As Received" Spectrometric Analysis Spectrom	160.1, Dissolved Solids	"As Receive	ed"										
410.4, Chem. Oxygen Demand "As Received" COD J J 15.7 8.95 20.0 mg/L 1 HH2 07/31/24 1733 2647741 14 Volatile Organics 8260D, Volatiles- full suite "As Received" 1,1,1,2-Tetrachloroethane UY2 1.00 0.333 1.00 ug/L 1 JB6 07/26/24 1349 2646976 15 1,1,1-Trichloroethane U 1.00 0.333 1.00 ug/L 1 1,1,2-Tetrachloroethane U 1.00 0.333 1.00 ug/L 1 1,1,2-Tetrachloroethane UY2 1.00 0.333 1.00 ug/L 1 1,1,2-Trichloroethane UY2 1.00 0.333 1.00 ug/L 1 1,1,1-Dichloroethane UY2 1.00 0.333 1.00 ug/L 1 1,1-Dichloroethane U 1.00 0.333 1.00 ug/L 1 1,1-Dichloroethane U 1.00 0.333 1.00 ug/L 1 1,1-Dichloroethane U 1.00 0.333 1.00 ug/L 1	Total Dissolved Solids		272	2.38	10.0	mg/L			KLP1	07/30/24	1447	2648069	13
COD J 15.7 8.95 20.0 mg/L 1 HH2 07/31/24 1733 2647741 14 Volatile Organics 8260D, Volatiles- full suite "As Received" 1,1,1,2-Tetrachloroethane UY2 1.00 0.333 1.00 ug/L 1 JB6 07/26/24 1349 2646976 15 1,1,1-Trichloroethane U 1.00 0.333 1.00 ug/L 1 1 JB6 07/26/24 1349 2646976 15 1,1,2-Tetrachloroethane U 1.00 0.333 1.00 ug/L 1 1,1,2-Tetrachloroethane UY2 1.00 0.333 1.00 ug/L 1 1,1,2-Trichloroethane UY2 1.00 0.333 1.00 ug/L 1 1,1,2-Trichloroethane UY2 1.00 0.333 1.00 ug/L 1 1,1-Dichloroethane U 1.00 0.333 1.00 ug/L 1 1	Spectrometric Analysis												
Volatile Organics 8260D, Volatiles- full suite "As Received" 1,1,1,2-Tetrachloroethane UY2 1.00 0.333 1.00 ug/L 1 JB6 07/26/24 1349 2646976 15 1,1,1-Trichloroethane U 1.00 0.333 1.00 ug/L 1 1,1,2,2-Tetrachloroethane U 1.00 0.333 1.00 ug/L 1 1,1,2-Trichloroethane UY2 1.00 0.333 1.00 ug/L 1 1,1,2-Trichloroethane UY2 1.00 0.333 1.00 ug/L 1 1,1-Dichloroethane U 1.00 0.333 1.00 ug/L 1 1,1-Dichloroethylene U 1.00 0.333 1.00 ug/L 1	410.4, Chem. Oxygen I	Demand "As l	Received"										
8260D, Volatiles- full suite "As Received" 1,1,1,2-Tetrachloroethane UY2 1.00 0.333 1.00 ug/L 1 JB6 07/26/24 1349 2646976 15 1,1,1-Trichloroethane U 1.00 0.333 1.00 ug/L 1 1,1,2,2-Tetrachloroethane U 1.00 0.333 1.00 ug/L 1 1,1,2-Trichloroethane UY2 1.00 0.333 1.00 ug/L 1 1,1,2-Trichloroethane UY2 1.00 0.333 1.00 ug/L 1 1,1-Dichloroethane U 1.00 0.333 1.00 ug/L 1 1,1-Dichloroethylene U 1.00 0.333 1.00 ug/L 1	COD	J	15.7	8.95	20.0	mg/L		1	HH2	07/31/24	1733	2647741	14
1,1,1,2-Tetrachloroethane UY2 1.00 0.333 1.00 ug/L 1 JB6 07/26/24 1349 2646976 15 1,1,1-Trichloroethane U 1.00 0.333 1.00 ug/L 1 1,1,2-Tetrachloroethane U 1.00 0.333 1.00 ug/L 1 1,1,2-Trichloroethane UY2 1.00 0.333 1.00 ug/L 1 1,1-Dichloroethane U 1.00 0.333 1.00 ug/L 1 1,1-Dichloroethylene U 1.00 0.333 1.00 ug/L 1	Volatile Organics					-							
1,1,1-Trichloroethane U 1.00 0.333 1.00 ug/L 1 1,1,2,2-Tetrachloroethane U 1.00 0.333 1.00 ug/L 1 1,1,2-Trichloroethane UY2 1.00 0.333 1.00 ug/L 1 1,1-Dichloroethane U 1.00 0.333 1.00 ug/L 1 1,1-Dichloroethylene U 1.00 0.333 1.00 ug/L 1	8260D, Volatiles- full s	uite "As Rece	eived"										
1,1,2,2-Tetrachloroethane U 1.00 0.333 1.00 ug/L 1 1,1,2-Trichloroethane UY2 1.00 0.333 1.00 ug/L 1 1,1-Dichloroethane U 1.00 0.333 1.00 ug/L 1 1,1-Dichloroethylene U 1.00 0.333 1.00 ug/L 1	1,1,1,2-Tetrachloroethane	UY2	1.00	0.333	1.00	ug/L		1	JB6	07/26/24	1349	2646976	15
1,1,2-Trichloroethane UY2 1.00 0.333 1.00 ug/L 1 1,1-Dichloroethane U 1.00 0.333 1.00 ug/L 1 1,1-Dichloroethylene U 1.00 0.333 1.00 ug/L 1	1,1,1-Trichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1-Dichloroethane U 1.00 0.333 1.00 ug/L 1 1,1-Dichloroethylene U 1.00 0.333 1.00 ug/L 1	1,1,2,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1-Dichloroethylene U 1.00 0.333 1.00 ug/L 1	1,1,2-Trichloroethane	UY2	1.00	0.333	1.00	ug/L		1					
	1,1-Dichloroethane	U	1.00	0.333	1.00	ug/L		1					
1.2.3-Trichloropropane U 1.00 0.333 1.00 ug/L 1	1,1-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1					
-,=,	1,2,3-Trichloropropane	U	1.00	0.333	1.00	ug/L		1					
1,2-Dibromoethane UY2 1.00 0.333 1.00 ug/L 1	1,2-Dibromoethane	UY2	1.00	0.333	1.00	ug/L		1					

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW393SG4-24 Project: FRNP00511 Sample ID: 677449005 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
Volatile Organics									
8260D, Volatiles- full s	suite "As Rec	eived"							
1,2-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloroethane	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloropropane	U	1.00	0.333	1.00	ug/L		1		
1,4-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
2-Butanone	U	5.00	1.67	5.00	ug/L		1		
2-Hexanone	UY2	5.00	1.67	5.00	ug/L		1		
4-Methyl-2-pentanone	UY2	5.00	1.67	5.00	ug/L		1		
Acetone	J	2.39	1.74	5.00	ug/L		1		
Acrolein	U	5.00	1.67	5.00	ug/L		1		
Acrylonitrile	U	5.00	1.67	5.00	ug/L		1		
Benzene	U	1.00	0.333	1.00	ug/L		1		
Bromochloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromodichloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromoform	U	1.00	0.333	1.00	ug/L		1		
Bromomethane	U	1.00	0.337	1.00	ug/L		1		
Carbon disulfide	U	5.00	1.67	5.00	ug/L		1		
Carbon tetrachloride	U	1.00	0.333	1.00	ug/L		1		
Chlorobenzene	UY2	1.00	0.333	1.00	ug/L		1		
Chloroethane	U	1.00	0.333	1.00	ug/L		1		
Chloroform	U	1.00	0.333	1.00	ug/L		1		
Chloromethane	U	1.00	0.333	1.00	ug/L		1		
Dibromochloromethane	UY2	1.00	0.333	1.00	ug/L		1		
Dibromomethane	U	1.00	0.333	1.00	ug/L		1		
Ethylbenzene	UY2	1.00	0.333	1.00	ug/L		1		
Iodomethane	U	5.00	1.67	5.00	ug/L		1		
Methylene chloride	U	5.00	0.500	5.00	ug/L		1		
Styrene	UY2	1.00	0.333	1.00	ug/L		1		
Tetrachloroethylene	UY2	1.00	0.333	1.00	ug/L		1		
Toluene	UY2	1.00	0.333	1.00	ug/L		1		
Trichloroethylene	J	0.830	0.333	1.00	ug/L		1		
Trichlorofluoromethane	U	1.00	0.333	1.00	ug/L		1		
Vinyl acetate	U	5.00	1.67	5.00	ug/L		1		
Vinyl chloride	U	1.00	0.333	1.00	ug/L		1		
Xylenes (total)	UY2	3.00	1.00	3.00	ug/L		1		
cis-1,2-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1		
cis-1,3-Dichloropropylene	U	1.00	0.333	1.00	ug/L		1		

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Certificate of Analysis

Report Date: October 31, 2024

DF Analyst Date Time Batch Method

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Qualifier

8260D, Volatiles- full suite "As Received"

Project: C-746-S&T Landfill Quarterly(SG24-04)

Result

8260D, Volatiles- full suite "As Received"

8260D, Volatiles- full suite "As Received"

Client Sample ID: MW393SG4-24 Project: FRNP00511 Sample ID: 677449005 Client ID: FRNP005

DL

RL

Units

PF

trans-1,2-Dichloroethylene	U	1.00	0.333	3	1.00	ug/L	_	1		
trans-1,3-Dichloropropylene	UY2	1.00	0.333		1.00	ug/L		1		
trans-1,4-Dichloro-2-butene	U	5.00	1.6	7	5.00	ug/L	_	1		
The following Prep Met	hods were p	erformed:								
Method	Description	n		Ana	lyst	Date	Ti	me	Prep Batch	h
SW846 7470A Prep	EPA 7470A	Mercury Prep	Liquid	JM13	3	07/26/2	24 11	00	2646458	
SW846 9010C Distillation	SW846 9010	C Prep		ES2		07/26/2	24 11	34	2646662	
SW846 3005A	ICP-MS 3005	5A PREP		BB2		07/31/2	24 15	10	2647182	
SW846 8011 PREP	8011 Prep			LOF		08/03/2	24 13	06	2647153	
The following Analytic	al Methods v	were perfor	med:							
Method	Description	1					Analyst C	Comn	nents	
1	SW846 8011						-			
2	SW846 8011									
3	SW846 9060A	A								
4	SW846 9012I	3								
5	SW846 9020I	3								
6	EPA 300.0									
7	SW846 9056A	A								
8	SW846 9056A	A								
9	SW846 7470	A								
10	SW846 3005A	A/6020B								
11	SW846 3005A	A/6020B								
12	SW846 3005A	A/6020B								
13	EPA 160.1									
14	EPA 410.4									
15	SW846 8260I)								
Surrogate/Tracer Recov	ery Test				R	Result	Nominal	R	ecovery%	Acceptable Limits
1-Chloro-2-fluorobenzene	8011, V	OA Compou	nds Liquid "As Received"		6.2	27 ug/L	6.86		91	(56%-149%)
Bromofluorobenzene	8260D,	Volatiles- ful	l suite "As Received"		51	.1 ug/L	50.0		102	(74%-123%)

Toluene-d8

1,2-Dichloroethane-d4

Parameter

Volatile Organics

49.2 ug/L

51.3 ug/L

50.0

50.0

98

103

(76%-127%)

(77%-121%)

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW393SG4-24 Project: FRNP00511 Sample ID: 677449005 Client ID: FRNP005

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

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Certificate of Analysis

Report Date: October 31, 2024

Four Rivers Nuclear Partnership, LLC Company:

5600 Hobbs Road Address:

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

C-746-S&T Landfill Quarterly(SG24-04) Project:

Client Sample ID: MW393SG4-24 Sample ID: 677449006

Matrix: WG

Collect Date: 24-JUL-24 11:18 Receive Date: 25-JUL-24 Collector: Client

Project: Client ID: FRNP005

FRNP00511

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Time Batch	Method
Metals Analysis-ICP-M	1S									
6020, Dissolved Metals	s (3 Elements)	"As Received"								
Barium		0.0503	0.000670	0.00400	mg/L	1.00	1	PRB 08/10/24	2018 2647183	1
Chromium	U	0.0100	0.00300	0.0100	mg/L	1.00	1			
Uranium	J	0.000129	0.0000670	0.000200	mg/L	1.00	1			
The following Prep Me	thods were pe	erformed:								
Method	Description	n		Analyst	Date	7	Гіте	Prep Batch		
SW846 3005A	ICP-MS 3005	SA PREP		BB2	07/31/24	1	1510	2647182		
EPA 160	Laboratory Fi	ltration		SD	07/26/24	1	1322	2646414		
The following Analyti	cal Methods v	vere performed:								
Method	Description	l			A	Analyst	Com	nments		
1	SW846 3005A	A/6020B								

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level DL: Detection Limit PF: Prep Factor MDA: Minimum Detectable Activity **RL**: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: October 31, 2024

FRNP00511

FRNP005

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW394SG4-24

Sample ID: 677449007

Matrix: WG

Collect Date: 24-JUL-24 09:04
Receive Date: 25-JUL-24
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	e Batch	Method
504.1/8011 Analysis of	f EDB/DBCP											
8011, VOA Compound	ls Liquid "As	Received"										
1,2-Dibromo-3-chloropropar	_	0.0195	0.00876	0.0195	ug/L	0.974	1	LOF	08/03/24	1707	2647154	1
Carbon Analysis												
9060A, Total Organic	Carbon "As R	eceived"										
Total Organic Carbon Avera	ge J	0.590	0.330	2.00	mg/L		1	KB3	08/19/24	1505	2657954	3
Flow Injection Analysi	S											
9012B, Total Cyanide	"As Received	"										
Cyanide, Total	U	0.200	0.00167	0.200	mg/L	1.00	1	AXH3	07/26/24	1209	2646663	4
Halogen Analysis												
9020B, TOX (Organic	Halogen) "As	Received"										
Total Organic Halogens	J	8.76	3.33	10.0	ug/L		1	JS13	08/19/24	1640	2658912	5
Ion Chromatography												
300.0, Iodide in Liquid	l "As Received	d"										
Iodide	U	0.500	0.167	0.500	mg/L		1	TXT1	08/12/24	1307	2654903	6
SW846 9056A Anions	(5) "As Recei	ived"										
Chloride	J	22.5	0.670	250	mg/L		10	CH6	07/26/24	0826	2646386	7
Bromide	W	0.800	0.0670	0.200	mg/L		1	CH6	07/25/24	1528	2646386	8
Fluoride	J	0.147	0.0330	4.00	mg/L		1					
Sulfate		11.7	0.133	0.400	mg/L		1					
Nitrate-N	J	1.18	0.0660	10.0	mg/L		2	CH6	07/25/24	2036	2646386	9
Mercury Analysis-CV	AA											
7470, Mercury Liquid	"As Received	"										
Mercury	U	0.000200	0.0000670	0.000200	mg/L	1.00	1	JP2	07/29/24	1104	2646459	10
Metals Analysis-ICP-N	AS											
6020, Metals (15+) "As	s Received"											
Aluminum	U	0.0500	0.0193	0.0500	mg/L	1.00	1	PRB	08/10/24	2029	2647183	11
Antimony	U	0.00300	0.00100	0.00300	mg/L	1.00	1					
Arsenic	U	0.00500	0.00200	0.00500	mg/L	1.00	1					
Barium		0.284	0.000670	0.00400	mg/L	1.00	1					
Beryllium	U	0.000500	0.000200	0.000500	mg/L	1.00	1					
Boron		0.0206	0.00520	0.0150	mg/L	1.00	1					
Cadmium	U	0.00100	0.000300	0.00100	mg/L	1.00	1					
Calcium	**	27.5	0.0800	0.200	mg/L	1.00	1					
Chromium	U	0.0100	0.00300	0.0100	mg/L	1.00	1					

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW394SG4-24 Project: FRNP00511 Sample ID: 677449007 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time Batch	Method
Metals Analysis-ICP-M	1S										
6020, Metals (15+) "As	Received"										
Cobalt	U	0.00100	0.000300	0.00100	mg/L	1.00	1				
Copper	J	0.00103	0.000300	0.00200	mg/L	1.00	1				
Iron	J	0.0602	0.0330	0.100	mg/L	1.00	1				
Lead	U	0.00200	0.000500	0.00200	mg/L	1.00	1				
Magnesium		11.5	0.0100	0.0300	mg/L	1.00	1				
Manganese	J	0.00156	0.00100	0.00500	mg/L	1.00	1				
Molybdenum	U	0.00100	0.000200	0.00100	mg/L	1.00	1				
Nickel		0.00811	0.000600	0.00200	mg/L	1.00	1				
Potassium		1.57	0.0800	0.300	mg/L	1.00	1				
Selenium	U	0.00500	0.00150	0.00500	mg/L	1.00	1				
Silver	U	0.00100	0.000300	0.00100	mg/L	1.00	1				
Sodium		33.2	0.0800	0.250	mg/L	1.00	1				
Thallium	U	0.00200	0.000600	0.00200	mg/L	1.00	1				
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00	1				
Vanadium	U	0.0200	0.00330	0.0200	mg/L	1.00	1				
Zinc	J	0.00357	0.00330	0.0200	mg/L	1.00	1				
Rhodium	U	0.00500	0.00160	0.00500	mg/L	1.00	1	PRB	08/10/24	2308 2647183	12
Tantalum	U	0.00500	0.00100	0.00500	mg/L	1.00	1				
Solids Analysis											
160.1, Dissolved Solids	s "As Receive	ed"									
Total Dissolved Solids		217	2.38	10.0	mg/L			KLP1	07/30/24	1447 2648069	13
Spectrometric Analysis					· ·						
410.4, Chem. Oxygen I		Received"									
COD	. J	11.0	8.95	20.0	mg/L		1	HH2	07/31/24	1733 2647741	14
Volatile Organics			****				_				
8260D, Volatiles- full s	uite "As Rece	eived"									
1,1,1,2-Tetrachloroethane	UY2	1.00	0.333	1.00	ug/L		1	JB6	07/26/24	1414 2646976	15
1,1,1-Trichloroethane	U	1.00	0.333	1.00	ug/L		1				
1,1,2,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1				
1,1,2-Trichloroethane	UY2	1.00	0.333	1.00	ug/L		1				
1,1-Dichloroethane	U	1.00	0.333	1.00	ug/L		1				
1,1-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1				
1,2,3-Trichloropropane	U	1.00	0.333	1.00	ug/L		1				
1,2-Dibromoethane	UY2	1.00	0.333	1.00	ug/L		1				

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Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

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Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW394SG4-24 Project: FRNP00511 Sample ID: 677449007 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
Volatile Organics									
8260D, Volatiles- full	suite "As Rec	eived"							
1,2-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloroethane	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloropropane	U	1.00	0.333	1.00	ug/L		1		
1,4-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
2-Butanone	U	5.00	1.67	5.00	ug/L		1		
2-Hexanone	UY2	5.00	1.67	5.00	ug/L		1		
4-Methyl-2-pentanone	UY2	5.00	1.67	5.00	ug/L		1		
Acetone	U	5.00	1.74	5.00	ug/L		1		
Acrolein	U	5.00	1.67	5.00	ug/L		1		
Acrylonitrile	U	5.00	1.67	5.00	ug/L		1		
Benzene	U	1.00	0.333	1.00	ug/L		1		
Bromochloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromodichloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromoform	U	1.00	0.333	1.00	ug/L		1		
Bromomethane	U	1.00	0.337	1.00	ug/L		1		
Carbon disulfide	U	5.00	1.67	5.00	ug/L		1		
Carbon tetrachloride	U	1.00	0.333	1.00	ug/L		1		
Chlorobenzene	UY2	1.00	0.333	1.00	ug/L		1		
Chloroethane	U	1.00	0.333	1.00	ug/L		1		
Chloroform	U	1.00	0.333	1.00	ug/L		1		
Chloromethane	U	1.00	0.333	1.00	ug/L		1		
Dibromochloromethane	UY2	1.00	0.333	1.00	ug/L		1		
Dibromomethane	U	1.00	0.333	1.00	ug/L		1		
Ethylbenzene	UY2	1.00	0.333	1.00	ug/L		1		
Iodomethane	U	5.00	1.67	5.00	ug/L		1		
Methylene chloride	U	5.00	0.500	5.00	ug/L		1		
Styrene	UY2	1.00	0.333	1.00	ug/L		1		
Tetrachloroethylene	UY2	1.00	0.333	1.00	ug/L		1		
Toluene	UY2	1.00	0.333	1.00	ug/L		1		
Trichloroethylene		4.23	0.333	1.00	ug/L		1		
Trichlorofluoromethane	U	1.00	0.333	1.00	ug/L		1		
Vinyl acetate	U	5.00	1.67	5.00	ug/L		1		
Vinyl chloride	U	1.00	0.333	1.00	ug/L		1		
Xylenes (total)	UY2	3.00	1.00	3.00	ug/L		1		
cis-1,2-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1		
cis-1,3-Dichloropropylene	U	1.00	0.333	1.00	ug/L		1		

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Certificate of Analysis

Report Date: October 31, 2024

DF Analyst Date Time Batch Method

Four Rivers Nuclear Partnership, LLC Company:

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Qualifier

8260D, Volatiles- full suite "As Received"

Project: C-746-S&T Landfill Quarterly(SG24-04)

Result

8260D, Volatiles- full suite "As Received"

Client Sample ID: MW394SG4-24 Project: FRNP00511 Sample ID: 677449007 Client ID: FRNP005

DL

RL

Units

PF

trans-1,2-Dichloroethylene		U	1.00	0.333	1.00) uş	g/L	1		
trans-1,3-Dichloropropylene		UY2	1.00	0.333	1.00		g/L	1		
trans-1,4-Dichloro-2-butene		U	5.00	1.67	5.00) սչ	g/L	1		
The following Prep Met	thods w	ere perf	formed:							
Method	Desc	ription			Analyst	Date	e T	ime	Prep Batc	h
SW846 3005A	ICP-M	IS 3005A	PREP		BB2	07/31	1/24 1:	510	2647182	
SW846 9010C Distillation	SW84	6 9010C I	Prep		ES2	07/26	5/24 1	134	2646662	
SW846 8011 PREP	8011 F	Prep			LOF	08/03	3/24 13	306	2647153	
SW846 7470A Prep	EPA 7	470A Me	rcury Prep Liquid		JM13	07/26	5/24 1	100	2646458	
The following Analytic	al Meth	nods we	re performed:							
Method	Descr	ription					Analyst	Comn	nents	
1	SW846	6 8011								
2	SW846	5 8011								
3	SW846	5 9060A								
4	SW846	5 9012B								
5	SW846	6 9020B								
6	EPA 30	0.00								
7	SW846	6 9056A								
8	SW846	6 9056A								
9	SW846	6 9056A								
10	SW846	5 7470A								
11	SW846	5 3005A/6	5020B							
12	SW846	5 3005A/6	6020B							
13	EPA 10	60.1								
14	EPA 4	10.4								
15	SW846	6 8260D								
Surrogate/Tracer Recov	ery	Test				Result	Nomina	R	Recovery%	Acceptable Limits
1-Chloro-2-fluorobenzene			A Compounds Liquid "As Rec			6.79 ug/L	6.95		98	(56%-149%)
Bromofluorobenzene	8	8260D, V	olatiles- full suite "As Receive	d"		49.7 ug/L	50.0		99	(74%-123%)
1,2-Dichloroethane-d4	8	8260D, V	olatiles- full suite "As Receive	d"		48.5 ug/L	50.0		97	(76%-127%)

Toluene-d8

Parameter

Volatile Organics

50.7 ug/L

50.0

101

(77%-121%)

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW394SG4-24 Project: FRNP00511 Sample ID: 677449007 Client ID: FRNP005

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW394SG4-24 Sample ID: 677449008

Matrix: WG

Collect Date: 24-JUL-24 09:04
Receive Date: 25-JUL-24
Collector: Client

Project: FRNP00511 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Time Batch	Method
Metals Analysis-IC	CP-MS									
6020, Dissolved M	letals (3 Elements)	"As Received"								
Barium		0.280	0.000670	0.00400	mg/L	1.00	1	PRB 08/10/24	2047 2647183	1
Chromium	U	0.0100	0.00300	0.0100	mg/L	1.00	1			
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00	1			
The following Prep	p Methods were per	rformed:								
Method	Description			Analyst	Date	,	Time	e Prep Batch	1	
SW846 3005A	ICP-MS 3005	A PREP		BB2	07/31/24		1510	2647182		
EPA 160	Laboratory Fil	tration		SD	07/26/24		1322	2646414		
The following Ana	alytical Methods w	ere performed:								
Method	Description				A	Analyst	t Cor	mments		
1	SW846 3005A	/6020B								

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

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Certificate of Analysis

Project:

Client ID:

Report Date: October 31, 2024

FRNP00511

FRNP005

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW395SG4-24

Sample ID: 677449009

Matrix: WG

Collect Date: 24-JUL-24 10:04
Receive Date: 25-JUL-24
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
504.1/8011 Analysis of	EDB/DBCP											
8011, VOA Compounds	s Liquid "As	Received"										
1,2-Dibromo-3-chloropropane		0.0190	0.00855	0.0190	ug/L	0.950	1	LOF	08/03/24	1838	2647154	1
Carbon Analysis												
9060A, Total Organic C	Carbon "As R	eceived"										
Total Organic Carbon Averag	e J	0.573	0.330	2.00	mg/L		1	KB3	08/19/24	1638	2657954	3
Flow Injection Analysis	1											
9012B, Total Cyanide ".	As Received'	"										
Cyanide, Total	U	0.200	0.00167	0.200	mg/L	1.00	1	AXH3	07/26/24	1212	2646663	4
Halogen Analysis												
9020B, TOX (Organic I	Halogen) "As	Received"										
Total Organic Halogens	υ,	18.9	3.33	10.0	ug/L		1	JS13	08/19/24	2029	2658912	5
Ion Chromatography												
300.0, Iodide in Liquid	"As Received	d"										
Iodide	U	0.500	0.167	0.500	mg/L		1	TXT1	08/12/24	1346	2654903	6
SW846 9056A Anions ((5) "As Recei	ived"										
Nitrate-N	J	1.27	0.0660	10.0	mg/L		2	CH6	07/25/24	2209	2646386	7
Chloride	J	22.8	0.670	250	mg/L		10	CH6	07/26/24	0959	2646386	8
Bromide	W	0.622	0.0670	0.200	mg/L		1	CH6	07/25/24	1559	2646386	9
Fluoride	J	0.133	0.0330	4.00	mg/L		1					
Sulfate		11.1	0.133	0.400	mg/L		1					
Mercury Analysis-CVA	A											
7470, Mercury Liquid ".	As Received'	"										
Mercury	U	0.000200	0.0000670	0.000200	mg/L	1.00	1	JP2	07/29/24	1115	2646459	10
Metals Analysis-ICP-M	S											
6020, Metals (15+) "As	Received"											
Aluminum	J	0.0325	0.0193	0.0500	mg/L	1.00	1	PRB	08/10/24	2113	2647183	11
Antimony	U	0.00300	0.00100	0.00300	mg/L	1.00	1					
Arsenic	U	0.00500	0.00200	0.00500	mg/L	1.00	1					
Barium		0.254	0.000670	0.00400	mg/L	1.00	1					
Beryllium	U	0.000500	0.000200	0.000500	mg/L	1.00	1					
Boron		0.0195	0.00520	0.0150	mg/L	1.00	1					
Cadmium	U	0.00100	0.000300	0.00100	mg/L	1.00	1					
Calcium		26.9	0.0800	0.200	mg/L	1.00	1					
Chromium	U	0.0100	0.00300	0.0100	mg/L	1.00	1					

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Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW395SG4-24 Project: FRNP00511 Sample ID: 677449009 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	e Batch	Method
Metals Analysis-ICP-M	S											
6020, Metals (15+) "As	Received"											
Cobalt	U	0.00100	0.000300	0.00100	mg/L	1.00	1					
Copper	J	0.000944	0.000300	0.00200	mg/L	1.00	1					
Iron	J	0.0913	0.0330	0.100	mg/L	1.00	1					
Lead	U	0.00200	0.000500	0.00200	mg/L	1.00	1					
Magnesium		11.3	0.0100	0.0300	mg/L	1.00	1					
Manganese	J	0.00361	0.00100	0.00500	mg/L	1.00	1					
Molybdenum	U	0.00100	0.000200	0.00100	mg/L	1.00						
Nickel	U	0.00200	0.000600	0.00200	mg/L	1.00						
Potassium		1.55	0.0800	0.300	mg/L	1.00						
Selenium	U	0.00500	0.00150	0.00500	mg/L	1.00						
Silver	U	0.00100	0.000300	0.00100	mg/L	1.00						
Sodium		30.8	0.0800	0.250	mg/L	1.00						
Thallium	U	0.00200	0.000600	0.00200	mg/L	1.00						
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00						
Vanadium	U	0.0200	0.00330	0.0200	mg/L	1.00						
Zinc	U	0.0200	0.00330	0.0200	mg/L	1.00						
Rhodium	U	0.00500	0.00160	0.00500	mg/L	1.00		PRB	08/10/24	2317	2647183	12
Tantalum	U	0.00500	0.00100	0.00500	mg/L	1.00	1					
Solids Analysis												
160.1, Dissolved Solids	"As Receive	ed"										
Total Dissolved Solids		214	2.38	10.0	mg/L			KLP1	07/30/24	1447	2648069	13
Spectrometric Analysis												
410.4, Chem. Oxygen D	Demand "As I	Received"										
COD	U	20.0	8.95	20.0	mg/L		1	HH2	07/31/24	1733	2647741	14
Volatile Organics												
8260D, Volatiles- full s	uite "As Rec	eived"										
1,1,1,2-Tetrachloroethane	UY2	1.00	0.333	1.00	ug/L		1	JB6	07/26/24	1439	2646976	15
1,1,1-Trichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1,2,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1,2-Trichloroethane	UY2	1.00	0.333	1.00	ug/L		1					
1,1-Dichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1					
1,2,3-Trichloropropane	U	1.00	0.333	1.00	ug/L		1					
1,2-Dibromoethane	UY2	1.00	0.333	1.00	ug/L		1					

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Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW395SG4-24 Project: FRNP00511 Sample ID: 677449009 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
Volatile Organics									
8260D, Volatiles- full s	suite "As Rec	eived"							
1,2-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloroethane	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloropropane	U	1.00	0.333	1.00	ug/L		1		
1,4-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
2-Butanone	U	5.00	1.67	5.00	ug/L		1		
2-Hexanone	UY2	5.00	1.67	5.00	ug/L		1		
4-Methyl-2-pentanone	UY2	5.00	1.67	5.00	ug/L		1		
Acetone	U	5.00	1.74	5.00	ug/L		1		
Acrolein	U	5.00	1.67	5.00	ug/L		1		
Acrylonitrile	U	5.00	1.67	5.00	ug/L		1		
Benzene	U	1.00	0.333	1.00	ug/L		1		
Bromochloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromodichloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromoform	U	1.00	0.333	1.00	ug/L		1		
Bromomethane	U	1.00	0.337	1.00	ug/L		1		
Carbon disulfide	U	5.00	1.67	5.00	ug/L		1		
Carbon tetrachloride	U	1.00	0.333	1.00	ug/L		1		
Chlorobenzene	UY2	1.00	0.333	1.00	ug/L		1		
Chloroethane	U	1.00	0.333	1.00	ug/L		1		
Chloroform	U	1.00	0.333	1.00	ug/L		1		
Chloromethane	U	1.00	0.333	1.00	ug/L		1		
Dibromochloromethane	UY2	1.00	0.333	1.00	ug/L		1		
Dibromomethane	U	1.00	0.333	1.00	ug/L		1		
Ethylbenzene	UY2	1.00	0.333	1.00	ug/L		1		
Iodomethane	U	5.00	1.67	5.00	ug/L		1		
Methylene chloride	U	5.00	0.500	5.00	ug/L		1		
Styrene	UY2	1.00	0.333	1.00	ug/L		1		
Tetrachloroethylene	UY2	1.00	0.333	1.00	ug/L		1		
Toluene	UY2	1.00	0.333	1.00	ug/L		1		
Trichloroethylene		5.29	0.333	1.00	ug/L		1		
Trichlorofluoromethane	U	1.00	0.333	1.00	ug/L		1		
Vinyl acetate	U	5.00	1.67	5.00	ug/L		1		
Vinyl chloride	U	1.00	0.333	1.00	ug/L		1		
Xylenes (total)	UY2	3.00	1.00	3.00	ug/L		1		
cis-1,2-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1		
cis-1,3-Dichloropropylene	U	1.00	0.333	1.00	ug/L		1		

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Certificate of Analysis

Report Date: October 31, 2024

DF Analyst Date Time Batch Method

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Qualifier

8260D, Volatiles- full suite "As Received"

Project: C-746-S&T Landfill Quarterly(SG24-04)

Result

8260D, Volatiles- full suite "As Received"

8260D, Volatiles- full suite "As Received"

Client Sample ID: MW395SG4-24 Project: FRNP00511 Sample ID: 677449009 Client ID: FRNP005

DL

RL

Units

PF

trans-1,2-Dichloroethylene	U	1.00	0.333	1.00	ug/	L 1		
trans-1,3-Dichloropropylene	UY2	1.00	0.333	1.00	ug/	L 1		
trans-1,4-Dichloro-2-butene	U	5.00	1.67	5.00	ug/	L 1		
The following Prep Met	thods were p	erformed:						
Method	Description	on		Analyst	Date	Tim	e Prep Bato	eh .
SW846 8011 PREP	8011 Prep			LOF	08/03/	24 1306	2647153	
SW846 3005A	ICP-MS 300	5A PREP		BB2	07/31/	24 1510	2647182	
SW846 9010C Distillation	SW846 9010			ES2	07/26/			
SW846 7470A Prep	EPA 7470A	Mercury Prep Liquio	i	JM13	07/26/	24 1100	2646458	
The following Analytic	al Methods	were performed:						
Method	Description	n				Analyst Co	mments	
1	SW846 8011							
2	SW846 8011							
3	SW846 9060	A						
4	SW846 9012	В						
5	SW846 9020	В						
6	EPA 300.0							
7	SW846 9056	A						
8	SW846 9056	A						
9	SW846 9056	A						
10	SW846 7470	Α						
11	SW846 3005	A/6020B						
12	SW846 3005	A/6020B						
13	EPA 160.1							
14	EPA 410.4							
15	SW846 8260	D						
Surrogate/Tracer Recov	ery Test				Result	Nominal	Recovery%	Acceptable Limits
1-Chloro-2-fluorobenzene	8011,	VOA Compounds Li	quid "As Received"		6.25 ug/L	6.78	92	(56%-149%)
Bromofluorobenzene	8260D	, Volatiles- full suite	"As Received"		49.4 ug/L	50.0	99	(74%-123%)

Toluene-d8

1,2-Dichloroethane-d4

Parameter

Volatile Organics

48.4 ug/L

50.2 ug/L

50.0

50.0

97

100

(76%-127%)

(77%-121%)

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW395SG4-24 Project: FRNP00511 Sample ID: 677449009 Client ID: FRNP005

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

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Certificate of Analysis

Report Date: October 31, 2024

Four Rivers Nuclear Partnership, LLC Company:

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

C-746-S&T Landfill Quarterly(SG24-04) Project:

Client Sample ID: MW395SG4-24 Sample ID: 677449010

Matrix: WG

Collect Date: 24-JUL-24 10:04 Receive Date: 25-JUL-24 Collector: Client

Project: Client ID: FRNP005

FRNP00511

Parameter	Qualifier Result	DL	RL	Units	PF I	DF	Analyst Date	Time Batch	Method
Metals Analysis-IC	CP-MS								
6020, Dissolved M	Ietals (3 Elements) "As Received"								
Barium	0.252	0.000670	0.00400	mg/L	1.00	1	PRB 08/10/24	2116 2647183	1
Chromium	U 0.0100	0.00300	0.0100	mg/L	1.00	1			
Uranium	U 0.000200	0.0000670	0.000200	mg/L	1.00	1			
The following Prep	Methods were performed:								
Method	Description		Analyst	Date	Ti	ime	Prep Batch		
SW846 3005A	ICP-MS 3005A PREP		BB2	07/31/24	15	510	2647182		
EPA 160	Laboratory Filtration		SD	07/26/24	13	322	2646414		
The following Ana	alytical Methods were performed:								
Method	Description			A	Analyst (Con	nments		
1	SW846 3005A/6020B				•				

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level DL: Detection Limit PF: Prep Factor MDA: Minimum Detectable Activity **RL**: Reporting Limit

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Certificate of Analysis

Project:

Client ID:

Report Date: October 31, 2024

FRNP00511

FRNP005

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW396SG4-24

Sample ID: 677449011

Matrix: WG

Collect Date: 24-JUL-24 10:41
Receive Date: 25-JUL-24
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
504.1/8011 Analysis o	f EDB/DBCP											
8011, VOA Compound	ds Liquid "As	Received"										
1,2-Dibromo-3-chloropropa	_	0.0193	0.00868	0.0193	ug/L	0.964	1	LOF	08/03/24	1908	2647154	2
Carbon Analysis												
9060A, Total Organic	Carbon "As R	eceived"										
Total Organic Carbon Avera	age	3.51	0.330	2.00	mg/L		1	KB3	08/19/24	1709	2657954	3
Flow Injection Analys	is											
9012B, Total Cyanide	"As Received	"										
Cyanide, Total	U	0.200	0.00167	0.200	mg/L	1.00	1	AXH3	07/26/24	1213	2646663	4
Halogen Analysis												
9020B, TOX (Organic	Halogen) "As	Received"										
Total Organic Halogens	<i>C</i> ,	42.6	3.33	10.0	ug/L		1	JS13	08/19/24	2130	2658912	5
Ion Chromatography												
300.0, Iodide in Liquid	d "As Received	d"										
Iodide	U	0.500	0.167	0.500	mg/L		1	TXT1	08/12/24	1424	2654903	6
SW846 9056A Anions	(5) "As Recei	ived"										
Bromide	W	1.09	0.0670	0.200	mg/L		1	CH6	07/25/24	1630	2646386	7
Fluoride	J	0.620	0.0330	4.00	mg/L		1					
Nitrate-N	J	0.149	0.0330	10.0	mg/L		1					
Chloride	J	56.8	0.670	250	mg/L		10	CH6	07/26/24	0756	2646386	8
Sulfate		27.5	1.33	4.00	mg/L		10					
Mercury Analysis-CV	AA											
7470, Mercury Liquid	"As Received	"										
Mercury	U	0.000200	0.0000670	0.000200	mg/L	1.00	1	JP2	07/29/24	1117	2646459	9
Metals Analysis-ICP-N	MS											
6020, Metals (15+) "A	s Received"											
Aluminum	U	0.0500	0.0193	0.0500	mg/L	1.00	1	PRB	08/10/24	2120	2647183	10
Antimony	U	0.00300	0.00100	0.00300	mg/L	1.00	1					
Arsenic	U	0.00500	0.00200	0.00500	mg/L	1.00	1					
Barium		0.353	0.000670	0.00400	mg/L	1.00	1					
Beryllium	U	0.000500	0.000200	0.000500	mg/L	1.00	1					
Boron	J	0.00561	0.00520	0.0150	mg/L	1.00	1					
Cadmium	U	0.00100	0.000300	0.00100	mg/L	1.00	1					
Calcium		29.8	0.0800	0.200	mg/L	1.00	1					
Chromium	U	0.0100	0.00300	0.0100	mg/L	1.00	1					

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Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW396SG4-24 Project: FRNP00511 Sample ID: 677449011 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Metals Analysis-ICP-M	1S											
6020, Metals (15+) "As	s Received"											
Cobalt	U	0.00100	0.000300	0.00100	mg/L	1.00	1					
Copper	J	0.000865	0.000300	0.00200	mg/L	1.00	1					
Iron	J	0.0539	0.0330	0.100	mg/L	1.00	1					
Lead	U	0.00200	0.000500	0.00200	mg/L	1.00	1					
Magnesium		13.3	0.0100	0.0300	mg/L	1.00	1					
Manganese		0.00937	0.00100	0.00500	mg/L	1.00	1					
Molybdenum	J	0.000340	0.000200	0.00100	mg/L	1.00	1					
Nickel	U	0.00200	0.000600	0.00200	mg/L	1.00	1					
Potassium		0.748	0.0800	0.300	mg/L	1.00	1					
Selenium	U	0.00500	0.00150	0.00500	mg/L	1.00	1					
Silver	U	0.00100	0.000300	0.00100	mg/L	1.00	1					
Thallium	U	0.00200	0.000600	0.00200	mg/L	1.00	1					
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00	1					
Vanadium	U	0.0200	0.00330	0.0200	mg/L	1.00	1					
Zinc	U	0.0200	0.00330	0.0200	mg/L	1.00	1					
Rhodium	U	0.00500	0.00160	0.00500	mg/L	1.00	1	PRB	08/10/24	2319	2647183	11
Tantalum	U	0.00500	0.00100	0.00500	mg/L	1.00	1					
Sodium		87.9	0.800	2.50	mg/L	1.00	10	PRB	08/11/24	1756	2647183	12
Solids Analysis												
160.1, Dissolved Solids	s "As Receive	ed"										
Total Dissolved Solids		398	2.38	10.0	mg/L			KLP1	07/30/24	1447	2648069	13
Spectrometric Analysis	1											
410.4, Chem. Oxygen I	Demand "As l	Received"										
COD	J	18.0	8.95	20.0	mg/L		1	HH2	07/31/24	1733	2647741	14
Volatile Organics					-							
8260D, Volatiles- full s	suite "As Rec	eived"										
1,1,1,2-Tetrachloroethane	UY2	1.00	0.333	1.00	ug/L		1	JB6	07/26/24	1504	2646976	15
1,1,1-Trichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1,2,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1,2-Trichloroethane	UY2	1.00	0.333	1.00	ug/L		1					
1,1-Dichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1					
1,2,3-Trichloropropane	U	1.00	0.333	1.00	ug/L		1					
1,2-Dibromoethane	UY2	1.00	0.333	1.00	ug/L		1					

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW396SG4-24 Project: FRNP00511 Sample ID: 677449011 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
Volatile Organics									
8260D, Volatiles- full s	suite "As Rec	eived"							
1,2-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloroethane	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloropropane	U	1.00	0.333	1.00	ug/L		1		
1,4-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
2-Butanone	U	5.00	1.67	5.00	ug/L		1		
2-Hexanone	UY2	5.00	1.67	5.00	ug/L		1		
4-Methyl-2-pentanone	UY2	5.00	1.67	5.00	ug/L		1		
Acetone	J	1.85	1.74	5.00	ug/L		1		
Acrolein	U	5.00	1.67	5.00	ug/L		1		
Acrylonitrile	U	5.00	1.67	5.00	ug/L		1		
Benzene	U	1.00	0.333	1.00	ug/L		1		
Bromochloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromodichloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromoform	U	1.00	0.333	1.00	ug/L		1		
Bromomethane	U	1.00	0.337	1.00	ug/L		1		
Carbon disulfide	U	5.00	1.67	5.00	ug/L		1		
Carbon tetrachloride	U	1.00	0.333	1.00	ug/L		1		
Chlorobenzene	UY2	1.00	0.333	1.00	ug/L		1		
Chloroethane	U	1.00	0.333	1.00	ug/L		1		
Chloroform	U	1.00	0.333	1.00	ug/L		1		
Chloromethane	U	1.00	0.333	1.00	ug/L		1		
Dibromochloromethane	UY2	1.00	0.333	1.00	ug/L		1		
Dibromomethane	U	1.00	0.333	1.00	ug/L		1		
Ethylbenzene	UY2	1.00	0.333	1.00	ug/L		1		
Iodomethane	U	5.00	1.67	5.00	ug/L		1		
Methylene chloride	U	5.00	0.500	5.00	ug/L		1		
Styrene	UY2	1.00	0.333	1.00	ug/L		1		
Tetrachloroethylene	UY2	1.00	0.333	1.00	ug/L		1		
Toluene	UY2	1.00	0.333	1.00	ug/L		1		
Trichloroethylene	U	1.00	0.333	1.00	ug/L		1		
Trichlorofluoromethane	U	1.00	0.333	1.00	ug/L		1		
Vinyl acetate	U	5.00	1.67	5.00	ug/L		1		
Vinyl chloride	U	1.00	0.333	1.00	ug/L		1		
Xylenes (total)	UY2	3.00	1.00	3.00	ug/L		1		
cis-1,2-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1		
cis-1,3-Dichloropropylene	U	1.00	0.333	1.00	ug/L		1		

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Certificate of Analysis

Report Date: October 31, 2024

DF Analyst Date Time Batch Method

97

101

(76%-127%)

(77%-121%)

50.0

50.0

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Qualifier

8260D, Volatiles- full suite "As Received"

Project: C-746-S&T Landfill Quarterly(SG24-04)

Result

1.00

8260D, Volatiles- full suite "As Received"

8260D, Volatiles- full suite "As Received"

Client Sample ID: MW396SG4-24 Project: FRNP00511 Sample ID: 677449011 Client ID: FRNP005

DL

0.333

RL

1.00

Units

ug/L

PF

1

trans 1,2 Diemoroethy iene	0	1.00	0.000	1.00	~B/ -			
trans-1,3-Dichloropropylene	UY2	1.00	0.333	1.00	ug/L	. 1		
trans-1,4-Dichloro-2-butene	U	5.00	1.67	5.00	ug/L	. 1		
The following Prep Met	thods were pe	erformed:						
Method	Description	1		Analyst	Date	Time	e Prep Bato	ch .
SW846 3005A	ICP-MS 3005	A PREP		BB2	07/31/2	4 1510	2647182	
SW846 8011 PREP	8011 Prep			LOF	08/03/2	4 1306	2647153	
SW846 7470A Prep	EPA 7470A N	Mercury Prep Liquid		JM13	07/26/2	4 1100	2646458	
SW846 9010C Distillation	SW846 90100	C Prep		ES2	07/26/2	4 1134	2646662	
The following Analytic	al Methods w	vere performed:						
Method	Description					Analyst Cor	mments	
1	SW846 8011					-		
2	SW846 8011							
3	SW846 9060A	Ī						
4	SW846 9012B	}						
5	SW846 9020B	}						
6	EPA 300.0							
7	SW846 9056A	1						
8	SW846 9056A	1						
9	SW846 7470A	1						
10	SW846 3005A	\/6020B						
11	SW846 3005A	\/6020B						
12	SW846 3005A	\/6020B						
13	EPA 160.1							
14	EPA 410.4							
15	SW846 8260D)						
Surrogate/Tracer Recov	ery Test				Result	Nominal	Recovery%	Acceptable Limits
1-Chloro-2-fluorobenzene	8011, V	OA Compounds Liquid "A	s Received"		6.47 ug/L	6.89	94	(56%-149%)
Bromofluorobenzene	8260D,	Volatiles- full suite "As Re	ceived"		49.1 ug/L	50.0	98	(74%-123%)

Toluene-d8

1,2-Dichloroethane-d4

Parameter

Volatile Organics

trans-1,2-Dichloroethylene

48.7 ug/L

50.6 ug/L

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW396SG4-24 Project: FRNP00511 Sample ID: 677449011 Client ID: FRNP005

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

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Certificate of Analysis

Report Date: October 31, 2024

FRNP00511

FRNP005

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW396SG4-24 Sample ID: 677449012

Matrix: WG

Collect Date: 24-JUL-24 10:41
Receive Date: 25-JUL-24
Collector: Client

	Concetor.	Citci	It								
Parameter	Qual	ifier	Result	DL	RL	U	nits	PF	DF Analyst Date	Time Batch	Method

Project:

Client ID:

Metals Analysis-ICP-MS

6020, Dissolved Metals (3 Elements) "As Received"

mg/L 0.000670 0.00400 Barium 0.351 1.00 1 PRB 08/10/24 2124 2647183 Chromium 0.0100 0.00300 0.0100 mg/L 1.00 1 Uranium 0.0002000.00006700.000200mg/L 1.00

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 160	Laboratory Filtration	SD	07/26/24	1322	2646414
SW846 3005A	ICP-MS 3005A PREP	BB2	07/31/24	1510	2647182

The following Analytical Methods were performed:

Method Description Analyst Comments

SW846 3005A/6020B

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: October 31, 2024

FRNP00511

FRNP005

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: TB3SG4-24 Sample ID: 677449013

Matrix: WATER

Collect Date: 24-JUL-24 06:25 Receive Date: 25-JUL-24 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Anal	yst Date	Time Batch	Method
504.1/8011 Analysis of	EDB/DBCP										
8011, VOA Compounds	Liquid "As	Received"									
1,2-Dibromo-3-chloropropane	U	0.0191	0.00858	0.0191	ug/L	0.953	1	LOF	08/03/24	2028 2647154	1
Volatile Organics											
8260D, Volatiles- full su	uite "As Rece	eived"									
1,1,1,2-Tetrachloroethane	UY2	1.00	0.333	1.00	ug/L		1	JB6	07/26/24	1233 2646976	5 3
1,1,1-Trichloroethane	U	1.00	0.333	1.00	ug/L		1				
1,1,2,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1				
1,1,2-Trichloroethane	UY2	1.00	0.333	1.00	ug/L		1				
1,1-Dichloroethane	U	1.00	0.333	1.00	ug/L		1				
1,1-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1				
1,2,3-Trichloropropane	U	1.00	0.333	1.00	ug/L		1				
1,2-Dibromoethane	UY2	1.00	0.333	1.00	ug/L		1				
1,2-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1				
1,2-Dichloroethane	U	1.00	0.333	1.00	ug/L		1				
1,2-Dichloropropane	U	1.00	0.333	1.00	ug/L		1				
1,4-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1				
2-Butanone	U	5.00	1.67	5.00	ug/L		1				
2-Hexanone	UY2	5.00	1.67	5.00	ug/L		1				
4-Methyl-2-pentanone	UY2	5.00	1.67	5.00	ug/L		1				
Acetone	J	2.48	1.74	5.00	ug/L		1				
Acrolein	U	5.00	1.67	5.00	ug/L		1				
Acrylonitrile	U	5.00	1.67	5.00	ug/L		1				
Benzene	U	1.00	0.333	1.00	ug/L		1				
Bromochloromethane	U	1.00	0.333	1.00	ug/L		1				
Bromodichloromethane	U	1.00	0.333	1.00	ug/L		1				
Bromoform	U	1.00	0.333	1.00	ug/L		1				
Bromomethane	U	1.00	0.337	1.00	ug/L		1				
Carbon disulfide	U	5.00	1.67	5.00	ug/L		1				
Carbon tetrachloride	U	1.00	0.333	1.00	ug/L		1				
Chlorobenzene	UY2	1.00	0.333	1.00	ug/L		1				
Chloroethane	U	1.00	0.333	1.00	ug/L		1				
Chloroform	J	0.370	0.333	1.00	ug/L		1				
Chloromethane	U	1.00	0.333	1.00	ug/L		1				
Dibromochloromethane	UY2	1.00	0.333	1.00	ug/L		1				
Dibromomethane	U	1.00	0.333	1.00	ug/L		1				
Ethylbenzene	UY2	1.00	0.333	1.00	ug/L		1				
Iodomethane	U	5.00	1.67	5.00	ug/L		1				

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: TB3SG4-24 Project: FRNP00511 Sample ID: 677449013 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF A	nalyst Date	Time Batch	Method
Volatile Organics										_
8260D, Volatiles- full st	uite "As Rece	eived"								
Methylene chloride	U	5.00	0.500	5.00	ug/L		1			
Styrene	UY2	1.00	0.333	1.00	ug/L		1			
Tetrachloroethylene	UY2	1.00	0.333	1.00	ug/L		1			
Toluene	UY2	1.00	0.333	1.00	ug/L		1			
Trichloroethylene	U	1.00	0.333	1.00	ug/L		1			
Trichlorofluoromethane	U	1.00	0.333	1.00	ug/L		1			
Vinyl acetate	U	5.00	1.67	5.00	ug/L		1			
Vinyl chloride	U	1.00	0.333	1.00	ug/L		1			
Xylenes (total)	UY2	3.00	1.00	3.00	ug/L		1			
cis-1,2-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1			
cis-1,3-Dichloropropylene	U	1.00	0.333	1.00	ug/L		1			
trans-1,2-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1			
trans-1,3-Dichloropropylene	UY2	1.00	0.333	1.00	ug/L		1			
trans-1,4-Dichloro-2-butene	U	5.00	1.67	5.00	ug/L		1			
The following Prep Met	hods were pe	erformed:								
Method	Description	1		Analyst	Date	,	Time	Prep Batch		
SW846 8011 PREP	8011 Prep			LOF	08/03/24		1306	2647153		

The following Analytical Methods were performed:

_	•
Method	Description
1	SW846 8011
2	SW846 8011
3	SW846 8260D

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1-Chloro-2-fluorobenzene	8011, VOA Compounds Liquid "As Received"	6.58 ug/L	6.81	97	(56%-149%)
Bromofluorobenzene	8260D, Volatiles- full suite "As Received"	50.6 ug/L	50.0	101	(74%-123%)
1,2-Dichloroethane-d4	8260D, Volatiles- full suite "As Received"	48.8 ug/L	50.0	98	(76%-127%)
Toluene-d8	8260D, Volatiles- full suite "As Received"	50.6 ug/L	50.0	101	(77%-121%)

Analyst Comments

Notes:

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: TB3SG4-24 Project: FRNP00511 Sample ID: 677449013 Client ID: FRNP005

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

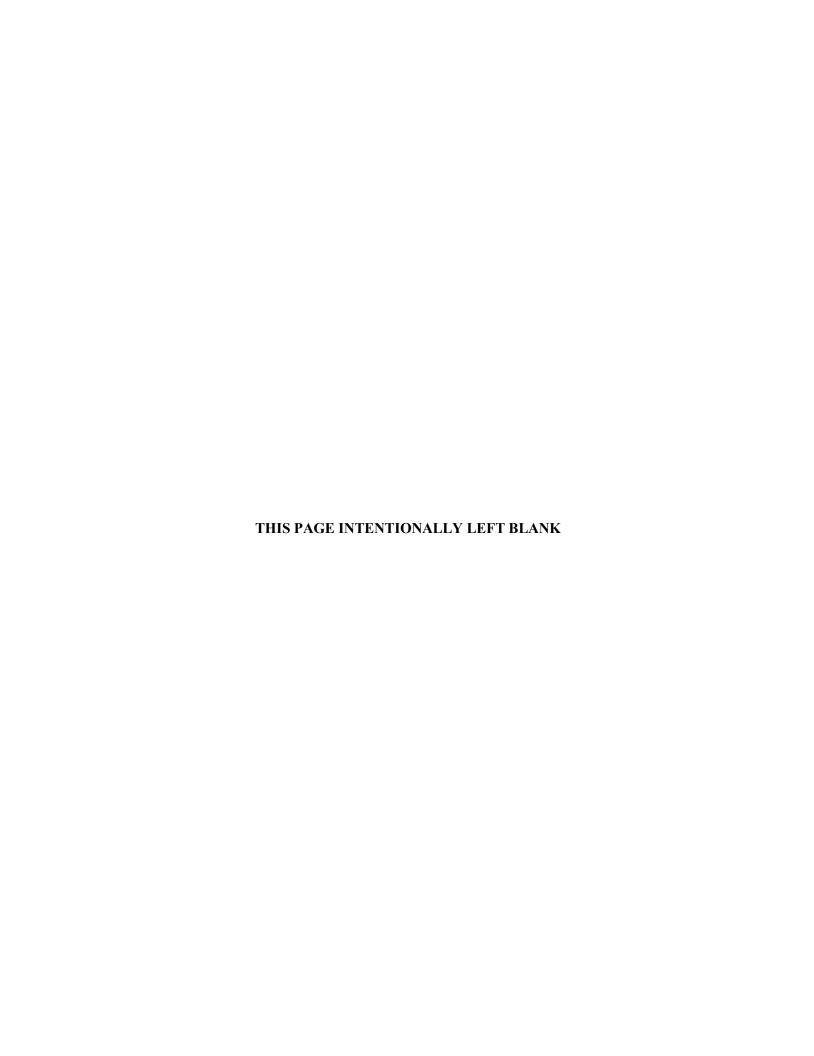
Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit



ATTACHMENT C2 GEL LABORATORIES CERTIFICATE OF ANALYSIS



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Company: Four Rivers Nuclear Partnership,

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Kevil, Kentucky 42053 Report Date: October 31, 2024

Project: Client ID: FRNP00511 FRNP005

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW222SG4-24 Sample ID: 677670001 Matrix: WG

Matrix: WG Collect Date: 25-JUL-24

Receive Date: 26-JUL-24
Collector: Client

Parameter	Qualifier	Result U	ncertainty	MDC	TPU	RL	Units	PF	DF Analys	t Date	Time	Batch	Mtd.
Rad Alpha Spec Ana	alysis												
AlphaSpec Ra226,	Liquid "As Rece	ived"											
Radium-226	U	0.168	+/-0.380	0.599	+/-0.380	5.00	pCi/L		CM4	08/22/24	0837	2659829	1
Th-01-RC M, Th Is	otopes, Liquid "	As Received	"										
Thorium-230	U	0.888	+/-1.03	1.51	+/-1.04	50.0	pCi/L		AG2	08/16/24	1041	2646982	2 2
Rad Gas Flow Propo 905.0 Mod, Sr90, 1		U											
Strontium-90	U	-2.03	+/-2.60	5.34	+/-2.60	8.00	pCi/L		JE1	08/15/24	1415	2650343	3
9310,Alpha/Beta A	ctivity, liquid "A	s Received"											
Alpha	U	2.84	+/-3.67	6.15	+/-3.70	15.0	pCi/L		НН3	08/08/24	1333	2650299	4
Beta	U	-2.94	+/-6.88	13.1	+/-6.88	50.0	pCi/L						
Rad Liquid Scintilla 906.0 Mod, Tritium	•	s Received"											
Tritium	U	-9.46	+/-158	285	+/-158	300	pCi/L		KXA1	08/21/24	0040	2652460	5
Tc-02-RC-MOD, T	c99, Liquid "As	Received"											
Technetium-99	U	5.16	+/-10.4	17.9	+/-10.4	25.0	pCi/L		GS3	08/13/24	1719	2647382	2 6

The following Analytical Methods were performed

Method	Description
1	Eichrom Industries, AN-1418
2	DOE EML HASL-300, Th-01-RC Modified
3	EPA 905.0 Modified/DOE RP501 Rev. 1 Modified
4	EPA 900.0/SW846 9310
5	EPA 906.0 Modified
6	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	AlphaSpec Ra226, Liquid "As Received"	2659829	92.1	(30%-110%)
Thorium-229 Tracer	Th-01-RC M, Th Isotopes, Liquid "As Received"	2646982	74.3	(30%-110%)
Strontium Carrier	905.0 Mod, Sr90, liquid "As Received"	2650343	74.9	(30%-110%)
Technetium-99m Tracer	Tc-02-RC-MOD, Tc99, Liquid "As Received"	2647382	97.6	(30%-110%)

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW222SG4-24 Project: FRNP00511 Sample ID: 677670001 Project: FRNP005

Parameter Qualifier Result Uncertainty MDC TPU RL Units PF DF Analyst Date Time Batch Mtd.
Surrogate/Tracer Recovery Test Batch ID Recovery% Acceptable Limits

Surrogate/Tracer Reco

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Mtd.: Method
DL: Detection Limit PF: Prep Factor
Lc/LC: Critical Level RL: Reporting Limit

MDA: Minimum Detectable Activity TPU: Total Propagated Uncertainty

MDC: Minimum Detectable Concentration

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Company: Four Rivers Nuclear Partnership,

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Kevil, Kentucky 42053 Report Date: October 31, 2024

Project:

Client ID:

FRNP00511

FRNP005

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW223SG4-24
Sample ID: 677670003
Matrix: WG
Collect Date: 25-JUL-24
Receive Date: 26-IIII -24

Receive Date: 26-JUL-24
Collector: Client

Parameter	Qualifier	Result Unc	ertainty	MDC	TPU	RL	Units	PF	DF Analys	t Date	Time	Batch	Mtd.
Rad Alpha Spec Anal	•												
AlphaSpec Ra226, L	iquid "As Rece	rived"											
Radium-226	U	0.241	+/-0.444	0.692	+/-0.445	5.00	pCi/L		CM4	08/22/24	0837	2659829	1
Th-01-RC M, Th Iso	topes, Liquid ".	As Received"											
Thorium-230	U	-0.101	+/-0.621	1.49	+/-0.621	50.0	pCi/L		AG2	08/16/24	1041	2646982	2
Rad Gas Flow Propor 905.0 Mod, Sr90, liq		O											
Strontium-90	U	-0.666	+/-2.29	4.59	+/-2.29	8.00	pCi/L		JE1	08/15/24	1415	2650343	3
9310,Alpha/Beta Act	tivity, liquid "A	s Received"											
Alpha	U	1.68	+/-3.78	7.27	+/-3.79	15.0	pCi/L		НН3	08/08/24	1333	2650299	4
Beta	U	9.73	+/-6.58	10.2	+/-6.78	50.0	pCi/L						
Rad Liquid Scintillati 906.0 Mod, Tritium	•	s Received"											
Tritium	U	41.0	+/-163	288	+/-164	300	pCi/L		KXA1	08/21/24	0117	2652460	5
Tc-02-RC-MOD, Tc	99, Liquid "As	Received"											
Technetium-99	U	8.67	+/-11.0	18.6	+/-11.0	25.0	pCi/L		GS3	08/13/24	1735	2647382	2 6

The following Analytical Methods were performed

Method	Description
1	Eichrom Industries, AN-1418
2	DOE EML HASL-300, Th-01-RC Modified
3	EPA 905.0 Modified/DOE RP501 Rev. 1 Modified
4	EPA 900.0/SW846 9310
5	EPA 906.0 Modified
6	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	AlphaSpec Ra226, Liquid "As Received"	2659829	95.6	(30%-110%)
Thorium-229 Tracer	Th-01-RC M, Th Isotopes, Liquid "As Received"	2646982	72.5	(30%-110%)
Strontium Carrier	905.0 Mod, Sr90, liquid "As Received"	2650343	70.6	(30%-110%)
Technetium-99m Tracer	Tc-02-RC-MOD, Tc99, Liquid "As Received"	2647382	94.4	(30%-110%)

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

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5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW223SG4-24 Project: FRNP00511 Sample ID: Client ID: FRNP005 677670003

Parameter Result Uncertainty Units PF DF Analyst Date Time Batch Mtd. Qualifier MDC **TPU** RL**Acceptable Limits** Batch ID Recovery%

Surrogate/Tracer Recovery

Test

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Mtd.: Method DL: Detection Limit PF: Prep Factor Lc/LC: Critical Level **RL**: Reporting Limit

MDA: Minimum Detectable Activity TPU: Total Propagated Uncertainty

MDC: Minimum Detectable Concentration

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Kevil, Kentucky 42053 Report Date: October 31, 2024

FRNP00511

FRNP005

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW224DSG4-24 Project:
Sample ID: 677670005 Client ID:
Matrix: WG

Collect Date: WG
Receive Date: 25-JUL-24
Collector: Client

Parameter	Qualifier	Result Un	certainty	MDC	TPU	RL	Units	PF	DF Analys	t Date T	Гіте	Batch	Mtd.
Rad Alpha Spec Anal	lysis												
AlphaSpec Ra226, I	Liquid "As Rece	rived"											
Radium-226	U	0.113	+/-0.313	0.338	+/-0.313	5.00	pCi/L		CM4	08/22/24 0)837	2659829	1
Th-01-RC M, Th Iso	otopes, Liquid ".	As Received"											
Thorium-230	U	1.33	+/-1.32	1.86	+/-1.34	50.0	pCi/L		AG2	08/16/24 1	1041	2646982	2
Rad Gas Flow Propor		_											
Strontium-90	U	-0.589	+/-2.73	5.18	+/-2.73	8.00	pCi/L		JE1	08/15/24 1	1415	2650343	3
9310,Alpha/Beta Ac	rtivity, liquid "A	s Received"											
Alpha	U	-0.292	+/-3.09	7.43	+/-3.09	15.0	pCi/L		НН3	08/08/24 1	1333	2650299	4
Beta	U	7.38	+/-5.55	8.68	+/-5.69	50.0	pCi/L						
Rad Liquid Scintillati 906.0 Mod, Tritium	•	s Received"											
Tritium	U	63.2	+/-169	296	+/-170	300	pCi/L		KXA1	08/21/24 0)154	2652460	5
Tc-02-RC-MOD, To	99, Liquid "As	Received"											
Technetium-99	U	5.55	+/-10.9	18.7	+/-10.9	25.0	pCi/L		GS3	08/13/24 1	1752	2647382	6
		_											

The following Analytical Methods were performed Method Description

Method	Description
1	Eichrom Industries, AN-1418
2	DOE EML HASL-300, Th-01-RC Modified
3	EPA 905.0 Modified/DOE RP501 Rev. 1 Modified
4	EPA 900.0/SW846 9310
5	EPA 906.0 Modified
6	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	AlphaSpec Ra226, Liquid "As Received"	2659829	91.2	(30%-110%)
Thorium-229 Tracer	Th-01-RC M, Th Isotopes, Liquid "As Received"	2646982	72.2	(30%-110%)
Strontium Carrier	905.0 Mod, Sr90, liquid "As Received"	2650343	79.1	(30%-110%)
Technetium-99m Tracer	Tc-02-RC-MOD, Tc99, Liquid "As Received"	2647382	93.6	(30%-110%)

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

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5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW224DSG4-24 Project: FRNP00511 Sample ID: 677670005 Client ID: FRNP005

Parameter Qualifier Result Uncertainty MDC TPU RL Units PF DF Analyst Date Time Batch Mtd.
Surrogate/Tracer Recovery Test Batch ID Recovery% Acceptable Limits

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Mtd.: Method
DL: Detection Limit PF: Prep Factor
Lc/LC: Critical Level RL: Reporting Limit

MDA: Minimum Detectable Activity TPU: Total Propagated Uncertainty

MDC: Minimum Detectable Concentration

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Company: Four Rivers Nuclear Partnership,

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5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Project:

Client ID:

FRNP00511

FRNP005

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW224SG4-24
Sample ID: 677670007
Matrix: WG
Collect Date: 25-JUL-24
Receive Date: 26-IUL-24

Receive Date: 26-JUL-24
Collector: Client

Parameter	Qualifier	Result Un	certainty	MDC	TPU	RL	Units	PF	DF Analys	t Date	Time	Batch 1	Mtd.
Rad Alpha Spec Ana	lysis												
AlphaSpec Ra226, I	Liquid "As Rece	ived"											
Radium-226	U	-0.00834	+/-0.299	0.690	+/-0.299	5.00	pCi/L		CM4	08/22/24	0837	2659829	1
Th-01-RC M, Th Iso	otopes, Liquid "	As Received'	,										
Thorium-230	U	0.385	+/-0.864	1.54	+/-0.869	50.0	pCi/L		AG2	08/16/24	1041	2646982	2
Rad Gas Flow Propo 905.0 Mod, Sr90, li		_											
Strontium-90	U	1.20	+/-1.63	2.81	+/-1.65	8.00	pCi/L		JE1	08/16/24	1332	2650343	3
9310,Alpha/Beta Ad	ctivity, liquid "A	s Received"											
Alpha	U	4.74	+/-4.60	6.95	+/-4.66	15.0	pCi/L		НН3	08/08/24	1333	2650299	4
Beta	U	3.98	+/-5.13	8.71	+/-5.18	50.0	pCi/L						
Rad Liquid Scintillat 906.0 Mod, Tritium	•	s Received"											
Tritium	U	1.99	+/-164	296	+/-164	300	pCi/L		KXA1	08/21/24	0348	2652460	5
Tc-02-RC-MOD, To	c99, Liquid "As	Received"											
Technetium-99	U	-4.03	+/-9.86	17.9	+/-9.86	25.0	pCi/L		GS3	08/13/24	1809	2647382	6
The following Apply	tical Mathada y	uana nanfann	hon										

The following Analytical Methods were performed

Method	Description
1	Eichrom Industries, AN-1418
2	DOE EML HASL-300, Th-01-RC Modified
3	EPA 905.0 Modified/DOE RP501 Rev. 1 Modified
4	EPA 900.0/SW846 9310
5	EPA 906.0 Modified
6	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	AlphaSpec Ra226, Liquid "As Received"	2659829	93.8	(30%-110%)
Thorium-229 Tracer	Th-01-RC M, Th Isotopes, Liquid "As Received"	2646982	77	(30%-110%)
Strontium Carrier	905.0 Mod, Sr90, liquid "As Received"	2650343	77	(30%-110%)
Technetium-99m Tracer	Tc-02-RC-MOD, Tc99, Liquid "As Received"	2647382	97.2	(30%-110%)

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Kevil, Kentucky 42053 Report Date: October 31, 2024

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW224SG4-24 Project: FRNP00511 Sample ID: Client ID: FRNP005 677670007

Parameter Result Uncertainty Units PF DF Analyst Date Time Batch Mtd. Qualifier MDC **TPU** RLBatch ID Recovery% Acceptable Limits

Surrogate/Tracer Recovery

Test

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Mtd.: Method DL: Detection Limit PF: Prep Factor Lc/LC: Critical Level **RL**: Reporting Limit

MDA: Minimum Detectable Activity TPU: Total Propagated Uncertainty

MDC: Minimum Detectable Concentration

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5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Project:

Client ID:

FRNP00511

FRNP005

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: FB1SG4-24
Sample ID: 677670009
Matrix: WATER

Collect Date: 25-JUL-24
Receive Date: 26-JUL-24
Collector: Client

Parameter	Qualifier	Result Un	certainty	MDC	TPU	RL	Units	PF	DF Analys	t Date Ti	me	Batch	Mtd.
Rad Alpha Spec Analys	sis												
AlphaSpec Ra226, Liq	quid "As Rece	ived"											
Radium-226	U	0.352	+/-0.536	0.798	+/-0.537	5.00	pCi/L		CM4	08/22/24 08	37	2659829	1
Th-01-RC M, Th Isoto	pes, Liquid".	As Received'	,										
Thorium-230	U	0.868	+/-1.11	1.75	+/-1.12	50.0	pCi/L		AG2	08/16/24 10	41	2646982	2 2
Rad Gas Flow Proporti 905.0 Mod, Sr90, liqu		O											
Strontium-90	U	0.226	+/-2.31	4.35	+/-2.31	8.00	pCi/L		JE1	08/15/24 14	15	2650343	3
9310,Alpha/Beta Activ	vity, liquid "A	s Received"											
Alpha	U	3.41	+/-3.42	5.05	+/-3.47	15.0	pCi/L		НН3	08/08/24 13	33	2650299	4
Beta	U	-5.47	+/-5.21	11.0	+/-5.21	50.0	pCi/L						
Rad Liquid Scintillation 906.0 Mod, Tritium D	•	s Received"											
Tritium	U	38.5	+/-164	290	+/-164	300	pCi/L		KXA1	08/21/24 04	25	2652460) 5
Tc-02-RC-MOD, Tc99	9, Liquid "As	Received"											
Technetium-99	U	-4.15	+/-9.78	17.8	+/-9.78	25.0	pCi/L		GS3	08/13/24 18	25	2647382	6
TDL . C. II	13641												

The following Analytical Methods were performed

Method	Description
1	Eichrom Industries, AN-1418
2	DOE EML HASL-300, Th-01-RC Modified
3	EPA 905.0 Modified/DOE RP501 Rev. 1 Modified
4	EPA 900.0/SW846 9310
5	EPA 906.0 Modified
6	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	AlphaSpec Ra226, Liquid "As Received"	2659829	90	(30%-110%)
Thorium-229 Tracer	Th-01-RC M, Th Isotopes, Liquid "As Received"	2646982	77.6	(30%-110%)
Strontium Carrier	905.0 Mod, Sr90, liquid "As Received"	2650343	74.9	(30%-110%)
Technetium-99m Tracer	Tc-02-RC-MOD, Tc99, Liquid "As Received"	2647382	96.9	(30%-110%)

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Company: Four Rivers Nuclear Partnership,

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5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: FB1SG4-24 Project: FRNP00511 Sample ID: Client ID: FRNP005 677670009

Parameter Result Uncertainty Units PF DF Analyst Date Time Batch Mtd. Qualifier MDC **TPU** RLBatch ID Recovery% **Acceptable Limits**

Surrogate/Tracer Recovery

Test

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Mtd.: Method DL: Detection Limit PF: Prep Factor Lc/LC: Critical Level **RL**: Reporting Limit

MDA: Minimum Detectable Activity TPU: Total Propagated Uncertainty

MDC: Minimum Detectable Concentration

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Company: Four Rivers Nuclear Partnership,

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5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Project:

Client ID:

FRNP00511

FRNP005

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: RI1SG4-24 Sample ID: 677670010 Matrix: WATER Collect Date: 25-JUL-24 Receive Date: 26-IIII -24

Receive Date: 26-JUL-24
Collector: Client

Parameter	Qualifier	Result Unce	ertainty	MDC	TPU	RL	Units	PF	DF Analys	t Date	Time	Batch 1	Mtd.
Rad Alpha Spec Analysis	S												
AlphaSpec Ra226, Liqu	iid "As Rece	rived"											
Radium-226	U	0.207	+/-0.431	0.714	+/-0.431	5.00	pCi/L		CM4	08/22/24	0837	2659829	1
Th-01-RC M, Th Isotop	es, Liquid ".	'As Received"											
Thorium-230	U	1.49	+/-1.21	1.53	+/-1.23	50.0	pCi/L		AG2	08/16/24	1041	2646982	2
Rad Gas Flow Proportio 905.0 Mod, Sr90, liquid		_											
Strontium-90	U	3.51	+/-3.45	5.72	+/-3.50	8.00	pCi/L		JE1	08/15/24	1415	2650343	3
9310,Alpha/Beta Activi	ty, liquid "A	s Received"											
Alpha	U	-1.01	+/-3.36	8.53	+/-3.36	15.0	pCi/L		НН3	08/08/24	1625	2650299	4
Beta	U	0.746	+/-4.47	8.38	+/-4.47	50.0	pCi/L						
Rad Liquid Scintillation 906.0 Mod, Tritium Dis		s Received"											
Tritium	U	119	+/-172	293	+/-173	300	pCi/L		KXA1	08/21/24	0502	2652460	5
Tc-02-RC-MOD, Tc99,	Liquid "As	Received"											
Technetium-99	U	2.04	+/-9.92	17.4	+/-9.92	25.0	pCi/L		GS3	08/13/24	1842	2647382	6
The fellowing Amelytical	1 3 / 1 - 1 1	c											

The following Analytical Methods were performed

Method	Description
1	Eichrom Industries, AN-1418
2	DOE EML HASL-300, Th-01-RC Modified
3	EPA 905.0 Modified/DOE RP501 Rev. 1 Modified
4	EPA 900.0/SW846 9310
5	EPA 906.0 Modified
6	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	AlphaSpec Ra226, Liquid "As Received"	2659829	97.4	(30%-110%)
Thorium-229 Tracer	Th-01-RC M, Th Isotopes, Liquid "As Received"	2646982	79.7	(30%-110%)
Strontium Carrier	905.0 Mod, Sr90, liquid "As Received"	2650343	77	(30%-110%)
Technetium-99m Tracer	Tc-02-RC-MOD, Tc99, Liquid "As Received"	2647382	99.4	(30%-110%)

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: Project: RI1SG4-24 FRNP00511 Sample ID: Client ID: FRNP005 677670010

Parameter Result Uncertainty Units PF DF Analyst Date Time Batch Mtd. Qualifier MDC **TPU** RL

Batch ID Recovery% Acceptable Limits Surrogate/Tracer Recovery Test

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Mtd.: Method DL: Detection Limit PF: Prep Factor Lc/LC: Critical Level **RL**: Reporting Limit

MDA: Minimum Detectable Activity TPU: Total Propagated Uncertainty

MDC: Minimum Detectable Concentration

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Certificate of Analysis

Project:

Client ID:

Report Date: October 31, 2024

FRNP00511

FRNP005

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW222SG4-24

Sample ID: 677670001

Matrix: WG

Collect Date: 25-JUL-24 08:18
Receive Date: 26-JUL-24
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time B	atch	Method
504.1/8011 Analysis of	EDB/DBCP											
8011, VOA Compound	s Liquid "As	Received"										
1,2-Dibromo-3-chloropropan	e U	0.0191	0.00859	0.0191	ug/L	0.954	1	LOF	08/03/24	2058 26	47154	2
Carbon Analysis												
9060A, Total Organic O	Carbon "As R	eceived"										
Total Organic Carbon Averag		0.395	0.330	2.00	mg/L		1	KB3	08/19/24	1726 26	57964	3
Flow Injection Analysis	8											
9012B, Total Cyanide "		"										
Cyanide, Total	U	0.200	0.00167	0.200	mg/L	1.00	1	KLP1	07/31/24	1833 26	47072	4
Halogen Analysis	C		******		8		_					•
9020B, TOX (Organic)	Halogan) "As	Pacaivad"										
Total Organic Halogens	Halogell) As	17.1	3.33	10.0	ug/L		1	JS13	08/21/24	1456 26	60465	5
Ion Chromatography		17.1	3.33	10.0	ug/L		1	3313	06/21/24	1430 20	00403	3
	"As Dansira	.1 "										
300.0, Iodide in Liquid Iodide			0.167	0.500	/T		1	TVT1	00/12/24	1520 20	5 1000	_
SW846 9056A Anions	U (5) "As Passi	0.500	0.167	0.300	mg/L		1	TXT1	08/12/24	1529 26	34900	6
Bromide	(3) As Rece	0.398	0.0670	0.200	mg/L		1	СН6	07/26/24	1226 26	16071	7
Fluoride	*J	0.398	0.0330	4.00	mg/L		1	СПО	07/20/24	1220 20	40674	,
Nitrate-N	J	1.02	0.0330	10.0	mg/L mg/L		1					
Sulfate	v	12.5	0.133	0.400	mg/L		1					
Chloride	J	32.3	0.335	250	mg/L		5	CH6	07/27/24	0236 26	46874	8
Mercury Analysis-CVA	λA											
7470, Mercury Liquid "	'As Received	"										
Mercury	U	0.000200	0.0000670	0.000200	mg/L	1.00	1	JP2	07/30/24	1438 26	47195	9
Metals Analysis-ICP-M	IS											
6020, Metals (15+) "As												
Aluminum	U	0.0500	0.0193	0.0500	mg/L	1.00	1	PRB	08/21/24	1517 26	47181	10
Antimony	U	0.00300	0.00100	0.00300	mg/L	1.00	1					
Arsenic	U	0.00500	0.00200	0.00500	mg/L	1.00	1					
Barium		0.281	0.000670	0.00400	mg/L	1.00						
Beryllium	U	0.000500	0.000200	0.000500	mg/L	1.00						
Boron	J	0.0129	0.00520	0.0150	mg/L	1.00						
Calaium	U	0.00100	0.000300	0.00100	mg/L	1.00						
Calcium Chromium	J	21.1 0.00349	0.0800 0.00300	0.200 0.0100	mg/L mg/L	1.00 1.00						
Cinolliulii	J	0.00349	0.00300	0.0100	mg/L	1.00	1					

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW222SG4-24 Project: FRNP00511 Sample ID: 677670001 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time Batch	Method
Metals Analysis-ICP-N	MS										
6020, Metals (15+) "A	s Received"										
Cobalt	J	0.000516	0.000300	0.00100	mg/L	1.00	1				
Copper	J	0.00108	0.000300	0.00200	mg/L	1.00	1				
Iron	U	0.100	0.0330	0.100	mg/L	1.00	1				
Lead	U	0.00200	0.000500	0.00200	mg/L	1.00	1				
Magnesium		9.33	0.0100	0.0300	mg/L	1.00	1				
Manganese		0.00769	0.00100	0.00500	mg/L	1.00	1				
Molybdenum		0.00484	0.000200	0.00100	mg/L	1.00					
Nickel		0.0446	0.000600	0.00200	mg/L	1.00	1				
Potassium		0.808	0.0800	0.300	mg/L	1.00	1				
Selenium	J	0.00173	0.00150	0.00500	mg/L	1.00	1				
Silver	U	0.00100	0.000300	0.00100	mg/L	1.00	1				
Sodium		46.3	0.0800	0.250	mg/L	1.00	1				
Thallium	U	0.00200	0.000600	0.00200	mg/L	1.00	1				
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00					
Vanadium	J	0.00474	0.00330	0.0200	mg/L	1.00					
Zinc	J	0.00850	0.00330	0.0200	mg/L	1.00					
Rhodium	U	0.00500	0.00160	0.00500	mg/L	1.00		PRB	08/21/24	1048 264718	11
Tantalum	U	0.00500	0.00100	0.00500	mg/L	1.00	1				
Solids Analysis											
160.1, Dissolved Solid	s "As Receive	ed"									
Total Dissolved Solids		218	2.38	10.0	mg/L			KLP1	08/01/24	1450 264987	7 12
Spectrometric Analysis	S										
410.4, Chem. Oxygen	Demand "As l	Received"									
COD	U	20.0	8.95	20.0	mg/L		1	HH2	07/31/24	1733 264774	13
Volatile Organics											
8260D, Volatiles- full	suite "As Rec	eived"									
1,1,1,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1	JB6	07/29/24	1400 2647927	7 14
1,1,1-Trichloroethane	U	1.00	0.333	1.00	ug/L		1				
1,1,2,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1				
1,1,2-Trichloroethane	U	1.00	0.333	1.00	ug/L		1				
1,1-Dichloroethane	U	1.00	0.333	1.00	ug/L		1				
1,1-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1				
1,2,3-Trichloropropane	U	1.00	0.333	1.00	ug/L		1				
1,2-Dibromoethane	U	1.00	0.333	1.00	ug/L		1				

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Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW222SG4-24 Project: FRNP00511 Sample ID: 677670001 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
Volatile Organics									
8260D, Volatiles- full s	uite "As Rec	eived"							
1,2-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloroethane	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloropropane	U	1.00	0.333	1.00	ug/L		1		
1,4-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
2-Butanone	U	5.00	1.67	5.00	ug/L		1		
2-Hexanone	U	5.00	1.67	5.00	ug/L		1		
4-Methyl-2-pentanone	U	5.00	1.67	5.00	ug/L		1		
Acetone	U	5.00	1.74	5.00	ug/L		1		
Acrolein	U	5.00	1.67	5.00	ug/L		1		
Acrylonitrile	U	5.00	1.67	5.00	ug/L		1		
Benzene	U	1.00	0.333	1.00	ug/L		1		
Bromochloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromodichloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromoform	U	1.00	0.333	1.00	ug/L		1		
Bromomethane	U	1.00	0.337	1.00	ug/L		1		
Carbon disulfide	U	5.00	1.67	5.00	ug/L		1		
Carbon tetrachloride	U	1.00	0.333	1.00	ug/L		1		
Chlorobenzene	U	1.00	0.333	1.00	ug/L		1		
Chloroethane	U	1.00	0.333	1.00	ug/L		1		
Chloroform	U	1.00	0.333	1.00	ug/L		1		
Chloromethane	U	1.00	0.333	1.00	ug/L		1		
Dibromochloromethane	U	1.00	0.333	1.00	ug/L		1		
Dibromomethane	U	1.00	0.333	1.00	ug/L		1		
Ethylbenzene	U	1.00	0.333	1.00	ug/L		1		
Iodomethane	U	5.00	1.67	5.00	ug/L		1		
Methylene chloride	U	5.00	0.500	5.00	ug/L		1		
Styrene	U	1.00	0.333	1.00	ug/L		1		
Tetrachloroethylene	U	1.00	0.333	1.00	ug/L		1		
Toluene	U	1.00	0.333	1.00	ug/L		1		
Trichloroethylene	U	1.00	0.333	1.00	ug/L		1		
Trichlorofluoromethane	U	1.00	0.333	1.00	ug/L		1		
Vinyl acetate	U	5.00	1.67	5.00	ug/L		1		
Vinyl chloride	U	1.00	0.333	1.00	ug/L		1		
Xylenes (total)	U	3.00	1.00	3.00	ug/L		1		
cis-1,2-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1		
cis-1,3-Dichloropropylene	U	1.00	0.333	1.00	ug/L		1		

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Certificate of Analysis

Report Date: October 31, 2024

DF Analyst Date Time Batch Method

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Qualifier

Project: C-746-S&T Landfill Quarterly(SG24-04)

Result

Client Sample ID: MW222SG4-24 Project: FRNP00511 Sample ID: 677670001 Client ID: FRNP005

DL

RL

Units

PF

8260D, Volatiles- full s	uite "As Re	ceived"							
trans-1,2-Dichloroethylene	U U	1.00	0.333	;	1.00	ug/L	1		
trans-1,3-Dichloropropylene	U	1.00	0.333		1.00	ug/L	1		
trans-1,4-Dichloro-2-butene	U	5.00	1.67		5.00	ug/L	1		
The following Prep Met	thods were 1	performed:							
Method	Description	on		Analy	rst	Date	Tim	ne Prep Bato	ch
SW846 8011 PREP	8011 Prep			LOF		08/03/24	1306	5 2647153	
SW846 7470A Prep	EPA 7470A	Mercury Prep Li	quid	JM13		07/29/24	1115	2647192	
SW846 3005A	ICP-MS 300)5A PREP		BB2		08/14/24	1505	2647179	
SW846 9010C Distillation	SW846 9010	0C Prep		ES2		07/31/24	1157	2647071	
The following Analytic	al Methods	were perform	ed:						
Method	Descriptio	n					Analyst Co	mments	
1	SW846 8011	l							
2	SW846 8011	l.							
3	SW846 9060)A							
4	SW846 9012	2B							
5	SW846 9020)B							
6	EPA 300.0								
7	SW846 9056	óΑ							
8	SW846 9056	óΑ							
9	SW846 7470)A							
10	SW846 3005	5A/6020B							
11	SW846 3005	5A/6020B							
12	EPA 160.1								
13	EPA 410.4								
14	SW846 8260)D							
Surrogate/Tracer Recov	ery Test	į			Re	sult	Nominal	Recovery%	Acceptable Limits
1-Chloro-2-fluorobenzene	8011,	VOA Compound	s Liquid "As Received"		6.44	ug/L	6.81	95	(56%-149%)
Bromofluorobenzene	8260E), Volatiles- full s	uite "As Received"			ug/L	50.0	98	(74%-123%)
1,2-Dichloroethane-d4	8260Γ), Volatiles- full s	uite "As Received"		48.7	ug/L	50.0	97	(76%-127%)
Toluene-d8	8260Γ), Volatiles- full s	uite "As Received"		49.7	ug/L	50.0	99	(77%-121%)

Notes:

Parameter

Volatile Organics

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW222SG4-24 Project: FRNP00511 Sample ID: 677670001 Client ID: FRNP005

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW222SG4-24 Sample ID: 677670002

Matrix: WG

Collect Date: 25-JUL-24 08:18
Receive Date: 26-JUL-24
Collector: Client

Client ID: FRNP005

FRNP00511

Project:

Parameter	Qualifier Result	DL	RL	Units	PF DF	Analyst Date	Time Batch	Method
Metals Analysis-IC	P-MS							
6020, Dissolved M	etals (3 Elements) "As Received"							
Barium	0.279	0.000670	0.00400	mg/L	1.00 1	PRB 08/21/24	1543 2647181	1
Chromium	U 0.0100	0.00300	0.0100	mg/L	1.00 1			
Uranium	U 0.000200	0.0000670	0.000200	mg/L	1.00 1			
The following Prep	Methods were performed:							
Method	Description		Analyst	Date	Time	e Prep Batch	ļ	
EPA 160	Laboratory Filtration		SD	07/26/24	1321	2647033		
SW846 3005A	ICP-MS 3005A PREP		BB2	08/14/24	1505	2647179		
The following Ana	alytical Methods were performed:							
Method	Description			A	Analyst Co	mments		
1	SW846 3005A/6020B				•			

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

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Certificate of Analysis

Project:

Client ID:

Report Date: October 31, 2024

FRNP00511

FRNP005

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW223SG4-24

Sample ID: 677670003

Matrix: WG

Collect Date: 25-JUL-24 07:33
Receive Date: 26-JUL-24
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time Batch	Method
504.1/8011 Analysis	of EDB/DBCP										
8011, VOA Compou	nds Liquid "As	Received"									
1,2-Dibromo-3-chloroproj	pane U	0.0187	0.00842	0.0187	ug/L	0.936	1	LOF	08/03/24	2229 264715	4 2
Carbon Analysis											
9060A, Total Organi	c Carbon "As R	eceived"									
Total Organic Carbon Ave	erage J	0.455	0.330	2.00	mg/L		1	KB3	08/19/24	1903 265796	4 3
Flow Injection Analy	/sis										
9012B, Total Cyanid	le "As Received	"									
Cyanide, Total	U	0.200	0.00167	0.200	mg/L	1.00	1	KLP1	07/31/24	1836 264707	2 4
Halogen Analysis											
9020B, TOX (Organ	ic Halogen) "As	Received"									
Total Organic Halogens	J	7.18	3.33	10.0	ug/L		1	JS13	08/21/24	1725 266046	5 5
Ion Chromatography											
300.0, Iodide in Liqu	id "As Received	d"									
Iodide	U	0.500	0.167	0.500	mg/L		1	TXT1	08/12/24	1607 265490	6 6
SW846 9056A Anion	ns (5) "As Recei	ived"									
Bromide		0.405	0.0670	0.200	mg/L		1	CH6	07/26/24	1257 264687	4 7
Fluoride	*J	0.202	0.0330	4.00	mg/L		1				
Nitrate-N	J	0.897	0.0330	10.0	mg/L		1				
Sulfate		14.5	0.133	0.400	mg/L		1				
Chloride	J	35.9	0.335	250	mg/L		5	CH6	07/27/24	0409 264687	4 8
Mercury Analysis-C											
7470, Mercury Liqui	d "As Received	"									
Mercury	U	0.000200	0.0000670	0.000200	mg/L	1.00	1	JP2	07/30/24	1446 264719	5 9
Metals Analysis-ICP	-MS										
6020, Metals (15+) "	As Received"										
Aluminum	U	0.0500	0.0193	0.0500	mg/L	1.00		PRB	08/21/24	1607 264718	1 10
Antimony	U	0.00300	0.00100	0.00300	mg/L	1.00					
Arsenic	U	0.00500	0.00200	0.00500	mg/L	1.00					
Barium		0.241	0.000670	0.00400	mg/L	1.00					
Beryllium	U	0.000500	0.000200	0.000500	mg/L	1.00					
Boron	J	0.0134	0.00520	0.0150	mg/L	1.00					
Cadmium	U	0.00100	0.000300	0.00100	mg/L	1.00					
Calcium		23.4	0.0800	0.200	mg/L	1.00					
Chromium		0.0187	0.00300	0.0100	mg/L	1.00	1				

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW223SG4-24 Project: FRNP00511 Sample ID: 677670003 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time Batch	Method
Metals Analysis-ICP-M	4S										
6020, Metals (15+) "As	s Received"										
Cobalt		0.00307	0.000300	0.00100	mg/L	1.00	1				
Copper	J	0.00150	0.000300	0.00200	mg/L	1.00	1				
Iron		0.277	0.0330	0.100	mg/L	1.00	1				
Lead	U	0.00200	0.000500	0.00200	mg/L	1.00	1				
Magnesium		9.96	0.0100	0.0300	mg/L	1.00	1				
Manganese		0.0290	0.00100	0.00500	mg/L	1.00	1				
Molybdenum		0.00323	0.000200	0.00100	mg/L	1.00	1				
Nickel		0.631	0.000600	0.00200	mg/L	1.00	1				
Potassium		1.18	0.0800	0.300	mg/L	1.00	1				
Selenium	U	0.00500	0.00150	0.00500	mg/L	1.00	1				
Silver	U	0.00100	0.000300	0.00100	mg/L	1.00	1				
Sodium		46.2	0.0800	0.250	mg/L	1.00	1				
Thallium	U	0.00200	0.000600	0.00200	mg/L	1.00	1				
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00	1				
Vanadium	J	0.00516	0.00330	0.0200	mg/L	1.00	1				
Zinc	J	0.00503	0.00330	0.0200	mg/L	1.00	1				
Rhodium	U	0.00500	0.00160	0.00500	mg/L	1.00	1	PRB	08/21/24	1102 264718	l 11
Tantalum	U	0.00500	0.00100	0.00500	mg/L	1.00	1				
Solids Analysis											
160.1, Dissolved Solids	s "As Receive	ed"									
Total Dissolved Solids		227	2.38	10.0	mg/L			KLP1	08/01/24	1450 264987	7 12
Spectrometric Analysis	S										
410.4, Chem. Oxygen l	Demand "As l	Received"									
COD	U	20.0	8.95	20.0	mg/L		1	HH2	07/31/24	1733 264774	1 13
Volatile Organics											
8260D, Volatiles- full s	suite "As Rece	eived"									
1,1,1,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1	JB6	07/29/24	1425 2647927	7 14
1,1,1-Trichloroethane	U	1.00	0.333	1.00	ug/L		1				
1,1,2,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1				
1,1,2-Trichloroethane	U	1.00	0.333	1.00	ug/L		1				
1,1-Dichloroethane	U	1.00	0.333	1.00	ug/L		1				
1,1-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1				
1,2,3-Trichloropropane	U	1.00	0.333	1.00	ug/L		1				
1,2-Dibromoethane	U	1.00	0.333	1.00	ug/L		1				

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW223SG4-24 Project: FRNP00511 Sample ID: 677670003 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
Volatile Organics									
8260D, Volatiles- full s	suite "As Rec	eived"							
1,2-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloroethane	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloropropane	U	1.00	0.333	1.00	ug/L		1		
1,4-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
2-Butanone	U	5.00	1.67	5.00	ug/L		1		
2-Hexanone	U	5.00	1.67	5.00	ug/L		1		
4-Methyl-2-pentanone	U	5.00	1.67	5.00	ug/L		1		
Acetone	U	5.00	1.74	5.00	ug/L		1		
Acrolein	U	5.00	1.67	5.00	ug/L		1		
Acrylonitrile	U	5.00	1.67	5.00	ug/L		1		
Benzene	U	1.00	0.333	1.00	ug/L		1		
Bromochloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromodichloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromoform	U	1.00	0.333	1.00	ug/L		1		
Bromomethane	U	1.00	0.337	1.00	ug/L		1		
Carbon disulfide	U	5.00	1.67	5.00	ug/L		1		
Carbon tetrachloride	U	1.00	0.333	1.00	ug/L		1		
Chlorobenzene	U	1.00	0.333	1.00	ug/L		1		
Chloroethane	U	1.00	0.333	1.00	ug/L		1		
Chloroform	U	1.00	0.333	1.00	ug/L		1		
Chloromethane	U	1.00	0.333	1.00	ug/L		1		
Dibromochloromethane	U	1.00	0.333	1.00	ug/L		1		
Dibromomethane	U	1.00	0.333	1.00	ug/L		1		
Ethylbenzene	U	1.00	0.333	1.00	ug/L		1		
Iodomethane	U	5.00	1.67	5.00	ug/L		1		
Methylene chloride	U	5.00	0.500	5.00	ug/L		1		
Styrene	U	1.00	0.333	1.00	ug/L		1		
Tetrachloroethylene	U	1.00	0.333	1.00	ug/L		1		
Toluene	U	1.00	0.333	1.00	ug/L		1		
Trichloroethylene	U	1.00	0.333	1.00	ug/L		1		
Trichlorofluoromethane	U	1.00	0.333	1.00	ug/L		1		
Vinyl acetate	U	5.00	1.67	5.00	ug/L		1		
Vinyl chloride	U	1.00	0.333	1.00	ug/L		1		
Xylenes (total)	U	3.00	1.00	3.00	ug/L		1		
cis-1,2-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1		
cis-1,3-Dichloropropylene	U	1.00	0.333	1.00	ug/L		1		

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Certificate of Analysis

Report Date: October 31, 2024

DF Analyst Date Time Batch Method

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Qualifier

Project: C-746-S&T Landfill Quarterly(SG24-04)

Result

Client Sample ID: MW223SG4-24 Project: FRNP00511 Sample ID: 677670003 Client ID: FRNP005

DL

RL

Units

PF

	-						•	
Volatile Organics								
8260D, Volatiles- full s	uite "As Recei	ved"						
trans-1,2-Dichloroethylene	U	1.00	0.333	1.00	ug/	L 1		
trans-1,3-Dichloropropylene	U	1.00	0.333	1.00	ug/	L 1		
trans-1,4-Dichloro-2-butene	U	5.00	1.67	5.00	ug/	L 1		
The following Prep Me	thods were per	formed:						
Method	Description			Analyst	Date	Tin	ne Prep Bato	ch
SW846 3005A	ICP-MS 3005A	PREP		BB2	08/14/	24 1505	5 2647179	
SW846 8011 PREP	8011 Prep			LOF	08/03/	24 1306	5 2647153	
SW846 9010C Distillation	SW846 9010C	Prep		ES2	07/31/	24 1157	2647071	
SW846 7470A Prep	EPA 7470A M	ercury Prep Liquid		JM13	07/29/	24 1115	2647192	
The following Analytic	cal Methods we	ere performed:						
Method	Description					Analyst Co	omments	
1	SW846 8011					-		
2	SW846 8011							
3	SW846 9060A							
4	SW846 9012B							
5	SW846 9020B							
5	EPA 300.0							
7	SW846 9056A							
8	SW846 9056A							
9	SW846 7470A							
10	SW846 3005A/	6020B						
11	SW846 3005A/	6020B						
12	EPA 160.1							
13	EPA 410.4							
14	SW846 8260D							
Surrogate/Tracer Recov	ery Test				Result	Nominal	Recovery%	Acceptable Limits
1-Chloro-2-fluorobenzene	8011, VC	OA Compounds Liquid "As Receive	ed"		6.52 ug/L	6.68	98	(56%-149%)
Bromofluorobenzene		olatiles- full suite "As Received"			48.3 ug/L	50.0	97	(74%-123%)
1,2-Dichloroethane-d4	8260D, V	olatiles- full suite "As Received"			47.8 ug/L	50.0	96	(76%-127%)
Toluene-d8	8260D, V	olatiles- full suite "As Received"			49.5 ug/L	50.0	99	(77%-121%)

Parameter

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW223SG4-24 Project: FRNP00511 Sample ID: 677670003 Client ID: FRNP005

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW223SG4-24 Sample ID: 677670004

Matrix: WG

Collect Date: 25-JUL-24 07:33
Receive Date: 26-JUL-24
Collector: Client

Project: FRNP00511 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Time Batch	Method
Metals Analysis-ICP-l	MS									
6020, Dissolved Meta	ls (3 Elements)	"As Received"								
Barium		0.232	0.000670	0.00400	mg/L	1.00	1	PRB 08/21/24	1611 2647181	1
Chromium		0.0157	0.00300	0.0100	mg/L	1.00	1			
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00	1			
The following Prep M	ethods were pe	erformed:								
Method	Description	1		Analyst	Date	7	Гimе	Prep Batch		
SW846 3005A	ICP-MS 3005	A PREP		BB2	08/14/24	1	1505	2647179		
EPA 160	Laboratory Fi	ltration		SD	07/26/24	1	1321	2647033		
The following Analyt	ical Methods v	vere performed:								
Method	Description				A	Analyst	Cor	nments		
1	SW846 3005A	\/6020B								

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

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Certificate of Analysis

Project:

Client ID:

Report Date: October 31, 2024

FRNP00511

FRNP005

Four Rivers Nuclear Partnership, LLC Company:

5600 Hobbs Road Address:

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW224DSG4-24

Sample ID: 677670005

Matrix: WG

Collect Date: 25-JUL-24 09:20 Receive Date: 26-JUL-24 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
504.1/8011 Analysis of	of EDB/DBCP											
8011, VOA Compoun	ds Liquid "As l	Received"										
1,2-Dibromo-3-chloropropa	ane U	0.0192	0.00862	0.0192	ug/L	0.958	1	LOF	08/03/24	2259	2647154	2
Carbon Analysis												
9060A, Total Organic	Carbon "As Re	eceived"										
Total Organic Carbon Aver	age J	0.777	0.330	2.00	mg/L		1	KB3	08/19/24	1935	2657964	3
Flow Injection Analys	sis											
9012B, Total Cyanide	"As Received"	"										
Cyanide, Total	U	0.200	0.00167	0.200	mg/L	1.00	1	KLP1	07/31/24	1837	2647072	4
Halogen Analysis												
9020B, TOX (Organic	e Halogen) "As	Received"										
Total Organic Halogens	J	9.78	3.33	10.0	ug/L		1	JS13	08/21/24	1820	2660465	5
Ion Chromatography												
300.0, Iodide in Liqui	d "As Received	1"										
Iodide	U	0.500	0.167	0.500	mg/L		1	TXT1	08/12/24	1620	2654906	6
SW846 9056A Anion	s (5) "As Recei	ved"										
Bromide		0.327	0.0670	0.200	mg/L		1	CH6	07/26/24	1328	2646874	7
Fluoride	*J	0.262	0.0330	4.00	mg/L		1					
Nitrate-N	J	0.979	0.0330	10.0	mg/L		1					
Sulfate		19.2	0.133	0.400	mg/L		1					
Chloride	J	24.8	0.335	250	mg/L		5	CH6	07/27/24	0541	2646874	8
Mercury Analysis-CV												
7470, Mercury Liquid	l "As Received"	"										
Mercury	J	0.000121	0.0000670	0.000200	mg/L	1.00	1	JP2	07/30/24	1448	2647195	9
Metals Analysis-ICP-	MS											
6020, Metals (15+) "A	As Received"											
Sodium		58.3	0.800	2.50	mg/L	1.00	10	PRB	08/21/24	1636	2647181	10
Rhodium	U	0.00500	0.00160	0.00500	mg/L	1.00	1	PRB	08/21/24	1104	2647181	11
Tantalum	U	0.00500	0.00100	0.00500	mg/L	1.00	1					
Aluminum	U	0.0500	0.0193	0.0500	mg/L	1.00	1	PRB	08/21/24	1615	2647181	12
Antimony	U	0.00300	0.00100	0.00300	mg/L	1.00	1					
Arsenic	U	0.00500	0.00200	0.00500	mg/L	1.00	1					
Barium		0.234	0.000670	0.00400	mg/L	1.00	1					
Beryllium	U	0.000500	0.000200	0.000500	mg/L	1.00	1					
Boron		0.0340	0.00520	0.0150	mg/L	1.00	1					

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW224DSG4-24 Project: FRNP00511 Sample ID: 677670005 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Metals Analysis-ICP-M	1S											
6020, Metals (15+) "As	Received"											
Cadmium	U	0.00100	0.000300	0.00100	mg/L	1.00	1					
Calcium		25.8	0.0800	0.200	mg/L	1.00	1					
Chromium	J	0.00406	0.00300	0.0100	mg/L	1.00	1					
Cobalt	U	0.00100	0.000300	0.00100	mg/L	1.00	1					
Copper	J	0.00102	0.000300	0.00200	mg/L	1.00	1					
Iron	J	0.0334	0.0330	0.100	mg/L	1.00	1					
Lead	U	0.00200	0.000500	0.00200	mg/L	1.00	1					
Magnesium		11.4	0.0100	0.0300	mg/L	1.00	1					
Manganese		0.00830	0.00100	0.00500	mg/L	1.00	1					
Molybdenum	J	0.000967	0.000200	0.00100	mg/L	1.00	1					
Nickel		0.0101	0.000600	0.00200	mg/L	1.00	1					
Potassium		1.04	0.0800	0.300	mg/L	1.00	1					
Selenium	U	0.00500	0.00150	0.00500	mg/L	1.00	1					
Silver	U	0.00100	0.000300	0.00100	mg/L	1.00	1					
Thallium	U	0.00200	0.000600	0.00200	mg/L	1.00	1					
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00	1					
Vanadium	J	0.00354	0.00330	0.0200	mg/L	1.00	1					
Zinc	U	0.0200	0.00330	0.0200	mg/L	1.00	1					
Solids Analysis												
160.1, Dissolved Solids	s "As Receive	ed"										
Total Dissolved Solids		261	2.38	10.0	mg/L			KLP1	08/01/24	1450	2649877	13
Spectrometric Analysis					8							
410.4, Chem. Oxygen I		Received"										
COD	J	11.0	8.95	20.0	mg/L		1	HH2	07/31/24	1733	26/77/1	14
Volatile Organics	J	11.0	0.73	20.0	mg/L		1	11112	07/31/24	1733	2047741	14
8260D, Volatiles- full s	nite "As Rece	eived"										
1,1,1,2-Tetrachloroethane	U U	1.00	0.333	1.00	ug/L		1	JB6	07/29/24	1210	2647927	15
1,1,1-Trichloroethane	U	1.00	0.333	1.00	ug/L ug/L		1	JBO	07/29/24	1219	204/92/	13
1,1,2,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L ug/L		1					
1,1,2-Trichloroethane	U	1.00	0.333	1.00	ug/L ug/L		1					
1,1-Dichloroethane	U	1.00	0.333	1.00	_		1					
1,1-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1					
1,2,3-Trichloropropane	U	1.00	0.333	1.00	ug/L ug/L		1					
1,2-Dibromoethane	U	1.00	0.333	1.00	ug/L ug/L		1					
1,2-1010111001110	U	1.00	0.333	1.00	ug/L		1					

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW224DSG4-24 Project: FRNP00511 Sample ID: 677670005 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
Volatile Organics									
8260D, Volatiles- full s	uite "As Rec	eived"							
1,2-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloroethane	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloropropane	U	1.00	0.333	1.00	ug/L		1		
1,4-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
2-Butanone	U	5.00	1.67	5.00	ug/L		1		
2-Hexanone	U	5.00	1.67	5.00	ug/L		1		
4-Methyl-2-pentanone	U	5.00	1.67	5.00	ug/L		1		
Acetone	U	5.00	1.74	5.00	ug/L		1		
Acrolein	U	5.00	1.67	5.00	ug/L		1		
Acrylonitrile	U	5.00	1.67	5.00	ug/L		1		
Benzene	U	1.00	0.333	1.00	ug/L		1		
Bromochloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromodichloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromoform	U	1.00	0.333	1.00	ug/L		1		
Bromomethane	U	1.00	0.337	1.00	ug/L		1		
Carbon disulfide	U	5.00	1.67	5.00	ug/L		1		
Carbon tetrachloride	U	1.00	0.333	1.00	ug/L		1		
Chlorobenzene	U	1.00	0.333	1.00	ug/L		1		
Chloroethane	U	1.00	0.333	1.00	ug/L		1		
Chloroform	U	1.00	0.333	1.00	ug/L		1		
Chloromethane	U	1.00	0.333	1.00	ug/L		1		
Dibromochloromethane	U	1.00	0.333	1.00	ug/L		1		
Dibromomethane	U	1.00	0.333	1.00	ug/L		1		
Ethylbenzene	U	1.00	0.333	1.00	ug/L		1		
Iodomethane	U	5.00	1.67	5.00	ug/L		1		
Methylene chloride	U	5.00	0.500	5.00	ug/L		1		
Styrene	U	1.00	0.333	1.00	ug/L		1		
Tetrachloroethylene	U	1.00	0.333	1.00	ug/L		1		
Toluene	U	1.00	0.333	1.00	ug/L		1		
Trichloroethylene	U	1.00	0.333	1.00	ug/L		1		
Trichlorofluoromethane	U	1.00	0.333	1.00	ug/L		1		
Vinyl acetate	U	5.00	1.67	5.00	ug/L		1		
Vinyl chloride	U	1.00	0.333	1.00	ug/L		1		
Xylenes (total)	U	3.00	1.00	3.00	ug/L		1		
cis-1,2-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1		
cis-1,3-Dichloropropylene	U	1.00	0.333	1.00	ug/L		1		

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Certificate of Analysis

Report Date: October 31, 2024

DF Analyst Date Time Batch Method

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Qualifier

8260D, Volatiles- full suite "As Received"

Parameter

Toluene-d8

Notes:

Volatile Organics

Project: C-746-S&T Landfill Quarterly(SG24-04)

Result

Client Sample ID: MW224DSG4-24 Project: FRNP00511 Sample ID: 677670005 Client ID: FRNP005

DL

RL

Units

PF

50.0

50.4 ug/L

101

(77%-121%)

,									
trans-1,2-Dichloroethylene	U	1.00)	0.333	1.00	ug/	/L	l	
trans-1,3-Dichloropropylene	U	1.00)	0.333	1.00	ug/	/L	l	
trans-1,4-Dichloro-2-butene	U	5.00)	1.67	5.00	ug/	/L	l	
The following Prep Me	thods were	performed	:						
Method	Descript	ion			Analyst	Date	Tiı	ne Prep Ba	ntch
SW846 8011 PREP	8011 Prep				LOF	08/03/	/24 130	6 2647153	
SW846 7470A Prep	EPA 7470.	A Mercury Pro	ep Liquid		JM13	07/29/	/24 111	5 2647192	
SW846 3005A	ICP-MS 30	005A PREP			BB2	08/14/	/24 150	5 2647179	
SW846 9010C Distillation	SW846 90	10C Prep			ES2	07/31/	/24 115	7 2647071	
The following Analytic	al Method	s were perf	ormed:						
Method	Descripti	on					Analyst C	omments	
1	SW846 801	11							
2	SW846 801	11							
3	SW846 906	50A							
4	SW846 901	12B							
5	SW846 902	20B							
6	EPA 300.0								
7	SW846 905	56A							
8	SW846 905	56A							
9	SW846 747	70A							
10	SW846 300	05A/6020B							
11	SW846 300	05A/6020B							
12	SW846 300	05A/6020B							
13	EPA 160.1								
14	EPA 410.4								
15	SW846 826	50D							
Surrogate/Tracer Recov	ery Tes	st				Result	Nominal	Recovery%	Acceptable Limits
1-Chloro-2-fluorobenzene	8011	, VOA Compo	ounds Liquid "As Receiv	ved"		6.43 ug/L	6.84	94	(56%-149%)
Bromofluorobenzene	8260	D, Volatiles-	full suite "As Received"			48.4 ug/L	50.0	97	(74%-123%)
1,2-Dichloroethane-d4	8260	D, Volatiles-	full suite "As Received"			48.9 ug/L	50.0	98	(76%-127%)

8260D, Volatiles- full suite "As Received"

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW224DSG4-24 Project: FRNP00511 Sample ID: 677670005 Client ID: FRNP005

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW224DSG4-24

Sample ID: 677670006

Matrix: WG

Collect Date: 25-JUL-24 09:20 Receive Date: 26-JUL-24 Collector: Client Project: FRNP00511 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Time Batch	Method
Metals Analysis-IC	CP-MS									
6020, Dissolved M	etals (3 Elements) "	As Received"								
Barium		0.233	0.000670	0.00400	mg/L	1.00	1	PRB 08/21/2	4 1618 2647181	1
Chromium	U	0.0100	0.00300	0.0100	mg/L	1.00	1			
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00	1			
The following Prep	Methods were perf	formed:								
Method	Description			Analyst	Date	,	Time	e Prep Batc	h	
SW846 3005A	ICP-MS 3005A	PREP		BB2	08/14/24		1505	2647179		
EPA 160	Laboratory Filtr	ration		SD	07/26/24		1321	2647033		
The following Ana	alytical Methods we	re performed:								
Method	Description				A	Analyst	Cor	mments		
1	SW846 3005A/6	5020B								

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

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Certificate of Analysis

Project:

Client ID:

Report Date: October 31, 2024

FRNP00511

FRNP005

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW224SG4-24

Sample ID: 677670007

Matrix: WG

Collect Date: 25-JUL-24 09:20
Receive Date: 26-JUL-24
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time Batch	Method
504.1/8011 Analysis of	EDB/DBCP										
8011, VOA Compounds	s Liquid "As	Received"									
1,2-Dibromo-3-chloropropane		0.0189	0.00850	0.0189	ug/L	0.944	1	LOF	08/03/24	2329 2647154	2
Carbon Analysis											
9060A, Total Organic C	Carbon "As R	eceived"									
Total Organic Carbon Averag		0.799	0.330	2.00	mg/L		1	KB3	08/19/24	2008 2657964	3
Flow Injection Analysis					C						
9012B, Total Cyanide "		"									
Cyanide, Total	U	0.200	0.00167	0.200	mg/L	1.00	1	KLP1	07/31/24	1838 2647072	4
Halogen Analysis					C						
9020B, TOX (Organic I	Halogen) "As	Received"									
Total Organic Halogens	rurogen, ri	13.1	3.33	10.0	ug/L		1	JS13	08/21/24	1859 2660465	5
Ion Chromatography							_				_
300.0, Iodide in Liquid	"As Received	4"									
Iodide	U	0.500	0.167	0.500	mg/L		1	TXT1	08/12/24	1633 2654906	6
SW846 9056A Anions			0.107	0.500	mg/L		•	1711	00/12/21	1033 203 1900	· ·
Chloride	J	24.8	0.335	250	mg/L		5	СН6	07/27/24	0612 2646874	7
Bromide	v	0.330	0.0670	0.200	mg/L		1	CH6	07/26/24	1359 2646874	
Fluoride	*J	0.259	0.0330	4.00	mg/L		1				
Nitrate-N	J	0.925	0.0330	10.0	mg/L		1				
Sulfate		19.3	0.133	0.400	mg/L		1				
Mercury Analysis-CVA	A										
7470, Mercury Liquid "	As Received	"									
Mercury	J	0.000151	0.0000670	0.000200	mg/L	1.00	1	JP2	07/30/24	1449 2647195	9
Metals Analysis-ICP-M	S										
6020, Metals (15+) "As	Received"										
Rhodium	U	0.00500	0.00160	0.00500	mg/L	1.00	1	PRB	08/21/24	1105 2647181	10
Tantalum	U	0.00500	0.00100	0.00500	mg/L	1.00	1				
Aluminum	U	0.0500	0.0193	0.0500	mg/L	1.00	1	PRB	08/21/24	1622 2647181	11
Antimony	U	0.00300	0.00100	0.00300	mg/L	1.00	1				
Arsenic	U	0.00500	0.00200	0.00500	mg/L	1.00					
Barium		0.231	0.000670	0.00400	mg/L	1.00					
Beryllium	U	0.000500	0.000200	0.000500	mg/L	1.00					
Boron		0.0350	0.00520	0.0150	mg/L	1.00					
Cadmium	U	0.00100	0.000300	0.00100	mg/L	1.00	1				

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW224SG4-24 Project: FRNP00511 Sample ID: 677670007 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time Batch	Method
Metals Analysis-ICP-M	4S										
6020, Metals (15+) "As	s Received"										
Calcium		25.9	0.0800	0.200	mg/L	1.00	1				
Chromium	J	0.00571	0.00300	0.0100	mg/L	1.00	1				
Cobalt	U	0.00100	0.000300	0.00100	mg/L	1.00	1				
Copper	J	0.00110	0.000300	0.00200	mg/L	1.00	1				
Iron	J	0.0527	0.0330	0.100	mg/L	1.00	1				
Lead	U	0.00200	0.000500	0.00200	mg/L	1.00	1				
Magnesium		11.3	0.0100	0.0300	mg/L	1.00	1				
Manganese		0.00868	0.00100	0.00500	mg/L	1.00	1				
Molybdenum	J	0.000986	0.000200	0.00100	mg/L	1.00	1				
Nickel		0.0103	0.000600	0.00200	mg/L	1.00	1				
Potassium		1.06	0.0800	0.300	mg/L	1.00	1				
Selenium	U	0.00500	0.00150	0.00500	mg/L	1.00	1				
Silver	U	0.00100	0.000300	0.00100	mg/L	1.00	1				
Thallium	U	0.00200	0.000600	0.00200	mg/L	1.00	1				
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00	1				
Vanadium	J	0.00350	0.00330	0.0200	mg/L	1.00	1				
Zinc	U	0.0200	0.00330	0.0200	mg/L	1.00	1				
Sodium		57.5	0.800	2.50	mg/L	1.00	10	PRB	08/21/24	1640 2647181	12
Solids Analysis											
160.1, Dissolved Solids	s "As Receive	ed"									
Total Dissolved Solids		256	2.38	10.0	mg/L			KLP1	08/01/24	1450 2649877	13
Spectrometric Analysis	S										
410.4, Chem. Oxygen	Demand "As l	Received"									
COD	J	13.3	8.95	20.0	mg/L		1	HH2	07/31/24	1733 2647741	14
Volatile Organics											
8260D, Volatiles- full s	suite "As Rec	eived"									
1,1,1,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1	JB6	07/29/24	1450 2647927	15
1,1,1-Trichloroethane	U	1.00	0.333	1.00	ug/L		1				
1,1,2,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1				
1,1,2-Trichloroethane	U	1.00	0.333	1.00	ug/L		1				
1,1-Dichloroethane	U	1.00	0.333	1.00	ug/L		1				
1,1-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1				
1,2,3-Trichloropropane	U	1.00	0.333	1.00	ug/L		1				
1,2-Dibromoethane	U	1.00	0.333	1.00	ug/L		1				

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW224SG4-24 Project: FRNP00511 Sample ID: 677670007 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
Volatile Organics									
8260D, Volatiles- full s	suite "As Rec	eived"							
1,2-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloroethane	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloropropane	U	1.00	0.333	1.00	ug/L		1		
1,4-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
2-Butanone	U	5.00	1.67	5.00	ug/L		1		
2-Hexanone	U	5.00	1.67	5.00	ug/L		1		
4-Methyl-2-pentanone	U	5.00	1.67	5.00	ug/L		1		
Acetone	U	5.00	1.74	5.00	ug/L		1		
Acrolein	U	5.00	1.67	5.00	ug/L		1		
Acrylonitrile	U	5.00	1.67	5.00	ug/L		1		
Benzene	U	1.00	0.333	1.00	ug/L		1		
Bromochloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromodichloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromoform	U	1.00	0.333	1.00	ug/L		1		
Bromomethane	U	1.00	0.337	1.00	ug/L		1		
Carbon disulfide	U	5.00	1.67	5.00	ug/L		1		
Carbon tetrachloride	U	1.00	0.333	1.00	ug/L		1		
Chlorobenzene	U	1.00	0.333	1.00	ug/L		1		
Chloroethane	U	1.00	0.333	1.00	ug/L		1		
Chloroform	U	1.00	0.333	1.00	ug/L		1		
Chloromethane	U	1.00	0.333	1.00	ug/L		1		
Dibromochloromethane	U	1.00	0.333	1.00	ug/L		1		
Dibromomethane	U	1.00	0.333	1.00	ug/L		1		
Ethylbenzene	U	1.00	0.333	1.00	ug/L		1		
Iodomethane	U	5.00	1.67	5.00	ug/L		1		
Methylene chloride	U	5.00	0.500	5.00	ug/L		1		
Styrene	U	1.00	0.333	1.00	ug/L		1		
Tetrachloroethylene	U	1.00	0.333	1.00	ug/L		1		
Toluene	U	1.00	0.333	1.00	ug/L		1		
Trichloroethylene	U	1.00	0.333	1.00	ug/L		1		
Trichlorofluoromethane	U	1.00	0.333	1.00	ug/L		1		
Vinyl acetate	U	5.00	1.67	5.00	ug/L		1		
Vinyl chloride	U	1.00	0.333	1.00	ug/L		1		
Xylenes (total)	U	3.00	1.00	3.00	ug/L		1		
cis-1,2-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1		
cis-1,3-Dichloropropylene	U	1.00	0.333	1.00	ug/L		1		

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Certificate of Analysis

Report Date: October 31, 2024

DF Analyst Date Time Batch Method

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Qualifier

8260D, Volatiles- full suite "As Received"

Project: C-746-S&T Landfill Quarterly(SG24-04)

Result

8260D, Volatiles- full suite "As Received"

8260D, Volatiles- full suite "As Received"

Client Sample ID: MW224SG4-24 Project: FRNP00511 Sample ID: 677670007 Client ID: FRNP005

DL

RL

Units

PF

trans-1,2-Dichloroethylene		U	1.00	0.333	1.00) ug	/L	1				
trans-1,3-Dichloropropylene		U	1.00	0.333	1.00	ug ug	/L	1				
trans-1,4-Dichloro-2-butene		U	5.00	1.67	5.00	ug ug	/L	1				
The following Prep Met	thods wer	e perforn	ned:									
Method	Description				Analyst	Date	T	ime	Prep Batc	h		
SW846 9010C Distillation	SW846 9010C Prep			ES2	07/31	/24 1	157	2647071				
SW846 3005A	ICP-MS 3005A PREP			BB2	08/14	/24 15	505	2647179				
SW846 7470A Prep	EPA 7470A Mercury Prep Liquid			JM13	07/29	/24 1	115	2647192				
SW846 8011 PREP	8011 Prep			LOF	08/03	/24 13	306	2647153				
The following Analytic	al Metho	ds were p	erformed:									
Method	Description					Analyst Comments						
1	SW846 80	011					-					
2	SW846 80	011										
3	SW846 90	060A										
4	SW846 9012B											
5	SW846 9020B											
6	EPA 300.0											
7	SW846 9056A											
8	SW846 9056A											
9	SW846 7470A											
10	SW846 3005A/6020B											
11	SW846 3005A/6020B											
12	SW846 3005A/6020B											
13	EPA 160.1											
14	EPA 410.4											
15	SW846 82	260D										
Surrogate/Tracer Recovery Test				Result	Nominal	F	Recovery%	Acceptable Limits				
1-Chloro-2-fluorobenzene	801	1, VOA Co	ompounds Liquid "As Reco	eived"		6.44 ug/L	6.75		95	(56%-149%)		
Bromofluorobenzene			les- full suite "As Received			48.4 ug/L	50.0		97	(74%-123%)		

Toluene-d8

1,2-Dichloroethane-d4

Parameter

Volatile Organics

47.3 ug/L

49.3 ug/L

50.0

50.0

95

99

(76%-127%)

(77%-121%)

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW224SG4-24 Project: FRNP00511 Sample ID: 677670007 Client ID: FRNP005

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW224SG4-24 Sample ID: 677670008

Matrix: WG

Collect Date: 25-JUL-24 09:20 Receive Date: 26-JUL-24 Collector: Client Project: FRNP00511 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Time Batch	Method	
Metals Analysis-ICP-M	IS										
6020, Dissolved Metals	(3 Elements)	"As Received"									
Barium		0.235	0.000670	0.00400	mg/L	1.00	1	PRB 08/21/24	1625 2647181	1	
Chromium	U	0.0100	0.00300	0.0100	mg/L	1.00	1				
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00	1				
The following Prep Me											
Method	Description	n		Analyst	Date	7	Гітє	Prep Batch	l		
EPA 160	Laboratory Fi	ltration		SD	07/26/24	1	1321	2647033			
SW846 3005A	ICP-MS 3005	SA PREP		BB2	08/14/24	1	1505	2647179			
The following Analytical Methods were performed:											
Method	Description			Analyst Comments							

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

SW846 3005A/6020B

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Certificate of Analysis

Report Date: October 31, 2024

FRNP00511

FRNP005

Four Rivers Nuclear Partnership, LLC Company:

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: FB1SG4-24 Sample ID: 677670009

Matrix: WATER

C 11 . D . 25 1111 24 00.24

	Collect Date: Receive Date: Collector:		TUL-24 09:24 TUL-24 ent										
Parameter	Qua	lifier	Result	DL	RL	Units	PF	DF	Anal	yst Date	Time	Batch	Method
504.1/8011	Analysis of EDB/	DBCP											
8011, VO	A Compounds Liqui	d "As	Received"										
1,2-Dibromo-	-3-chloropropane	U	0.0190	0.00854	0.0190	ug/L	0.949	1	LOF	08/03/24	2359	2647154	. 1

Project:

Client ID:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: FB1SG4-24 Project: FRNP00511 Sample ID: 677670009 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Anal	yst Date	Time Batch	Method
Metals Analysis-ICP-M	IS										
6020, Metals (15+) "As	Received"										
Rhodium	U	0.00500	0.00160	0.00500	mg/L	1.00	1	PRB	08/21/24	1107 2647181	6
Tantalum	U	0.00500	0.00100	0.00500	mg/L	1.00	1				
Volatile Organics					_						
8260D, Volatiles- full s	uite "As Rece	eived"									
1,1,1,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1	JB6	07/29/24	1245 2647927	7
1,1,1-Trichloroethane	U	1.00	0.333	1.00	ug/L		1				
1,1,2,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1				
1,1,2-Trichloroethane	U	1.00	0.333	1.00	ug/L		1				
1,1-Dichloroethane	U	1.00	0.333	1.00	ug/L		1				
1,1-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1				
1,2,3-Trichloropropane	U	1.00	0.333	1.00	ug/L		1				
1,2-Dibromoethane	U	1.00	0.333	1.00	ug/L		1				
1,2-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1				
1,2-Dichloroethane	U	1.00	0.333	1.00	ug/L		1				
1,2-Dichloropropane	U	1.00	0.333	1.00	ug/L		1				
1,4-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1				
2-Butanone	U	5.00	1.67	5.00	ug/L		1				
2-Hexanone	U	5.00	1.67	5.00	ug/L		1				
4-Methyl-2-pentanone	U	5.00	1.67	5.00	ug/L		1				
Acetone	U	5.00	1.74	5.00	ug/L		1				
Acrolein	U	5.00	1.67	5.00	ug/L		1				
Acrylonitrile	U	5.00	1.67	5.00	ug/L		1				
Benzene	U	1.00	0.333	1.00	ug/L		1				
Bromochloromethane	U	1.00	0.333	1.00	ug/L		1				
Bromodichloromethane	U	1.00	0.333	1.00	ug/L		1				
Bromoform	U	1.00	0.333	1.00	ug/L		1				
Bromomethane	U	1.00	0.337	1.00	ug/L		1				
Carbon disulfide	U	5.00	1.67	5.00	ug/L		1				
Carbon tetrachloride	U	1.00	0.333	1.00	ug/L		1				
Chlorobenzene	U	1.00	0.333	1.00	ug/L		1				
Chloroethane	U	1.00	0.333	1.00	ug/L		1				
Chloroform	U	1.00	0.333	1.00	ug/L		1				
Chloromethane	U	1.00	0.333	1.00	ug/L		1				
Dibromochloromethane	U	1.00	0.333	1.00	ug/L		1				
Dibromomethane	U	1.00	0.333	1.00	ug/L		1				
Ethylbenzene	U	1.00	0.333	1.00	ug/L		1				

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Certificate of Analysis

Report Date: October 31, 2024

DF Analyst Date Time Batch Method

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Qualifier

Parameter

Project: C-746-S&T Landfill Quarterly(SG24-04)

Result

Client Sample ID: FB1SG4-24 Project: FRNP00511 Sample ID: 677670009 Client ID: FRNP005

DL

RL

Units

PF

	•						•	
Volatile Organics								
8260D, Volatiles- full st	uite "As Receiv	ved"						
Iodomethane	U	5.00	1.67	5.0	0 ug/I	_ 1		
Methylene chloride	U	5.00	0.500	5.0	_			
Styrene	U	1.00	0.333	1.0	0 ug/I	_ 1		
Tetrachloroethylene	U	1.00	0.333	1.0	0 ug/I	_ 1		
Toluene	U	1.00	0.333	1.0	0 ug/I	_ 1		
Trichloroethylene	U	1.00	0.333	1.0	0 ug/I	_ 1		
Trichlorofluoromethane	U	1.00	0.333	1.0				
Vinyl acetate	U	5.00	1.67	5.0	0 ug/I	_ 1		
Vinyl chloride	U	1.00	0.333	1.0	0 ug/I	_ 1		
Xylenes (total)	U	3.00	1.00	3.0	0 ug/I	_ 1		
cis-1,2-Dichloroethylene	U	1.00	0.333	1.0	0 ug/I	_ 1		
cis-1,3-Dichloropropylene	U	1.00	0.333	1.0	0 ug/I	_ 1		
trans-1,2-Dichloroethylene	U	1.00	0.333	1.0	0 ug/I	_ 1		
trans-1,3-Dichloropropylene	U	1.00	0.333	1.0	0 ug/I	_ 1		
trans-1,4-Dichloro-2-butene	U	5.00	1.67	5.0	0 ug/I	_ 1		
The following Prep Met	thods were perf	formed:						
Method	Description			Analyst	Date	Tim	e Prep Bato	ch
SW846 8011 PREP	8011 Prep			LOF	08/03/2	1306	2647153	
SW846 3005A	ICP-MS 3005A	PREP		BB2	08/14/2	1505	2647179	
SW846 7470A Prep	EPA 7470A Me	ercury Prep Liquid		JM13	07/29/2	24 1115	2647192	
The following Analytic	al Methods we	ere performed:						
Method	Description					Analyst Co	mments	
1	SW846 8011							
2	SW846 8011							
3	EPA 300.0							
4	SW846 7470A							
5	SW846 3005A/6	5020B						
6	SW846 3005A/6							
7	SW846 8260D	,0202						
							_	
Surrogate/Tracer Recov					Result	Nominal	Recovery%	Acceptable Limits
1-Chloro-2-fluorobenzene	8011, VO	A Compounds Liquid "As Receiv	/ed"		6.07 ug/L	6.78	90	(56%-149%)
Bromofluorobenzene	8260D, V	olatiles- full suite "As Received"			50.1 ug/L	50.0	100	(74%-123%)
1,2-Dichloroethane-d4	8260D, V	olatiles- full suite "As Received"			49.1 ug/L	50.0	98	(76%-127%)

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: FB1SG4-24 Project: FRNP00511 Sample ID: 677670009 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Time Batch	Method
Toluene-d8	8260D,	Volatiles- full suite "As Received"		5	1.0 ug/L	50	0.0	102	(77%-121%)

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

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Certificate of Analysis

Project:

Report Date: October 31, 2024

FRNP00511

Four Rivers Nuclear Partnership, LLC Company:

5600 Hobbs Road Address:

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: RI1SG4-24

Matrix: WATER

Collect Date: 25-JUL-24 06:30 Receive Date: 26-JUL-24 Collector: Client

Sample ID: 677670010 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	yst Date	Time Batch	Method
504.1/8011 Analysis of	of EDB/DBCP										
8011, VOA Compoun	nds Liquid "As	Received"									
1,2-Dibromo-3-chloropropa	-	0.0191	0.00858	0.0191	ug/L	0.953	1	LOF	08/04/24	0029 2647154	1
Ion Chromatography											
300.0, Iodide in Liqui	d "As Received	d"									
Iodide	U	0.500	0.167	0.500	mg/L		1	TXT1	08/12/24	1659 2654906	3
Mercury Analysis-CV	'AA				_						
7470, Mercury Liquid	l "As Received	"									
Mercury	U	0.000200	0.0000670	0.000200	mg/L	1.00	1	JP2	07/30/24	1456 2647195	4
Metals Analysis-ICP-	MS										
6020, Metals (15+) "A											
Rhodium	U	0.00500	0.00160	0.00500	mg/L	1.00	1	PRB	08/21/24	1109 2647181	5
Tantalum	Ü	0.00500	0.00100	0.00500	mg/L	1.00					-
Aluminum	U	0.0500	0.0193	0.0500	mg/L	1.00		PRB	08/21/24	1632 2647181	6
Antimony	U	0.00300	0.00100	0.00300	mg/L	1.00	1				
Arsenic	U	0.00500	0.00200	0.00500	mg/L	1.00					
Barium	U	0.00400	0.000670	0.00400	mg/L	1.00	1				
Beryllium	U	0.000500	0.000200	0.000500	mg/L	1.00	1				
Boron	U	0.0150	0.00520	0.0150	mg/L	1.00	1				
Cadmium	U	0.00100	0.000300	0.00100	mg/L	1.00	1				
Calcium	U	0.200	0.0800	0.200	mg/L	1.00	1				
Chromium	U	0.0100	0.00300	0.0100	mg/L	1.00	1				
Cobalt	U	0.00100	0.000300	0.00100	mg/L	1.00	1				
Copper	U	0.00200	0.000300	0.00200	mg/L	1.00	1				
Iron	U	0.100	0.0330	0.100	mg/L	1.00					
Lead	U	0.00200	0.000500	0.00200	mg/L	1.00					
Magnesium	U	0.0300	0.0100	0.0300	mg/L	1.00					
Manganese	U	0.00500	0.00100	0.00500	mg/L	1.00					
Molybdenum	U	0.00100	0.000200	0.00100	mg/L	1.00					
Nickel	U	0.00200	0.000600	0.00200	mg/L	1.00					
Potassium	U	0.300	0.0800	0.300	mg/L	1.00					
Selenium	U	0.00500	0.00150	0.00500	mg/L	1.00					
Silver	U	0.00100	0.000300	0.00100	mg/L	1.00					
Sodium	U	0.250	0.0800	0.250	mg/L	1.00					
Thallium	U	0.00200	0.000600	0.00200	mg/L	1.00					
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00	1				

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: RI1SG4-24 Project: FRNP00511 Sample ID: 677670010 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Anal	yst Date	Time Batch	Method
Metals Analysis-ICP-M	1S										
6020, Metals (15+) "As	Received"										
Vanadium	J	0.00524	0.00330	0.0200	mg/L	1.00	1				
Zinc	U	0.0200	0.00330	0.0200	mg/L	1.00					
Volatile Organics					C						
8260D, Volatiles- full s	suite "As Rece	eived"									
1,1,1,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1	JB6	07/29/24	1310 2647927	7
1,1,1-Trichloroethane	U	1.00	0.333	1.00	ug/L		1				
1,1,2,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1				
1,1,2-Trichloroethane	U	1.00	0.333	1.00	ug/L		1				
1,1-Dichloroethane	U	1.00	0.333	1.00	ug/L		1				
1,1-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1				
1,2,3-Trichloropropane	U	1.00	0.333	1.00	ug/L		1				
1,2-Dibromoethane	U	1.00	0.333	1.00	ug/L		1				
1,2-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1				
1,2-Dichloroethane	U	1.00	0.333	1.00	ug/L		1				
1,2-Dichloropropane	U	1.00	0.333	1.00	ug/L		1				
1,4-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1				
2-Butanone	U	5.00	1.67	5.00	ug/L		1				
2-Hexanone	U	5.00	1.67	5.00	ug/L		1				
4-Methyl-2-pentanone	U	5.00	1.67	5.00	ug/L		1				
Acetone	U	5.00	1.74	5.00	ug/L		1				
Acrolein	U	5.00	1.67	5.00	ug/L		1				
Acrylonitrile	U	5.00	1.67	5.00	ug/L		1				
Benzene	U	1.00	0.333	1.00	ug/L		1				
Bromochloromethane	U	1.00	0.333	1.00	ug/L		1				
Bromodichloromethane	U	1.00	0.333	1.00	ug/L		1				
Bromoform	U	1.00	0.333	1.00	ug/L		1				
Bromomethane	U	1.00	0.337	1.00	ug/L		1				
Carbon disulfide	U	5.00	1.67	5.00	ug/L		1				
Carbon tetrachloride	U	1.00	0.333	1.00	ug/L		1				
Chlorobenzene	U	1.00	0.333	1.00	ug/L		1				
Chloroethane	U	1.00	0.333	1.00	ug/L		1				
Chloroform	J	0.430	0.333	1.00	ug/L		1				
Chloromethane	U	1.00	0.333	1.00	ug/L		1				
Dibromochloromethane	U	1.00	0.333	1.00	ug/L		1				
Dibromomethane	U	1.00	0.333	1.00	ug/L		1				
Ethylbenzene	U	1.00	0.333	1.00	ug/L		1				

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Certificate of Analysis

Report Date: October 31, 2024

DF Analyst Date Time Batch Method

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Qualifier

Parameter

Project: C-746-S&T Landfill Quarterly(SG24-04)

Result

Client Sample ID: RI1SG4-24 Project: FRNP00511 Sample ID: 677670010 Client ID: FRNP005

DL

RL

Units

PF

Volatile Organics								
8260D, Volatiles- full su	uite "As Receiv	ved"						
Iodomethane	U	5.00	1.67	5.00	ug/L	. 1		
Methylene chloride	U	5.00	0.500	5.00	ug/L	. 1		
Styrene	U	1.00	0.333	1.00	ug/L	. 1		
Tetrachloroethylene	U	1.00	0.333	1.00	ug/L	. 1		
Toluene	U	1.00	0.333	1.00	ug/L	. 1		
Trichloroethylene	U	1.00	0.333	1.00	C			
Trichlorofluoromethane	U	1.00	0.333	1.00	U	. 1		
Vinyl acetate	U	5.00	1.67	5.00	U			
Vinyl chloride	U	1.00	0.333	1.00	U			
Xylenes (total)	U	3.00	1.00	3.00	U			
cis-1,2-Dichloroethylene	U	1.00	0.333	1.00	U			
cis-1,3-Dichloropropylene	U	1.00	0.333	1.00	U			
trans-1,2-Dichloroethylene	U	1.00	0.333	1.00	U			
trans-1,3-Dichloropropylene	U	1.00	0.333	1.00	U			
trans-1,4-Dichloro-2-butene	U	5.00	1.67	5.00	ug/L	. 1		
The following Prep Met	hods were perf	Formed:						
Method	Description			Analyst	Date	Time	e Prep Batc	h
SW846 8011 PREP	8011 Prep			LOF	08/03/2	4 1306	2647153	
SW846 3005A	ICP-MS 3005A	PREP		BB2	08/14/2	4 1505	2647179	
SW846 7470A Prep	EPA 7470A Me	rcury Prep Liquid		JM13	07/29/2	4 1115	2647192	
The following Analytic	al Methods we	re performed:						
Method	Description					Analyst Cor	nments	
1	SW846 8011					-		
2	SW846 8011							
3	EPA 300.0							
4	SW846 7470A							
5	SW846 3005A/6	020B						
5	SW846 3005A/6 SW846 3005A/6							
6 7	SW846 3005A/6 SW846 8260D				Result	Nominal	Recovery%	Acceptable Limits
6 7 Surrogate/Tracer Recov	SW846 3005A/6 SW846 8260D ery Test	020B	Received"		Result	Nominal 6.81	Recovery%	Acceptable Limits
6 7 Surrogate/Tracer Recovents 1-Chloro-2-fluorobenzene	SW846 3005A/6 SW846 8260D ery Test 8011, VO	020B A Compounds Liquid "As			6.66 ug/L	6.81	98	(56%-149%)
6 7 Surrogate/Tracer Recov	SW846 3005A/6 SW846 8260D ery Test 8011, VO 8260D, Vo	020B	eived"					

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: RI1SG4-24 Project: FRNP00511 Sample ID: 677670010 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Time Batch	Method
Toluene-d8	8260D,	Volatiles- full suite "As Received"		49	9.5 ug/L	50	0.0	99	(77%-121%)

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: TB4SG4-24 Sample ID: 677670011

Matrix: WATER

Collect Date: 25-JUL-24 06:25 Receive Date: 26-JUL-24 Collector: Client Project: FRNP00511 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Anal	yst Date	Time	Batch	Method
504.1/8011 Analysis of	EDB/DBCP											
8011, VOA Compounds	s Liquid "As	Received"										
1,2-Dibromo-3-chloropropane	•	0.0195	0.00876	0.0195	ug/L	0.974	1	LOF	08/04/24	0100 2	647154	2
Volatile Organics												
8260D, Volatiles- full st	uite "As Rece	eived"										
1,1,1,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1	JB6	07/29/24	1335 2	647927	3
1,1,1-Trichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1,2,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1,2-Trichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1-Dichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1					
1,2,3-Trichloropropane	U	1.00	0.333	1.00	ug/L		1					
1,2-Dibromoethane	U	1.00	0.333	1.00	ug/L		1					
1,2-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1					
1,2-Dichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,2-Dichloropropane	U	1.00	0.333	1.00	ug/L		1					
1,4-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1					
2-Butanone	U	5.00	1.67	5.00	ug/L		1					
2-Hexanone	U	5.00	1.67	5.00	ug/L		1					
4-Methyl-2-pentanone	U	5.00	1.67	5.00	ug/L		1					
Acetone	U	5.00	1.74	5.00	ug/L		1					
Acrolein	U	5.00	1.67	5.00	ug/L		1					
Acrylonitrile	U	5.00	1.67	5.00	ug/L		1					
Benzene	U	1.00	0.333	1.00	ug/L		1					
Bromochloromethane	U	1.00	0.333	1.00	ug/L		1					
Bromodichloromethane	U	1.00	0.333	1.00	ug/L		1					
Bromoform	U	1.00	0.333	1.00	ug/L		1					
Bromomethane	U	1.00	0.337	1.00	ug/L		1					
Carbon disulfide	U	5.00	1.67	5.00	ug/L		1					
Carbon tetrachloride	U	1.00	0.333	1.00	ug/L		1					
Chlorobenzene	U	1.00	0.333	1.00	ug/L		1					
Chloroethane	U	1.00	0.333	1.00	ug/L		1					
Chloroform	J	0.420	0.333	1.00	ug/L		1					
Chloromethane	U	1.00	0.333	1.00	ug/L		1					
Dibromochloromethane	U	1.00	0.333	1.00	ug/L		1					
Dibromomethane	U	1.00	0.333	1.00	ug/L		1					
Ethylbenzene	U	1.00	0.333	1.00	ug/L		1					
Iodomethane	U	5.00	1.67	5.00	ug/L		1					

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: TB4SG4-24 Project: FRNP00511 Sample ID: 677670011 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF A	nalyst Date	Time Batch	Method
Volatile Organics										
8260D, Volatiles- full si	uite "As Rece	eived"								
Methylene chloride	U	5.00	0.500	5.00	ug/L		1			
Styrene	U	1.00	0.333	1.00	ug/L		1			
Tetrachloroethylene	U	1.00	0.333	1.00	ug/L		1			
Toluene	U	1.00	0.333	1.00	ug/L		1			
Trichloroethylene	U	1.00	0.333	1.00	ug/L		1			
Trichlorofluoromethane	U	1.00	0.333	1.00	ug/L		1			
Vinyl acetate	U	5.00	1.67	5.00	ug/L		1			
Vinyl chloride	U	1.00	0.333	1.00	ug/L		1			
Xylenes (total)	U	3.00	1.00	3.00	ug/L		1			
cis-1,2-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1			
cis-1,3-Dichloropropylene	U	1.00	0.333	1.00	ug/L		1			
trans-1,2-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1			
trans-1,3-Dichloropropylene	U	1.00	0.333	1.00	ug/L		1			
trans-1,4-Dichloro-2-butene	U	5.00	1.67	5.00	ug/L		1			
The following Prep Met	hods were pe	erformed:								
Method	Description	n		Analyst	Date	,	Time	Prep Batch		
SW846 8011 PREP	8011 Prep			LOF	08/03/24		1306	2647153		

The following Analytical Methods were performed:

Method	Description
1	SW846 8011
2	SW846 8011
3	SW846 8260D

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1-Chloro-2-fluorobenzene	8011, VOA Compounds Liquid "As Received"	6.36 ug/L	6.95	91	(56%-149%)
Bromofluorobenzene	8260D, Volatiles- full suite "As Received"	50.7 ug/L	50.0	101	(74%-123%)
1,2-Dichloroethane-d4	8260D, Volatiles- full suite "As Received"	49.9 ug/L	50.0	100	(76%-127%)
Toluene-d8	8260D, Volatiles- full suite "As Received"	51.0 ug/L	50.0	102	(77%-121%)

Analyst Comments

Notes:

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: TB4SG4-24 Project: FRNP00511 Sample ID: 677670011 Client ID: FRNP005

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

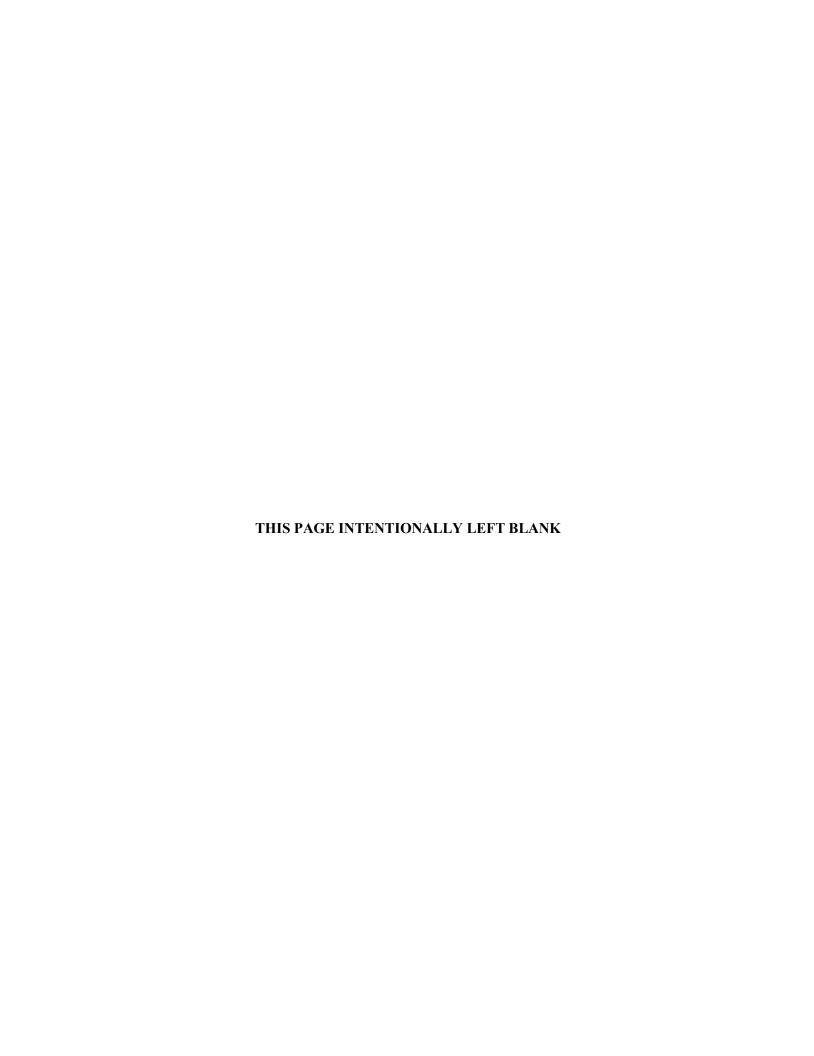
PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit



ATTACHMENT C3 GEL LABORATORIES CERTIFICATE OF ANALYSIS



2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client

Client Sample ID: MW384SG4-24 Project: FRNP00511
Sample ID: 677151001 Client ID: FRNP005
Matrix: WG

Matrix: WG Collect Date: 23-JUL-24 Receive Date: 24-JUL-24

Collector:

Parameter	Qualifier	Result Ur	ncertainty	MDC	TPU	RL	Units	PF	DF Analys	st Date	Time	Batch	Mtd.
Rad Alpha Spec Ana	alysis												
AlphaSpec Ra226,	Liquid "As Rece	ived"											
Radium-226		1.08	+/-0.753	0.751	+/-0.757	5.00	pCi/L		CM4	08/22/24	0837	2659829	1
Th-01-RC M, Th Is	otopes, Liquid "A	As Received	"										
Thorium-230	U	0.0246	+/-0.803	1.76	+/-0.805	50.0	pCi/L		AG2	08/15/24	1232	2646982	2
Rad Gas Flow Propo		U											
Strontium-90	U	0.716	+/-3.94	7.17	+/-3.94	8.00	pCi/L		JE1	08/12/24	1653	2650326	3
9310,Alpha/Beta A	ctivity, liquid "A	s Received"											
Alpha	U	1.32	+/-3.11	6.18	+/-3.12	15.0	pCi/L		НН3	08/05/24	0952	2650233	4
Beta		27.5	+/-7.94	9.07	+/-9.16	50.0	pCi/L						
Rad Liquid Scintilla 906.0 Mod, Tritiun	•	s Received"											
Tritium Tc-02-RC-MOD, T	U Cc99, Liquid "As .	143 Received"	+/-164	276	+/-166	300	pCi/L		HB2	08/20/24	1835	2649580	5
Technetium-99	-	47.6	+/-11.7	15.7	+/-12.8	25.0	pCi/L		GS3	08/14/24	2057	2647381	6
The fellowing Amelo	4° - 1 M - 4b - 1	•											

The following Analytical Methods were performed

Method	Description
1	Eichrom Industries, AN-1418
2	DOE EML HASL-300, Th-01-RC Modified
3	EPA 905.0 Modified/DOE RP501 Rev. 1 Modified
4	EPA 900.0/SW846 9310
5	EPA 906.0 Modified
6	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	AlphaSpec Ra226, Liquid "As Received"	2659829	92	(30%-110%)
Thorium-229 Tracer	Th-01-RC M, Th Isotopes, Liquid "As Received"	2646982	79.9	(30%-110%)
Strontium Carrier	905.0 Mod, Sr90, liquid "As Received"	2650326	47.1	(30%-110%)
Technetium-99m Tracer	Tc-02-RC-MOD, Tc99, Liquid "As Received"	2647381	98.1	(30%-110%)

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW384SG4-24 Project: FRNP00511 Sample ID: 677151001 Client ID: FRNP005

Parameter Qualifier Result Uncertainty MDC TPU RL Units PF DF Analyst Date Time Batch Mtd.
Surrogate/Tracer Recovery Test Batch ID Recovery% Acceptable Limits

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Mtd.: Method
DL: Detection Limit PF: Prep Factor
Lc/LC: Critical Level RL: Reporting Limit

MDA: Minimum Detectable Activity TPU: Total Propagated Uncertainty

MDC: Minimum Detectable Concentration

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Project:

Client ID:

FRNP00511

FRNP005

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW385SG4-24
Sample ID: 677151003
Matrix: WG
Collect Date: 23-JUL-24
Receive Date: 24-IIII -24

Receive Date: 24-JUL-24
Collector: Client

Parameter	Qualifier	Result Un	certainty	MDC	TPU	RL	Units	PF	DF Analys	t Date	Time	Batch	Mtd.
Rad Alpha Spec Analysi	is												
AlphaSpec Ra226, Liqi	uid "As Rece	ived"											
Radium-226	U	0.457	+/-0.549	0.726	+/-0.550	5.00	pCi/L		CM4	08/22/24	0837	2659829	1
Th-01-RC M, Th Isotop	es, Liquid "	As Received"											
Thorium-230	U	-0.205	+/-0.664	1.76	+/-0.665	50.0	pCi/L		AG2	08/15/24	1233	2646982	2
Rad Gas Flow Proportion 905.0 Mod, Sr90, liquid		0											
Strontium-90	U	-1.05	+/-2.34	4.55	+/-2.34	8.00	pCi/L		JE1	08/12/24	1653	2650326	3
9310,Alpha/Beta Activi	ity, liquid "A	s Received"											
Alpha	U	2.92	+/-3.84	6.44	+/-3.87	15.0	pCi/L		НН3	08/05/24	0952	2650233	3 4
Beta		13.4	+/-6.64	9.43	+/-7.02	50.0	pCi/L						
Rad Liquid Scintillation 906.0 Mod, Tritium Dis	•	s Received"											
Tritium	U	-15.6	+/-149	271	+/-149	300	pCi/L		HB2	08/20/24	1912	2649580	5
Tc-02-RC-MOD, Tc99,	Liquid "As	Received"											
Technetium-99		45.9	+/-11.5	15.5	+/-12.6	25.0	pCi/L		GS3	08/14/24	2113	2647381	6
TF1 - 6-11 A 14'	13.5.41 1	c											

The following Analytical Methods were performed

Method	Description
1	Eichrom Industries, AN-1418
2	DOE EML HASL-300, Th-01-RC Modified
3	EPA 905.0 Modified/DOE RP501 Rev. 1 Modified
4	EPA 900.0/SW846 9310
5	EPA 906.0 Modified
6	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	AlphaSpec Ra226, Liquid "As Received"	2659829	92.8	(30%-110%)
Thorium-229 Tracer	Th-01-RC M, Th Isotopes, Liquid "As Received"	2646982	79.1	(30%-110%)
Strontium Carrier	905.0 Mod, Sr90, liquid "As Received"	2650326	74.9	(30%-110%)
Technetium-99m Tracer	Tc-02-RC-MOD, Tc99, Liquid "As Received"	2647381	98.8	(30%-110%)

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW385SG4-24 Project: FRNP00511 Sample ID: 677151003 Client ID: FRNP005

Parameter Qualifier Result Uncertainty MDC TPU RL Units PF DF Analyst Date Time Batch Mtd.
Surrogate/Tracer Recovery Test Batch ID Recovery% Acceptable Limits

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Mtd.: Method
DL: Detection Limit PF: Prep Factor
Lc/LC: Critical Level RL: Reporting Limit

MDA: Minimum Detectable Activity TPU: Total Propagated Uncertainty

MDC: Minimum Detectable Concentration

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Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Project:

Client ID:

FRNP00511

GS3 08/14/24 2130 2647381 6

FRNP005

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW386SG4-24
Sample ID: 677151005
Matrix: WG
Collect Date: 23-JUL-24
Receive Date: 24-IIII -24

Receive Date: 24-JUL-24
Collector: Client

Concetor.	Chent												
Parameter	Qualifier	Result Un	certainty	MDC	TPU	RL	Units	PF	DF Analys	t Date	Time	Batch 1	Mtd.
Rad Alpha Spec Analys	sis												
AlphaSpec Ra226, Lie	quid "As Rece	ived"											
Radium-226	U	0.412	+/-0.555	0.747	+/-0.556	5.00	pCi/L		CM4	08/22/24	0837	2659829	1
Th-01-RC M, Th Isoto	pes, Liquid "A	As Received"	•										
Thorium-230	U	-0.491	+/-0.500	1.84	+/-0.501	50.0	pCi/L		AG2	08/15/24	1233	2646982	2
Rad Gas Flow Proporti	ional Countii	ng											
905.0 Mod, Sr90, liqu	id "As Receiv	red"											
Strontium-90	U	0.244	+/-1.74	3.35	+/-1.74	8.00	pCi/L		JE1	08/12/24	1653	2650326	3
9310,Alpha/Beta Acti	vity, liquid "A	s Received"											
Alpha	U	1.16	+/-4.72	9.53	+/-4.73	15.0	pCi/L		HH3	08/05/24	0952	2650233	4
Beta	U	-2.69	+/-4.48	9.32	+/-4.48	50.0	pCi/L						
Rad Liquid Scintillation	n Analysis												
906.0 Mod, Tritium D	ist, Liquid "A	s Received"											
Tritium	U	118	+/-164	280	+/-166	300	pCi/L		HB2	08/20/24	1949	2649580	5
Tc-02-RC-MOD, Tc99	9, Liquid "As	Received"											

+/-7.87

25.0

pCi/L

The following Analytical Methods were performed

Technetium-99

Method	Description
1	Eichrom Industries, AN-1418
2	DOE EML HASL-300, Th-01-RC Modified
3	EPA 905.0 Modified/DOE RP501 Rev. 1 Modified
4	EPA 900.0/SW846 9310
5	EPA 906.0 Modified
6	DOE EML HASL-300, Tc-02-RC Modified

U

-9.74

+/-7.87

15.4

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	AlphaSpec Ra226, Liquid "As Received"	2659829	95.1	(30%-110%)
Thorium-229 Tracer	Th-01-RC M, Th Isotopes, Liquid "As Received"	2646982	91.3	(30%-110%)
Strontium Carrier	905.0 Mod, Sr90, liquid "As Received"	2650326	57.8	(30%-110%)
Technetium-99m Tracer	Tc-02-RC-MOD, Tc99, Liquid "As Received"	2647381	98	(30%-110%)

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW386SG4-24 Project: FRNP00511 Sample ID: 677151005 Client ID: FRNP005

Parameter Qualifier Result Uncertainty MDC TPU RL Units PF DF Analyst Date Time Batch Mtd.
Surrogate/Tracer Recovery Test Batch ID Recovery% Acceptable Limits

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Mtd.: Method
DL: Detection Limit PF: Prep Factor
Lc/LC: Critical Level RL: Reporting Limit

MDA: Minimum Detectable Activity TPU: Total Propagated Uncertainty

MDC: Minimum Detectable Concentration

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Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Project:

Client ID:

FRNP00511

FRNP005

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW390SG4-24 Sample ID: 677151007 Matrix: WG Collect Date: 23-JUL-24

Receive Date: 24-JUL-24
Collector: Client

Parameter	Qualifier	Result Und	certainty	MDC	TPU	RL	Units	PF	DF Analy	st Date	Time	Batch	Mtd.
Rad Alpha Spec Analy AlphaSpec Ra226, Li		ived"											
Radium-226		0.771	+/-0.671	0.686	+/-0.674	5.00	pCi/L		CM4	08/22/24	0837	2659829	1
Th-01-RC M, Th Isot	opes, Liquid "	As Received"											
Thorium-230	U	0.137	+/-0.921	1.89	+/-0.923	50.0	pCi/L		AG2	08/15/24	1233	2646982	2
Rad Gas Flow Proport 905.0 Mod, Sr90, liqu		_											
Strontium-90	U	-0.836	+/-1.41	3.06	+/-1.41	8.00	pCi/L		JE1	08/12/24	1653	2650326	3
9310,Alpha/Beta Act	ivity, liquid "A	s Received"											
Alpha	U	5.03	+/-4.95	7.18	+/-5.02	15.0	pCi/L		НН3	08/05/24	1330	2650233	4
Beta		39.1	+/-8.93	9.13	+/-11.0	50.0	pCi/L						
Rad Liquid Scintillation 906.0 Mod, Tritium 1		s Received"											
Tritium	U	78.2	+/-161	280	+/-162	300	pCi/L		HB2	08/20/24	2026	2649580	5
Tc-02-RC-MOD, Tc9	99, Liquid "As	Received"											
Technetium-99	-	57.4	+/-12.5	16.1	+/-14.0	25.0	pCi/L		GS3	08/14/24	2147	2647381	6
The following Analytic	ool Mothoda v	vara narfarm	a.d										

The following Analytical Methods were performed

Method	Description
1	Eichrom Industries, AN-1418
2	DOE EML HASL-300, Th-01-RC Modified
3	EPA 905.0 Modified/DOE RP501 Rev. 1 Modified
4	EPA 900.0/SW846 9310
5	EPA 906.0 Modified
6	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	AlphaSpec Ra226, Liquid "As Received"	2659829	94	(30%-110%)
Thorium-229 Tracer	Th-01-RC M, Th Isotopes, Liquid "As Received"	2646982	80.2	(30%-110%)
Strontium Carrier	905.0 Mod, Sr90, liquid "As Received"	2650326	70.6	(30%-110%)
Technetium-99m Tracer	Tc-02-RC-MOD, Tc99, Liquid "As Received"	2647381	95.3	(30%-110%)

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Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW390SG4-24 Project: FRNP00511 Sample ID: Client ID: FRNP005 677151007

Parameter Result Uncertainty Units PF DF Analyst Date Time Batch Mtd. Qualifier MDC **TPU** RLBatch ID Recovery% Acceptable Limits Test

Surrogate/Tracer Recovery

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Mtd.: Method DL: Detection Limit PF: Prep Factor Lc/LC: Critical Level **RL**: Reporting Limit

MDA: Minimum Detectable Activity TPU: Total Propagated Uncertainty

MDC: Minimum Detectable Concentration

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Project:

Client ID:

FRNP00511

FRNP005

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW391SG4-24 Sample ID: 677151009 Matrix: WG Collect Date: 23_HH__24

Collect Date: 23-JUL-24
Receive Date: 24-JUL-24
Collector: Client

Parameter	Qualifier	Result Uncertaint	y MDC	TPU	RL	Units	PF	DF Analys	st Date T	ime	Batch 1	Mtd.
Rad Alpha Spec Analy	vsis											
AlphaSpec Ra226, Li	quid "As Rece	ived"										
Radium-226	U	0.411 +/-0.56	2 0.828	+/-0.563	5.00	pCi/L		CM4	08/22/24 08	837	2659829	1
Th-01-RC M, Th Isoto	opes, Liquid "	As Received"										
Thorium-230	U	-0.0222 +/-0.95	5 2.11	+/-0.956	50.0	pCi/L		AG2	08/15/24 12	233	2646982	2
Rad Gas Flow Proport 905.0 Mod, Sr90, liqu		U										
Strontium-90	U	0.710 +/-1.3	6 2.45	+/-1.36	8.00	pCi/L		JE1	08/12/24 16	553	2650326	3
9310,Alpha/Beta Acti	ivity, liquid "A	s Received"										
Alpha	U	-0.555 +/-3.3	9 8.00	+/-3.39	15.0	pCi/L		НН3	08/05/24 09	952	2650233	4
Beta	U	6.69 +/-6.0	6 9.83	+/-6.16	50.0	pCi/L						
Rad Liquid Scintillation 906.0 Mod, Tritium I	•	s Received"										
Tritium	U	16.4 +/-15	3 274	+/-153	300	pCi/L		HB2	08/20/24 21	103	2649580	5
Tc-02-RC-MOD, Tc9	9, Liquid "As	Received"										
Technetium-99	U	9.87 +/-9.1	8 15.2	+/-9.25	25.0	pCi/L		GS3	08/14/24 22	203	2647381	6
The following Analytic	al Mathada y	rono nonformed										

The following Analytical Methods were performed

Method	Description
1	Eichrom Industries, AN-1418
2	DOE EML HASL-300, Th-01-RC Modified
3	EPA 905.0 Modified/DOE RP501 Rev. 1 Modified
4	EPA 900.0/SW846 9310
5	EPA 906.0 Modified
6	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	AlphaSpec Ra226, Liquid "As Received"	2659829	96.3	(30%-110%)
Thorium-229 Tracer	Th-01-RC M, Th Isotopes, Liquid "As Received"	2646982	79.6	(30%-110%)
Strontium Carrier	905.0 Mod, Sr90, liquid "As Received"	2650326	74.9	(30%-110%)
Technetium-99m Tracer	Tc-02-RC-MOD, Tc99, Liquid "As Received"	2647381	99.6	(30%-110%)

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW391SG4-24 Project: FRNP00511 Sample ID: Client ID: FRNP005 677151009

Parameter Qualifier **Result Uncertainty** Units PF DF Analyst Date Time Batch Mtd. MDC **TPU** RLBatch ID Recovery% Acceptable Limits Test

Notes:

Surrogate/Tracer Recovery

The MDC is a sample specific MDC.

Column headers are defined as follows:

DF: Dilution Factor Mtd.: Method DL: Detection Limit PF: Prep Factor Lc/LC: Critical Level **RL**: Reporting Limit

MDA: Minimum Detectable Activity TPU: Total Propagated Uncertainty

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

MDC: Minimum Detectable Concentration

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Project:

Client ID:

FRNP00511

FRNP005

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW392SG4-24
Sample ID: 677151011
Matrix: WG
Collect Date: 23-JUL-24
Receive Date: 24-IIII -24

Receive Date: 24-JUL-24
Collector: Client

Parameter	Qualifier	Result Ur	certainty	MDC	TPU	RL	Units	PF	DF Analys	t Date	Гіте	Batch	Mtd.
Rad Alpha Spec Ana	alysis												
AlphaSpec Ra226,	Liquid "As Rece	ived"											
Radium-226	U	0.313	+/-0.520	0.817	+/-0.521	5.00	pCi/L		CM4	08/22/24	0837	2659829	1
Th-01-RC M, Th Is	sotopes, Liquid ".	As Received'	,										
Thorium-230	U	0.0853	+/-0.933	1.97	+/-0.935	50.0	pCi/L		AG2	08/15/24	1233	2646982	2
Rad Gas Flow Proposition 905.0 Mod, Sr90, 1		0											
Strontium-90	U	2.64	+/-2.09	3.29	+/-2.13	8.00	pCi/L		JE1	08/12/24	1653	2650326	3
9310,Alpha/Beta A	Activity, liquid "A	s Received"											
Alpha	U	-1.57	+/-3.06	8.11	+/-3.07	15.0	pCi/L		НН3	08/05/24	0952	2650233	4
Beta	U	5.11	+/-5.82	9.76	+/-5.88	50.0	pCi/L						
Rad Liquid Scintilla 906.0 Mod, Tritiun	•	s Received"											
Tritium Tc-02-RC-MOD, T	U Tc99, Liquid "As	192 Received"	+/-172	283	+/-176	300	pCi/L		HB2	08/20/24	2140	2649580	5
Technetium-99	U	0.664	+/-8.51	15.2	+/-8.51	25.0	pCi/L		GS3	08/14/24	2220	2647381	6
TDL - C-11 A1-		e											

The following Analytical Methods were performed

Method	Description
1	Eichrom Industries, AN-1418
2	DOE EML HASL-300, Th-01-RC Modified
3	EPA 905.0 Modified/DOE RP501 Rev. 1 Modified
4	EPA 900.0/SW846 9310
5	EPA 906.0 Modified
6	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	AlphaSpec Ra226, Liquid "As Received"	2659829	98.8	(30%-110%)
Thorium-229 Tracer	Th-01-RC M, Th Isotopes, Liquid "As Received"	2646982	80.7	(30%-110%)
Strontium Carrier	905.0 Mod, Sr90, liquid "As Received"	2650326	66.3	(30%-110%)
Technetium-99m Tracer	Tc-02-RC-MOD, Tc99, Liquid "As Received"	2647381	99.7	(30%-110%)

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW392SG4-24 Project: FRNP00511 Sample ID: 677151011 Client ID: FRNP005

Parameter Qualifier Result Uncertainty MDC TPU RL Units PF DF Analyst Date Time Batch Mtd.

Surrogate/Tracer Recovery Test Batch ID Recovery% Acceptable Limits

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Mtd.: Method
DL: Detection Limit PF: Prep Factor
Lc/LC: Critical Level RL: Reporting Limit

MDA: Minimum Detectable Activity TPU: Total Propagated Uncertainty

MDC: Minimum Detectable Concentration

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW384SG4-24

Sample ID: 677151001

Matrix: WG

Collect Date: 23-JUL-24 08:06
Receive Date: 24-JUL-24
Collector: Client

Project: FRNP00511 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
504.1/8011 Analysis	of EDB/DBCP											
8011, VOA Compour	nds Liquid "As	Received"										
1,2-Dibromo-3-chloroprop	ane U	0.0193	0.00868	0.0193	ug/L	0.964	1	LOF	07/26/24	2312	2645909	1
Carbon Analysis												
9060A, Total Organic	Carbon "As R	eceived"										
Total Organic Carbon Ave	rage J	0.813	0.330	2.00	mg/L		1	KB3	08/16/24	1138	2656554	2
Flow Injection Analys	sis											
9012B, Total Cyanide	e "As Received"	"										
Cyanide, Total	U	0.200	0.00167	0.200	mg/L	1.00	1	AXH3	07/26/24	0825	2645990	3
Halogen Analysis												
9020B, TOX (Organi	c Halogen) "As	Received"										
Total Organic Halogens	J	8.58	3.33	10.0	ug/L		1	JS13	08/09/24	1608	2653933	4
Ion Chromatography												
300.0, Iodide in Liqui	id "As Received	d"										
Iodide	U	0.500	0.167	0.500	mg/L		1	TXT1	08/08/24	1723	2653275	5
SW846 9056A Anion	ıs (5) "As Recei	ived"										
Chloride	BJ	21.3	0.335	250	mg/L		5	TXT1	07/24/24	1621	2645599	6
Nitrate-N	J	0.784	0.165	10.0	mg/L		5					
Bromide		0.257	0.0670	0.200	mg/L		1	TXT1	07/24/24	1310	2645599	7
Fluoride	JW	0.174	0.0330	4.00	mg/L		1					
Sulfate		17.9	0.133	0.400	mg/L		1					
Mercury Analysis-CV	/AA											
7470, Mercury Liquid	d "As Received"	"										
Mercury	U	0.000200	0.0000670	0.000200	mg/L	1.00	1	JP2	07/26/24	1235	2646041	8
Metals Analysis-ICP-	·MS											
6020, Metals (15+) "A	As Received"											
Aluminum	J	0.0402	0.0193	0.0500	mg/L	1.00		PRB	08/10/24	1627	2645663	9
Antimony	U	0.00300	0.00100	0.00300	mg/L	1.00	1					
Arsenic	U	0.00500	0.00200	0.00500	mg/L	1.00	1					
Barium		0.196	0.000670	0.00400	mg/L	1.00	1					
Beryllium	U	0.000500	0.000200	0.000500	mg/L	1.00						
Boron		0.0599	0.00520	0.0150	mg/L	1.00						
Cadmium	U	0.00100	0.000300	0.00100	mg/L	1.00						
Calcium		23.3	0.0800	0.200	mg/L	1.00						
Chromium	J	0.00405	0.00300	0.0100	mg/L	1.00	1					

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW384SG4-24 Project: FRNP00511 Sample ID: 677151001 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	e Batch	Method
Metals Analysis-ICP-MS	S											
6020, Metals (15+) "As	Received"											
Cobalt	U	0.00100	0.000300	0.00100	mg/L	1.00	1					
Copper	J	0.00139	0.000300	0.00200	mg/L	1.00	1					
Iron		0.554	0.0330	0.100	mg/L	1.00	1					
Lead	U	0.00200	0.000500	0.00200	mg/L	1.00	1					
Magnesium		9.62	0.0100	0.0300	mg/L	1.00	1					
Manganese		0.0111	0.00100	0.00500	mg/L	1.00	1					
Molybdenum	U	0.00100	0.000200	0.00100	mg/L	1.00						
Nickel	J	0.000912	0.000600	0.00200	mg/L	1.00						
Potassium		1.33	0.0800	0.300	mg/L	1.00						
Selenium	U	0.00500	0.00150	0.00500	mg/L	1.00						
Silver	U	0.00100	0.000300	0.00100	mg/L	1.00						
Sodium		43.7	0.0800	0.250	mg/L	1.00						
Thallium	U	0.00200	0.000600	0.00200	mg/L	1.00						
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00						
Vanadium	U	0.0200	0.00330	0.0200	mg/L	1.00						
Zinc	J	0.00423	0.00330	0.0200	mg/L	1.00						
Rhodium	U	0.00500	0.00160	0.00500	mg/L	1.00		PRB	08/10/24	1237	2645663	10
Tantalum	U	0.00500	0.00100	0.00500	mg/L	1.00	1					
Solids Analysis												
160.1, Dissolved Solids	"As Receive	ed"										
Total Dissolved Solids		184	2.38	10.0	mg/L			KLP1	07/29/24	1242	2647734	- 11
Spectrometric Analysis												
410.4, Chem. Oxygen D	emand "As]	Received"										
COD	UN	20.0	8.95	20.0	mg/L		1	HH2	07/26/24	1908	2646268	12
Volatile Organics												
8260D, Volatiles- full su	ite "As Rec	eived"										
1,1,1,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1	JB6	07/29/24	0157	2647144	. 13
1,1,1-Trichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1,2,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1,2-Trichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1-Dichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1					
1,2,3-Trichloropropane	U	1.00	0.333	1.00	ug/L		1					
1,2-Dibromoethane	U	1.00	0.333	1.00	ug/L		1					

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Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW384SG4-24 Project: FRNP00511 Sample ID: 677151001 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
Volatile Organics									
8260D, Volatiles- full s	suite "As Rec	eived"							
1,2-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloroethane	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloropropane	U	1.00	0.333	1.00	ug/L		1		
1,4-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
2-Butanone	U	5.00	1.67	5.00	ug/L		1		
2-Hexanone	U	5.00	1.67	5.00	ug/L		1		
4-Methyl-2-pentanone	U	5.00	1.67	5.00	ug/L		1		
Acetone	U	5.00	1.74	5.00	ug/L		1		
Acrolein	U	5.00	1.67	5.00	ug/L		1		
Acrylonitrile	U	5.00	1.67	5.00	ug/L		1		
Benzene	U	1.00	0.333	1.00	ug/L		1		
Bromochloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromodichloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromoform	U	1.00	0.333	1.00	ug/L		1		
Bromomethane	U	1.00	0.337	1.00	ug/L		1		
Carbon disulfide	U	5.00	1.67	5.00	ug/L		1		
Carbon tetrachloride	U	1.00	0.333	1.00	ug/L		1		
Chlorobenzene	U	1.00	0.333	1.00	ug/L		1		
Chloroethane	U	1.00	0.333	1.00	ug/L		1		
Chloroform	U	1.00	0.333	1.00	ug/L		1		
Chloromethane	U	1.00	0.333	1.00	ug/L		1		
Dibromochloromethane	U	1.00	0.333	1.00	ug/L		1		
Dibromomethane	U	1.00	0.333	1.00	ug/L		1		
Ethylbenzene	U	1.00	0.333	1.00	ug/L		1		
Iodomethane	U	5.00	1.67	5.00	ug/L		1		
Methylene chloride	U	5.00	0.500	5.00	ug/L		1		
Styrene	U	1.00	0.333	1.00	ug/L		1		
Tetrachloroethylene	U	1.00	0.333	1.00	ug/L		1		
Toluene	U	1.00	0.333	1.00	ug/L		1		
Trichloroethylene		1.98	0.333	1.00	ug/L		1		
Trichlorofluoromethane	U	1.00	0.333	1.00	ug/L		1		
Vinyl acetate	U	5.00	1.67	5.00	ug/L		1		
Vinyl chloride	U	1.00	0.333	1.00	ug/L		1		
Xylenes (total)	U	3.00	1.00	3.00	ug/L		1		
cis-1,2-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1		
cis-1,3-Dichloropropylene	U	1.00	0.333	1.00	ug/L		1		

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Certificate of Analysis

Report Date: October 31, 2024

DF Analyst Date Time Batch Method

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Qualifier

8260D, Volatiles- full suite "As Received"

Parameter

Volatile Organics

1,2-Dichloroethane-d4

Toluene-d8

Notes:

Project: C-746-S&T Landfill Quarterly(SG24-04)

Result

Client Sample ID: MW384SG4-24 Project: FRNP00511 Sample ID: 677151001 Client ID: FRNP005

DL

RL

Units

50.1 ug/L

51.6 ug/L

50.0

50.0

100

103

(76%-127%)

(77% - 121%)

PF

U	1.00	0.333	1.00	ug/	L 1		
U	1.00	0.333	1.00	ug/	L 1		
U	5.00	1.67	5.00	ug/	L 1		
hods were per	formed:						
Description			Analyst	Date	Tin	ne Prep Bate	ch
SW846 9010C	Prep		ES2	07/25/	24 125	1 2645989	
EPA 7470A Mo	ercury Prep Liquid		JM13	07/25/	24 113	0 2646040	
8011 Prep			LOF	07/26/	24 145	1 2645907	
ICP-MS 3005A	PREP		BB2	07/26/	24 145	5 2645662	
al Methods we	ere performed:						
Description					Analyst Co	omments	
SW846 8011					•		
SW846 9060A							
SW846 9012B							
SW846 9020B							
EPA 300.0							
SW846 9056A							
SW846 9056A							
SW846 7470A							
SW846 3005A/6	6020B						
SW846 3005A/6	6020B						
EPA 160.1							
EPA 410.4							
EPA 410.4 SW846 8260D							
				Result	Nominal	Recovery%	Acceptable Limits
SW846 8260D ery Test	A Compounds Liquid "As Rece	eived"		Result 6.82 ug/L	Nominal 6.89	Recovery%	Acceptable Limits (56%-149%)
	U U U U U U U U U U U U U U U U U U U	U 1.00 U 5.00 hods were performed: Description SW846 9010C Prep EPA 7470A Mercury Prep Liquid 8011 Prep ICP-MS 3005A PREP al Methods were performed: Description SW846 8011 SW846 9060A SW846 9012B SW846 9020B EPA 300.0 SW846 9056A SW846 9056A SW846 7470A SW846 3005A/6020B EPA 160.1	U 1.00 0.333 U 5.00 1.67 hods were performed: Description SW846 9010C Prep EPA 7470A Mercury Prep Liquid 8011 Prep ICP-MS 3005A PREP al Methods were performed: Description SW846 8011 SW846 9060A SW846 9012B SW846 9020B EPA 300.0 SW846 9056A SW846 9056A SW846 7470A SW846 3005A/6020B EPA 160.1	U 1.00 0.333 1.00 U 5.00 1.67 5.00 hods were performed: Description Analyst SW846 9010C Prep ES2 EPA 7470A Mercury Prep Liquid JM13 8011 Prep LOF ICP-MS 3005A PREP BB2 al Methods were performed: Description SW846 8011 SW846 9060A SW846 9012B SW846 9020B EPA 300.0 SW846 9056A SW846 9056A SW846 9056A SW846 3005A/6020B SW846 3005A/6020B EPA 160.1	U 1.00 0.333 1.00 ug/ U 5.00 1.67 5.00 ug/ hods were performed: Description	U 1.00	U 1.00 0.333 1.00 ug/L 1 1

C3-18

8260D, Volatiles- full suite "As Received"

8260D, Volatiles- full suite "As Received"

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW384SG4-24 Project: FRNP00511 Sample ID: 677151001 Client ID: FRNP005

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW384SG4-24 Sample ID: 677151002

Matrix: WG

Collect Date: 23-JUL-24 08:06 Receive Date: 24-JUL-24 Collector: Client Project: FRNP00511 Client ID: FRNP005

Parameter	Qualifier Result	DL	RL	Units	PF	DF	Analyst Date	Time Batch	Method
Metals Analysis-IC	CP-MS								
6020, Dissolved M	Ietals (3 Elements) "As Received"								
Barium	0.194	0.000670	0.00400	mg/L	1.00	1	PRB 08/10/24	1631 2645663	1
Chromium	U 0.0100	0.00300	0.0100	mg/L	1.00	1			
Uranium	U 0.000200	0.0000670	0.000200	mg/L	1.00	1			
The following Prep	p Methods were performed:								
Method	Description		Analyst	Date	7	Гimе	e Prep Batch	l	
SW846 3005A	ICP-MS 3005A PREP		BB2	07/26/24	1	1455	2645662		
EPA 160	Laboratory Filtration		SD	07/24/24	1	1257	2645596		
The following An	alytical Methods were performed:								
Method	Description			A	Analyst	Cor	mments		
1	SW846 3005A/6020B								

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

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Certificate of Analysis

Project:

Client ID:

Report Date: October 31, 2024

FRNP00511

FRNP005

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW385SG4-24

Sample ID: 677151003

Matrix: WG

Collect Date: 23-JUL-24 08:48
Receive Date: 24-JUL-24
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time B	atch	Method
504.1/8011 Analysis of	f EDB/DBCP											
8011, VOA Compound	ds Liquid "As	Received"										
1,2-Dibromo-3-chloropropar	-	0.0188	0.00848	0.0188	ug/L	0.942	1	LOF	07/26/24	2342 264	15909	1
Carbon Analysis												
9060A, Total Organic	Carbon "As R	eceived"										
Total Organic Carbon Avera		0.697	0.330	2.00	mg/L		1	KB3	08/16/24	1209 265	6554	2
Flow Injection Analysi	-				8							
9012B, Total Cyanide		"										
Cyanide, Total	U	0.200	0.00167	0.200	mg/L	1.00	1	AXH3	07/26/24	0826 264	15990	3
Halogen Analysis	C	0.200	0.00107	0.200	mg/L	1.00	•	717113	07720721	0020 20	13770	5
9020B, TOX (Organic	Halogan) "As	Doggivad"										
Total Organic Halogens	Halogell) As	16.5	3.33	10.0	ug/L		1	RMJ	08/18/24	1903 265	28380	4
Ion Chromatography		10.5	5.55	10.0	ug/L		1	KWIJ	06/16/24	1903 20.	00007	4
01.	l "Aa Daasiyaa	1"										
300.0, Iodide in Liquid			0.167	0.500	/T		1	TVT1	00/00/24	1726 266	2275	_
	(5) "A a Page	0.500	0.167	0.500	mg/L		1	TXT1	08/08/24	1736 265	03213	5
SW846 9056A Anions	(3) As Recei		0.0670	0.200	/T		1	TVT1	07/24/24	1242 26	15500	_
Bromide Fluoride	JW	0.215 0.142	0.0670 0.0330	0.200 4.00	mg/L mg/L		1	TXT1	07/24/24	1342 264	13399	6
Sulfate	JW	19.2	0.0330	0.400	mg/L mg/L		1					
Chloride	ВЈ	20.9	0.335	250	mg/L		5	TXT1	07/24/24	1653 264	15599	7
Nitrate-N	J	0.658	0.165	10.0	mg/L		5		0772.72.	1000 20		,
Mercury Analysis-CV	AA				8							
7470, Mercury Liquid		"										
Mercury	U	0.000200	0.0000670	0.000200	mg/L	1.00	1	JP2	07/26/24	1237 264	16041	8
Metals Analysis-ICP-N		0.000200	0.0000070	0.000200	IIIg/L	1.00	1	31 2	01/20/24	1237 20-	10041	O
•												
6020, Metals (15+) "A		0.0500	0.0102	0.0500		1.00	1	PRB	08/10/24	1625 26	15662	0
Aluminum Antimony	U U	0.0500 0.00300	0.0193 0.00100	0.0300	mg/L mg/L	1.00 1.00	1	PKD	06/10/24	1635 264	13003	9
Arsenic	U	0.00500	0.00200	0.00500	mg/L	1.00	1					
Barium	C	0.201	0.00200	0.00400	mg/L	1.00	1					
Beryllium	U	0.000500	0.000200	0.000500	mg/L	1.00	1					
Boron	3	0.0767	0.00520	0.0150	mg/L	1.00	1					
Cadmium	U	0.00100	0.000300	0.00100	mg/L	1.00	1					
Calcium		24.1	0.0800	0.200	mg/L	1.00	1					
Chromium	U	0.0100	0.00300	0.0100	mg/L	1.00	1					

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW385SG4-24 Project: FRNP00511 Sample ID: 677151003 Client ID: FRNP005

Parameter (Qualifier	Result	DL	RL	Units	PF	DF	Analys	st Date	Time	Batch	Method
Metals Analysis-ICP-MS												
6020, Metals (15+) "As Re	eceived"											
Cobalt	J	0.000461	0.000300	0.00100	mg/L	1.00	1					
Copper	J	0.00111	0.000300	0.00200	mg/L	1.00	1					
Iron	J	0.0381	0.0330	0.100	mg/L	1.00	1					
Lead	U	0.00200	0.000500	0.00200	mg/L	1.00	1					
Magnesium		9.36	0.0100	0.0300	mg/L	1.00	1					
Manganese	J	0.00291	0.00100	0.00500	mg/L	1.00	1					
Molybdenum	J	0.000225	0.000200	0.00100	mg/L	1.00						
Nickel	J	0.00110	0.000600	0.00200	mg/L	1.00						
Potassium		1.52	0.0800	0.300	mg/L	1.00	1					
Selenium	U	0.00500	0.00150	0.00500	mg/L	1.00						
Silver	U	0.00100	0.000300	0.00100	mg/L	1.00						
Sodium		41.9	0.0800	0.250	mg/L	1.00						
Thallium	U	0.00200	0.000600	0.00200	mg/L	1.00						
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00						
Vanadium	U	0.0200	0.00330	0.0200	mg/L	1.00						
Zinc	U	0.0200	0.00330	0.0200	mg/L	1.00						
Rhodium	U	0.00500	0.00160	0.00500	mg/L	1.00		PRB	08/10/24	1239	2645663	10
Tantalum	U	0.00500	0.00100	0.00500	mg/L	1.00	1					
Solids Analysis												
160.1, Dissolved Solids "A	As Receive	ed"										
Total Dissolved Solids		201	2.38	10.0	mg/L			KLP1	07/29/24	1242	2647734	11
Spectrometric Analysis												
410.4, Chem. Oxygen Der	nand "As l	Received"										
COD	UN	20.0	8.95	20.0	mg/L		1	HH2	07/26/24	1908	2646268	12
Volatile Organics												
8260D, Volatiles- full suit	e "As Rece	eived"										
1,1,1,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1	JB6	07/29/24	0223	2647144	13
1,1,1-Trichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1,2,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1,2-Trichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1-Dichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1					
1,2,3-Trichloropropane	U	1.00	0.333	1.00	ug/L		1					
1,2-Dibromoethane	U	1.00	0.333	1.00	ug/L		1					

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW385SG4-24 Project: FRNP00511 Sample ID: 677151003 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
Volatile Organics									
8260D, Volatiles- full s	suite "As Rec	eived"							
1,2-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloroethane	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloropropane	U	1.00	0.333	1.00	ug/L		1		
1,4-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
2-Butanone	U	5.00	1.67	5.00	ug/L		1		
2-Hexanone	U	5.00	1.67	5.00	ug/L		1		
4-Methyl-2-pentanone	U	5.00	1.67	5.00	ug/L		1		
Acetone	U	5.00	1.74	5.00	ug/L		1		
Acrolein	U	5.00	1.67	5.00	ug/L		1		
Acrylonitrile	U	5.00	1.67	5.00	ug/L		1		
Benzene	U	1.00	0.333	1.00	ug/L		1		
Bromochloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromodichloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromoform	U	1.00	0.333	1.00	ug/L		1		
Bromomethane	U	1.00	0.337	1.00	ug/L		1		
Carbon disulfide	U	5.00	1.67	5.00	ug/L		1		
Carbon tetrachloride	U	1.00	0.333	1.00	ug/L		1		
Chlorobenzene	U	1.00	0.333	1.00	ug/L		1		
Chloroethane	U	1.00	0.333	1.00	ug/L		1		
Chloroform	U	1.00	0.333	1.00	ug/L		1		
Chloromethane	U	1.00	0.333	1.00	ug/L		1		
Dibromochloromethane	U	1.00	0.333	1.00	ug/L		1		
Dibromomethane	U	1.00	0.333	1.00	ug/L		1		
Ethylbenzene	U	1.00	0.333	1.00	ug/L		1		
Iodomethane	U	5.00	1.67	5.00	ug/L		1		
Methylene chloride	U	5.00	0.500	5.00	ug/L		1		
Styrene	U	1.00	0.333	1.00	ug/L		1		
Tetrachloroethylene	U	1.00	0.333	1.00	ug/L		1		
Toluene	U	1.00	0.333	1.00	ug/L		1		
Trichloroethylene	U	1.00	0.333	1.00	ug/L		1		
Trichlorofluoromethane	U	1.00	0.333	1.00	ug/L		1		
Vinyl acetate	U	5.00	1.67	5.00	ug/L		1		
Vinyl chloride	U	1.00	0.333	1.00	ug/L		1		
Xylenes (total)	U	3.00	1.00	3.00	ug/L		1		
cis-1,2-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1		
cis-1,3-Dichloropropylene	U	1.00	0.333	1.00	ug/L		1		

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Certificate of Analysis

Report Date: October 31, 2024

DF Analyst Date Time Batch Method

(77% - 121%)

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Qualifier

8260D, Volatiles- full suite "As Received"

Project: C-746-S&T Landfill Quarterly(SG24-04)

Result

8260D, Volatiles- full suite "As Received"

Client Sample ID: MW385SG4-24 Project: FRNP00511 Sample ID: 677151003 Client ID: FRNP005

DL

RL

Units

PF

02002, 101411100 1011 0										
trans-1,2-Dichloroethylene	Ţ	J	1.00	0.333	1.00) ug	/L	1		
trans-1,3-Dichloropropylene	Ţ	J	1.00	0.333	1.00) ug	/L	1		
trans-1,4-Dichloro-2-butene	J	J	5.00	1.67	5.00) ug	/L	1		
The following Prep Met	thods were	e perforn	ned:							
Method	Descript	tion			Analyst	Date	T	ime	Prep Batc	h
SW846 8011 PREP	8011 Prep)			LOF	07/26	/24 14	451	2645907	
SW846 3005A	ICP-MS 3	005A PRE	EP		BB2	07/26	/24 14	155	2645662	
SW846 7470A Prep	EPA 7470	A Mercur	y Prep Liquid		JM13	07/25	/24 11	130	2646040	
SW846 9010C Distillation	SW846 90	110C Prep			ES2	07/25	/24 12	251	2645989	
The following Analytic	al Method	ls were p	performed:							
Method	Descripti	ion					Analyst	Comn	nents	
1	SW846 80	11								
2	SW846 900	60A								
3	SW846 90	12B								
4	SW846 902	20B								
5	EPA 300.0)								
6	SW846 905	56A								
7	SW846 905	56A								
8	SW846 747	70A								
9	SW846 300	05A/6020	В							
10	SW846 300	05A/6020	В							
11	EPA 160.1									
12	EPA 410.4	ļ								
13	SW846 826	60D								
Surrogate/Tracer Recov	ery Te	st				Result	Nominal	R	Recovery%	Acceptable Limits
1-Chloro-2-fluorobenzene	8011	I, VOA Co	ompounds Liquid "As Receiv	ed"		7.01 ug/L	6.73		104	(56%-149%)
Bromofluorobenzene	8260	D, Volati	les- full suite "As Received"			48.2 ug/L	50.0		96	(74%-123%)
1,2-Dichloroethane-d4	8260	D, Volati	les- full suite "As Received"			49.0 ug/L	50.0		98	(76%-127%)
TD 1 10	00.66	ND 17 1	1 6 11 1. 11 15 1 11			40.0	50.0		00	(550/ 1010/)

Toluene-d8

Parameter

Volatile Organics

49.3 ug/L

50.0

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW385SG4-24 Project: FRNP00511 Sample ID: 677151003 Client ID: FRNP005

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

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Certificate of Analysis

Project:

Client ID:

Report Date: October 31, 2024

FRNP00511

FRNP005

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW385SG4-24 Sample ID: 677151004

Matrix: WG

Collect Date: 23-JUL-24 08:48
Receive Date: 24-JUL-24
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Time Batch	Method
Metals Analysis-IC	CP-MS									
6020, Dissolved M	etals (3 Elements)	"As Received"								
Barium		0.199	0.000670	0.00400	mg/L	1.00	1	PRB 08/10/24	1700 2645663	1
Chromium	U	0.0100	0.00300	0.0100	mg/L	1.00	1			
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00	1			
The following Prep	Methods were pe	erformed:								
Method	Description	1		Analyst	Date	,	Time	Prep Batch		
EPA 160	Laboratory Fil	ltration		SD	07/24/24		1257	2645596		
SW846 3005A	ICP-MS 3005.	A PREP		BB2	07/26/24		1455	2645662		

The following Analytical Methods were performed:

Method Description Analyst Comments

1 SW846 3005A/6020B

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

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Certificate of Analysis

Project:

Client ID:

Report Date: October 31, 2024

FRNP00511

FRNP005

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

0.000500

Client Sample ID: MW386SG4-24

Sample ID: 677151005

Matrix: WG

Beryllium

Collect Date: 23-JUL-24 09:45
Receive Date: 24-JUL-24
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
504.1/8011 Analysis of												
8011, VOA Compound		Received"										
1,2-Dibromo-3-chloropropan	•	0.0193	0.00869	0.0193	ug/L	0.966	1	LOF	07/27/24	0112	2645909	1
Carbon Analysis	_											
9060A, Total Organic O	Carbon "As R	eceived"										
Total Organic Carbon Averag	ge	5.53	0.330	2.00	mg/L		1	KB3	08/16/24	1342	2656554	2
Flow Injection Analysis	S											
9012B, Total Cyanide "		"										
Cyanide, Total	U	0.200	0.00167	0.200	mg/L	1.00	1	AXH3	07/26/24	0835	2645990	3
Halogen Analysis												
9020B, TOX (Organic l	Halogen) "As	Received"										
Total Organic Halogens	G ,	146	3.33	10.0	ug/L		1	JS13	08/09/24	1654	2653933	4
Ion Chromatography					_							
300.0, Iodide in Liquid	"As Received	1"										
Iodide	U	0.500	0.167	0.500	mg/L		1	TXT1	08/08/24	1814	2653275	5
SW846 9056A Anions	(5) "As Recei	ved"										
Nitrate-N	U	10.0	0.132	10.0	mg/L		4	TXT1	07/25/24	0019	2645599	6
Bromide	J	0.109	0.0670	0.200	mg/L		1	TXT1	07/24/24	1414	2645599	7
Fluoride	JW	0.784	0.0330	4.00	mg/L		1					
Chloride	BJ	9.94	0.134	250	mg/L		2	TXT1	07/24/24	1725	2645599	8
Sulfate		38.8	0.266	0.800	mg/L		2					
Mercury Analysis-CVA	AA											
7470, Mercury Liquid "	'As Received'	"										
Mercury	U	0.000200	0.0000670	0.000200	mg/L	1.00	1	JP2	07/26/24	1245	2646041	9
Metals Analysis-ICP-M	IS											
6020, Metals (15+) "As	Received"											
Rhodium	U	0.00500	0.00160	0.00500	mg/L	1.00	1	PRB	08/10/24	1253	2645663	10
Tantalum	U	0.00500	0.00100	0.00500	mg/L	1.00	1					
Manganese		1.17	0.0100	0.0500	mg/L	1.00	10	PRB	08/10/24	1802	2645663	11
Sodium		110	0.800	2.50	mg/L	1.00	10					
Aluminum	U	0.0500	0.0193	0.0500	mg/L	1.00	1	PRB	08/10/24	1726	2645663	12
Antimony	U	0.00300	0.00100	0.00300	mg/L	1.00	1					
Arsenic	J	0.00240	0.00200	0.00500	mg/L	1.00	1					
Barium		0.157	0.000670	0.00400	mg/L	1.00	1					

0.000500

mg/L

1.00 1

0.000200

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW386SG4-24 Project: FRNP00511 Sample ID: 677151005 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Metals Analysis-ICP-N	ΛS											
6020, Metals (15+) "A	s Received"											
Boron		0.0186	0.00520	0.0150	mg/L	1.00	1					
Cadmium	U	0.00100	0.000300	0.00100	mg/L	1.00	1					
Calcium		20.3	0.0800	0.200	mg/L	1.00	1					
Chromium	U	0.0100	0.00300	0.0100	mg/L	1.00	1					
Cobalt		0.00466	0.000300	0.00100	mg/L	1.00	1					
Copper	J	0.00152	0.000300	0.00200	mg/L	1.00	1					
Iron		0.132	0.0330	0.100	mg/L	1.00	1					
Lead	U	0.00200	0.000500	0.00200	mg/L	1.00	1					
Magnesium		8.31	0.0100	0.0300	mg/L	1.00	1					
Molybdenum	J	0.000917	0.000200	0.00100	mg/L	1.00	1					
Nickel		0.00353	0.000600	0.00200	mg/L	1.00	1					
Potassium	J	0.281	0.0800	0.300	mg/L	1.00	1					
Selenium	U	0.00500	0.00150	0.00500	mg/L	1.00	1					
Silver	U	0.00100	0.000300	0.00100	mg/L	1.00	1					
Thallium	U	0.00200	0.000600	0.00200	mg/L	1.00	1					
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00	1					
Vanadium	U	0.0200	0.00330	0.0200	mg/L	1.00	1					
Zinc	U	0.0200	0.00330	0.0200	mg/L	1.00	1					
Solids Analysis												
160.1, Dissolved Solid	s "As Receive	ed"										
Total Dissolved Solids		364	2.38	10.0	mg/L			KLP1	07/29/24	1242	2647734	13
Spectrometric Analysis	S											
410.4, Chem. Oxygen	Demand "As l	Received"										
COD	N	22.4	8.95	20.0	mg/L		1	HH2	07/26/24	1909	2646268	14
Volatile Organics												
8260D, Volatiles- full	suite "As Rec	eived"										
1,1,1,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1	JB6	07/29/24	0248	2647144	15
1,1,1-Trichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1,2,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1,2-Trichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1-Dichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1					
1,2,3-Trichloropropane	U	1.00	0.333	1.00	ug/L		1					
1,2-Dibromoethane	U	1.00	0.333	1.00	ug/L		1					

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW386SG4-24 Project: FRNP00511 Sample ID: 677151005 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
Volatile Organics									
8260D, Volatiles- full s	suite "As Rec	eived"							
1,2-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloroethane	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloropropane	U	1.00	0.333	1.00	ug/L		1		
1,4-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
2-Butanone	U	5.00	1.67	5.00	ug/L		1		
2-Hexanone	U	5.00	1.67	5.00	ug/L		1		
4-Methyl-2-pentanone	U	5.00	1.67	5.00	ug/L		1		
Acetone	U	5.00	1.74	5.00	ug/L		1		
Acrolein	U	5.00	1.67	5.00	ug/L		1		
Acrylonitrile	U	5.00	1.67	5.00	ug/L		1		
Benzene	U	1.00	0.333	1.00	ug/L		1		
Bromochloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromodichloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromoform	U	1.00	0.333	1.00	ug/L		1		
Bromomethane	U	1.00	0.337	1.00	ug/L		1		
Carbon disulfide	U	5.00	1.67	5.00	ug/L		1		
Carbon tetrachloride	U	1.00	0.333	1.00	ug/L		1		
Chlorobenzene	U	1.00	0.333	1.00	ug/L		1		
Chloroethane	U	1.00	0.333	1.00	ug/L		1		
Chloroform	U	1.00	0.333	1.00	ug/L		1		
Chloromethane	U	1.00	0.333	1.00	ug/L		1		
Dibromochloromethane	U	1.00	0.333	1.00	ug/L		1		
Dibromomethane	U	1.00	0.333	1.00	ug/L		1		
Ethylbenzene	U	1.00	0.333	1.00	ug/L		1		
Iodomethane	U	5.00	1.67	5.00	ug/L		1		
Methylene chloride	U	5.00	0.500	5.00	ug/L		1		
Styrene	U	1.00	0.333	1.00	ug/L		1		
Tetrachloroethylene	U	1.00	0.333	1.00	ug/L		1		
Toluene	U	1.00	0.333	1.00	ug/L		1		
Trichloroethylene	U	1.00	0.333	1.00	ug/L		1		
Trichlorofluoromethane	U	1.00	0.333	1.00	ug/L		1		
Vinyl acetate	U	5.00	1.67	5.00	ug/L		1		
Vinyl chloride	U	1.00	0.333	1.00	ug/L		1		
Xylenes (total)	U	3.00	1.00	3.00	ug/L		1		
cis-1,2-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1		
cis-1,3-Dichloropropylene	U	1.00	0.333	1.00	ug/L		1		

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Certificate of Analysis

Report Date: October 31, 2024

DF Analyst Date Time Batch Method

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Qualifier

8260D, Volatiles- full suite "As Received"

Project: C-746-S&T Landfill Quarterly(SG24-04)

Result

Client Sample ID: MW386SG4-24 Project: FRNP00511 Sample ID: 677151005 Client ID: FRNP005

DL

RL

Units

PF

0200D, Volutiles Tull St		ccivca							
trans-1,2-Dichloroethylene	U	1.00		0.333	1.0	0 ug	/L 1		
trans-1,3-Dichloropropylene	U	1.00		0.333	1.0	C			
trans-1,4-Dichloro-2-butene	U	5.00		1.67	5.0	0 ug	/L 1		
The following Prep Met	hods were p	performed:							
Method	Description	on			Analyst	Date	Tin	ne Prep Bato	ch
SW846 3005A	ICP-MS 300)5A PREP			BB2	07/26	/24 145	5 2645662	
SW846 7470A Prep	EPA 7470A	Mercury Pre	p Liquid		JM13	07/25/	/24 113	0 2646040	
SW846 8011 PREP	8011 Prep				LOF	07/26	/24 145	1 2645907	
SW846 9010C Distillation	SW846 901	0C Prep			ES2	07/25/	/24 125	1 2645989	
The following Analytic	al Methods	were perfe	ormed:						
Method	Descriptio	n					Analyst C	omments	
1	SW846 8011	l							
2	SW846 9060)A							
3	SW846 9012	2B							
4	SW846 9020)B							
5	EPA 300.0								
6	SW846 9056	δA							
7	SW846 9056	5A							
8	SW846 9056	5A							
9	SW846 7470)A							
10	SW846 3005	5A/6020B							
11	SW846 3005	5A/6020B							
12	SW846 3005	5A/6020B							
13	EPA 160.1								
14	EPA 410.4								
15	SW846 8260)D							
Surrogate/Tracer Recov	ery Test					Result	Nominal	Recovery%	Acceptable Limits
1-Chloro-2-fluorobenzene			unds Liquid "As Receiv	ed"		6.79 ug/L	6.90	98	(56%-149%)
Bromofluorobenzene	8260E	, Volatiles- f	ull suite "As Received"			48.7 ug/L	50.0	97	(74%-123%)
1,2-Dichloroethane-d4	8260₽	, Volatiles- f	ull suite "As Received"			49.3 ug/L	50.0	99	(76%-127%)
Toluene-d8	8260E), Volatiles- f	ull suite "As Received"			51.0 ug/L	50.0	102	(77%-121%)

Parameter

Volatile Organics

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW386SG4-24 Project: FRNP00511 Sample ID: 677151005 Client ID: FRNP005

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW386SG4-24 Sample ID: 677151006

Matrix: WG

Collect Date: 23-JUL-24 09:45
Receive Date: 24-JUL-24
Collector: Client

Project: FRNP00511 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Time Batch	Method
Metals Analysis-ICP-N	1S									
6020, Dissolved Metals	s (3 Elements)) "As Received"								
Barium		0.151	0.000670	0.00400	mg/L	1.00	1	PRB 08/10/2	4 1729 2645663	1
Chromium	U	0.0100	0.00300	0.0100	mg/L	1.00	1			
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00	1			
The following Prep Me	thods were pe	erformed:								
Method	Description	n		Analyst	Date	,	Time	e Prep Batc	h	
EPA 160	Laboratory Fi	iltration		SD	07/24/24		1257	2645596		
SW846 3005A	ICP-MS 3005	5A PREP		BB2	07/26/24		1455	2645662		
The following Analyti	cal Methods v	were performed:								
Method	Description	1			Α	Analyst	Coı	mments		
1	SW846 3005A	A/6020B								

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: October 31, 2024

FRNP00511

FRNP005

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW390SG4-24

Sample ID: 677151007

Matrix: WG

Collect Date: 23-JUL-24 07:23
Receive Date: 24-JUL-24
Collector: Client

504.1/8011 Analysis of EDB/DBCP 8011, VOA Compounds Liquid "As Received" 1,2-Dibromo-3-chloropropane U 0.0188 Carbon Analysis	0.00846	0.0188	ug/L	0.940	1	LOF	07/27/24	01.42		
1,2-Dibromo-3-chloropropane U 0.0188		0.0188	ug/L	0.940	1	LOF	07/27/24	01.42		
		0.0188	ug/L	0.940	1	LOF	07/27/24	01.10		
Carbon Analysis	0.330					LOI	07/27/24	0143	2645909	1
	0.330									
9060A, Total Organic Carbon "As Received"	0.330									
Total Organic Carbon Average J 1.93		2.00	mg/L		1	KB3	08/16/24	1413	2656554	2
Flow Injection Analysis										
9012B, Total Cyanide "As Received"										
Cyanide, Total U 0.200	0.00167	0.200	mg/L	1.00	1	AXH3	07/26/24	0836	2645990	3
Halogen Analysis										
9020B, TOX (Organic Halogen) "As Received"										
Total Organic Halogens 12.0	3.33	10.0	ug/L		1	JS13	08/09/24	1755	2653933	4
Ion Chromatography										
300.0, Iodide in Liquid "As Received"										
Iodide U 0.500	0.167	0.500	mg/L		1	TXT1	08/08/24	1827	2653275	5
SW846 9056A Anions (5) "As Received"										
Chloride BJ 20.7	0.335	250	mg/L		5	TXT1	07/24/24	1756	2645599	6
Nitrate-N J 1.12	0.165	10.0	mg/L		5					
Sulfate 33.6	0.665	2.00	mg/L		5					
Bromide 0.235	0.0670	0.200	mg/L		1	TXT1	07/24/24	1446	2645599	7
Fluoride JW 0.253	0.0330	4.00	mg/L		1					
Mercury Analysis-CVAA										
7470, Mercury Liquid "As Received"										
Mercury U 0.000200	0.0000670	0.000200	mg/L	1.00	1	JP2	07/26/24	1246	2646041	8
Metals Analysis-ICP-MS										
6020, Metals (15+) "As Received"										
Sodium 91.0	0.800	2.50	mg/L	1.00	10	PRB	08/10/24	1809	2645663	9
Rhodium U 0.00500	0.00160	0.00500	mg/L	1.00	1	PRB	08/10/24	1255	2645663	10
Tantalum U 0.00500	0.00100	0.00500	mg/L	1.00	1					
Aluminum 0.100	0.0193	0.0500	mg/L	1.00	1	PRB	08/10/24	1733	2645663	11
Antimony U 0.00300	0.00100	0.00300	mg/L	1.00	1					
Arsenic U 0.00500	0.00200	0.00500	mg/L	1.00	1					
Barium 0.225	0.000670	0.00400	mg/L	1.00	1					
Beryllium U 0.000500	0.000200	0.000500	mg/L	1.00	1					
Boron 0.0221	0.00520	0.0150	mg/L	1.00	1					

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Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW390SG4-24 Project: FRNP00511 Sample ID: 677151007 Client ID: FRNP005

Metals Analysis-ICP-MS 6020, Metals (15+) "As Received" Cadmium U 0.00100 0.000300 0.00100 mg/L 1.00 1 Calcium 27.7 0.0800 0.200 mg/L 1.00 1 Cromium U 0.0100 0.00300 0.0100 mg/L 1.00 1 Crobalt U 0.00100 0.00300 0.00100 mg/L 1.00 1 Copper J 0.00173 0.000300 0.00200 mg/L 1.00 1 Lead U 0.00200 0.000500 0.00200 mg/L 1.00 1 Lead U 0.00200 0.000500 0.00200 mg/L 1.00 1 Magnesium 11.8 0.0100 0.0300 mg/L 1.00 1 Magnesium 11.8 0.0100 0.0300 mg/L 1.00 1 Magnesium J 0.000333 0.00200 mg/L 1.00 1 Nickel J 0.00150 0.00100 0.00500 mg/L 1.00 1 Nickel J 0.00150 0.000600 0.00200 mg/L 1.00 1 Nickel U 0.00200 0.000600 0.00200 mg/L 1.00 1 Nickel U 0.00100 0.000600 0.00200 mg/L 1.00 1 Nickel U 0.00100 0.000500 0.00150 0.00500 mg/L 1.00 1 Nickel U 0.00100 0.00300 0.00100 mg/L 1.00 1 Nickel U 0.00200 0.00300 0.00200 mg/L 1.00 1 Nickel U 0.00200 0.00300 0.00200 mg/L 1.00 1 Nickel U 0	Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Cadmium U 0.00100 0.000300 0.00100 mg/L 1.00 1 Calcium 27.7 0.0800 0.200 mg/L 1.00 1 Chromium U 0.0100 0.00300 0.0100 mg/L 1.00 1 Cobalt U 0.00100 0.000300 0.00100 mg/L 1.00 1 Copper J 0.00173 0.000300 0.00200 mg/L 1.00 1 Iron 0.101 0.03300 0.00200 mg/L 1.00 1 Lead U 0.00200 0.000500 0.00200 mg/L 1.00 1 Magnesium 11.8 0.0100 0.0300 mg/L 1.00 1 Molybdenum J 0.00333 0.00200 0.00100 mg/L 1.00 1 Nickel J 0.00150 0.000600 0.00200 mg/L 1.00 1 Selenium U 0.00350 0.00150	Metals Analysis-ICP-	MS											
Calcium 27.7 0.0800 0.200 mg/L 1.00 1 Chromium U 0.0100 0.00300 0.0100 mg/L 1.00 1 Cobalt U 0.00100 0.000300 0.00100 mg/L 1.00 1 Copper J 0.00173 0.000300 0.00200 mg/L 1.00 1 Iron 0.101 0.0330 0.100 mg/L 1.00 1 Lead U 0.00200 0.000500 0.00200 mg/L 1.00 1 Lead U 0.00200 0.000500 0.00200 mg/L 1.00 1 Magnesium 11.8 0.0100 0.0330 mg/L 1.00 1 Manganese J 0.00150 0.00100 0.00500 mg/L 1.00 1 Molybdenum J 0.000333 0.0000 mg/L 1.00 1 Nickel J 0.00150 0.00100 0.00500 mg/L 1.00 1 Potassium 0.347 0.0800 0.300 mg/L 1.00 1 Potassium U 0.00500 0.00100 0.000500 mg/L 1.00 1 Selenium U 0.00500 0.00150 0.000500 mg/L 1.00 1 Thallium U 0.00500 0.00150 0.00500 mg/L 1.00 1 Thallium U 0.00500 0.00150 0.000500 mg/L 1.00 1 Thallium U 0.00500 0.00160 0.00200 mg/L 1.00 1 Thallium U 0.00500 0.000600 0.00200 mg/L 1.00 1 Thallium U 0.00500 0.00330 0.0200 mg/L 1.00 1 Thallium U 0.00500 0.00330 0.0200 mg/L 1.00 1 Tolickel J 0.00648 0.00330 0.0200 mg/L 1.00 1 Thallium U 0.00500 0.00300 0.000500 mg/L 1.00 1 Thallium U 0.00500 0.00300 0.000500 mg/L 1.00 1 Thallium U 0.00500 0.00300 0.000500 mg/L 1.00 1 Thallium U 0.00500 0.00330 0.0000 mg/L 1.00 1 Thallium U 0.00500 0.00330 0.000	6020, Metals (15+) "A	As Received"											
Chromium	Cadmium	U	0.00100	0.000300	0.00100	mg/L	1.00	1					
Chromium	Calcium		27.7	0.0800	0.200	mg/L	1.00	1					
Copper	Chromium	U	0.0100	0.00300	0.0100		1.00	1					
Iron	Cobalt	U	0.00100	0.000300	0.00100	mg/L	1.00	1					
Lead	Copper	J	0.00173	0.000300	0.00200	mg/L	1.00	1					
Magnesium 11.8 0.0100 0.0300 mg/L 1.00 1 Manganese J 0.00150 0.00100 0.00500 mg/L 1.00 1 Molybdenum J 0.000333 0.000200 0.00100 mg/L 1.00 1 Nickel J 0.00150 0.000600 0.00200 mg/L 1.00 1 Potassium 0.347 0.0800 0.300 mg/L 1.00 1 Selenium U 0.00500 0.00150 0.00500 mg/L 1.00 1 Silver U 0.00100 0.000300 0.00100 mg/L 1.00 1 Thallium U 0.000200 0.000200 mg/L 1.00 1 Uranium J 0.000197 0.0000670 0.000200 mg/L 1.00 1 Vanadium U 0.0200 0.00330 0.0200 mg/L 1.00 1 Solids Analysis 355 2.38	Iron		0.101	0.0330	0.100	mg/L	1.00	1					
Manganese J 0.00150 0.00100 0.00500 mg/L 1.00 1 Molybdenum J 0.000333 0.000200 0.00100 mg/L 1.00 1 Nickel J 0.00150 0.000600 0.00200 mg/L 1.00 1 Potassium 0.347 0.0800 0.300 mg/L 1.00 1 Selenium U 0.00500 0.00150 0.00500 mg/L 1.00 1 Silver U 0.00100 0.000300 0.00100 mg/L 1.00 1 Thallium U 0.00200 0.000600 0.00200 mg/L 1.00 1 Uranium J 0.000197 0.0000600 0.00200 mg/L 1.00 1 Vanadium U 0.0200 0.00330 0.0200 mg/L 1.00 1 Solids Analysis Total Dissolved Solids "As Received" Total Dissolved Solids 355 2.38 10.0 m	Lead	U	0.00200	0.000500	0.00200	mg/L	1.00	1					
Molybdenum J 0.000333 0.000200 0.00100 mg/L 1.00 1 Nickel J 0.00150 0.000600 0.00200 mg/L 1.00 1 Potassium 0.347 0.0800 0.300 mg/L 1.00 1 Selenium U 0.00500 0.00150 0.00500 mg/L 1.00 1 Silver U 0.00100 0.000300 0.00100 mg/L 1.00 1 Thallium U 0.00200 0.000600 0.000200 mg/L 1.00 1 Uranium J 0.000197 0.0000670 0.000200 mg/L 1.00 1 Vanadium U 0.0200 0.00330 0.0200 mg/L 1.00 1 Zinc J 0.00648 0.00330 0.0200 mg/L 1.00 1 Solids Analysis 160.1, Dissolved Solids "As Received" KLP1 07/29/24 1242 2647734 12 Spectr	Magnesium		11.8	0.0100	0.0300	mg/L	1.00	1					
Nickel J 0.00150 0.000600 0.00200 mg/L 1.00 1 Potassium 0.347 0.0800 0.300 mg/L 1.00 1 Selenium U 0.00500 0.00150 0.00500 mg/L 1.00 1 Silver U 0.00100 0.000300 0.00100 mg/L 1.00 1 Thallium U 0.00200 0.000600 0.00200 mg/L 1.00 1 Uranium J 0.000197 0.000607 0.000200 mg/L 1.00 1 Vanadium U 0.00200 0.00330 0.0200 mg/L 1.00 1 Vanadium U 0.00200 0.00330 0.0200 mg/L 1.00 1 Solids Analysis 160.1, Dissolved Solids "As Received" Total Dissolved Solids "As Received" Total Dissolved Solids "As Received" COD JN 10.8 8.95 20.0 mg/L 1 1 HH2 07/26/24 1909 2646268 13 Volatile Organics	Manganese	J	0.00150	0.00100	0.00500	mg/L	1.00	1					
Potassium 0.347 0.0800 0.300 mg/L 1.00 1 Selenium U 0.00500 0.00150 0.00500 mg/L 1.00 1 Silver U 0.00100 0.000300 0.00100 mg/L 1.00 1 Thallium U 0.00200 0.000600 0.00200 mg/L 1.00 1 Uranium J 0.000197 0.0000670 0.000200 mg/L 1.00 1 Vanadium U 0.0200 0.00330 0.0200 mg/L 1.00 1 Zinc J 0.00648 0.00330 0.0200 mg/L 1.00 1 Solids Analysis 160.1, Dissolved Solids "As Received" Total Dissolved Solids 355 2.38 10.0 mg/L KLPI 07/29/24 1242 2647734 12 Spectrometric Analysis 410.4, Chem. Oxygen Demand "As Received" 8.95 20.0 mg/L 1 HH2 07/26/24	Molybdenum	J	0.000333	0.000200	0.00100	mg/L	1.00	1					
Selenium U 0.00500 0.00150 0.00500 mg/L 1.00 1 Silver U 0.00100 0.000300 0.00100 mg/L 1.00 1 Thallium U 0.00200 0.000600 0.00200 mg/L 1.00 1 Uranium J 0.000197 0.000670 0.000200 mg/L 1.00 1 Vanadium U 0.0200 0.00330 0.0200 mg/L 1.00 1 Zinc J 0.00648 0.00330 0.0200 mg/L 1.00 1 Solids Analysis 160.1, Dissolved Solids "As Received" Total Dissolved Solids 355 2.38 10.0 mg/L KLP1 07/29/24 1242 2647734 12 Spectrometric Analysis 410.4, Chem. Oxygen Demand "As Received" COD JN 10.8 8.95 20.0 mg/L 1 HH2 07/26/24 1909 2646268 13 Volatile Organ		J	0.00150	0.000600	0.00200	mg/L	1.00	1					
Silver U 0.00100 0.000300 0.00100 mg/L 1.00 1 Thallium U 0.00200 0.000600 0.00200 mg/L 1.00 1 Uranium J 0.000197 0.0000670 0.000200 mg/L 1.00 1 Vanadium U 0.0200 0.00330 0.0200 mg/L 1.00 1 Zinc J 0.00648 0.00330 0.0200 mg/L 1.00 1 Solids Analysis 160.1, Dissolved Solids "As Received" KLP1 07/29/24 1242 2647734 12 Spectrometric Analysis 410.4, Chem. Oxygen Demand "As Received" COD JN 10.8 8.95 20.0 mg/L 1 HH2 07/26/24 1909 2646268 13 Volatile Organics 1 HH2 07/26/24 1909 2646268 13	Potassium			0.0800	0.300	mg/L							
Thallium U 0.00200 0.000600 0.00200 mg/L 1.00 1 Uranium J 0.000197 0.0000670 0.000200 mg/L 1.00 1 Vanadium U 0.0200 0.00330 0.0200 mg/L 1.00 1 Zinc J 0.00648 0.00330 0.0200 mg/L 1.00 1 Solids Analysis Total Dissolved Solids "As Received" Total Dissolved Solids 355 2.38 10.0 mg/L KLPI 07/29/24 1242 2647734 12 Spectrometric Analysis 410.4, Chem. Oxygen Demand "As Received" COD JN 10.8 8.95 20.0 mg/L 1 HH2 07/26/24 1909 2646268 13 Volatile Organics	Selenium	U	0.00500	0.00150		mg/L							
Uranium J 0.000197 0.0000670 0.000200 mg/L 1.00 1 Vanadium U 0.0200 0.00330 0.0200 mg/L 1.00 1 Zinc J 0.00648 0.00330 0.0200 mg/L 1.00 1 Solids Analysis 160.1, Dissolved Solids "As Received" Total Dissolved Solids 355 2.38 10.0 mg/L KLP1 07/29/24 1242 2647734 12 Spectrometric Analysis 410.4, Chem. Oxygen Demand "As Received" Seceived" The property of t		U	0.00100	0.000300		mg/L							
Vanadium U 0.0200 0.00330 0.0200 mg/L 1.00 1 Zinc J 0.00648 0.00330 0.0200 mg/L 1.00 1 Solids Analysis 160.1, Dissolved Solids "As Received" Total Dissolved Solids 355 2.38 10.0 mg/L KLP1 07/29/24 1242 2647734 12 Spectrometric Analysis 410.4, Chem. Oxygen Demand "As Received" COD JN 10.8 8.95 20.0 mg/L 1 HH2 07/26/24 1909 2646268 13 Volatile Organics		U				_							
Zinc J 0.00648 0.00330 0.0200 mg/L 1.00 1 Solids Analysis 160.1, Dissolved Solids "As Received" Total Dissolved Solids 355 2.38 10.0 mg/L KLP1 07/29/24 1242 2647734 12 Spectrometric Analysis 410.4, Chem. Oxygen Demand "As Received" COD JN 10.8 8.95 20.0 mg/L 1 HH2 07/26/24 1909 2646268 13 Volatile Organics		J	0.000197	0.0000670		mg/L							
Solids Analysis 160.1, Dissolved Solids "As Received" Total Dissolved Solids 355 2.38 10.0 mg/L KLPI 07/29/24 1242 2647734 12 Spectrometric Analysis 410.4, Chem. Oxygen Demand "As Received" COD JN 10.8 8.95 20.0 mg/L 1 HH2 07/26/24 1909 2646268 13 Volatile Organics		U											
160.1, Dissolved Solids "As Received" Total Dissolved Solids 355 2.38 10.0 mg/L KLP1 07/29/24 1242 2647734 12 Spectrometric Analysis 410.4, Chem. Oxygen Demand "As Received" COD JN 10.8 8.95 20.0 mg/L 1 HH2 07/26/24 1909 2646268 13 Volatile Organics		J	0.00648	0.00330	0.0200	mg/L	1.00	1					
Total Dissolved Solids 355 2.38 10.0 mg/L KLP1 07/29/24 1242 2647734 12 Spectrometric Analysis 410.4, Chem. Oxygen Demand "As Received" COD JN 10.8 8.95 20.0 mg/L 1 HH2 07/26/24 1909 2646268 13 Volatile Organics	Solids Analysis												
Spectrometric Analysis 410.4, Chem. Oxygen Demand "As Received" COD JN 10.8 8.95 20.0 mg/L 1 HH2 07/26/24 1909 2646268 13 Volatile Organics	160.1, Dissolved Soli	ds "As Receive	ed"										
410.4, Chem. Oxygen Demand "As Received" COD JN 10.8 8.95 20.0 mg/L 1 HH2 07/26/24 1909 2646268 13 Volatile Organics	Total Dissolved Solids		355	2.38	10.0	mg/L			KLP1	07/29/24	1242	2647734	12
COD JN 10.8 8.95 20.0 mg/L 1 HH2 07/26/24 1909 2646268 13 Volatile Organics	Spectrometric Analys	is											
Volatile Organics	410.4, Chem. Oxygen	Demand "As I	Received"										
· · · · · · · · · · · · · · · · · · ·	COD	JN	10.8	8.95	20.0	mg/L		1	HH2	07/26/24	1909	2646268	13
9260D Valatilas full suita "As Pasaiyad"	Volatile Organics												
8260D, Volatiles- full suite "As Received"	8260D, Volatiles- full	suite "As Rec	eived"										
1,1,1,2-Tetrachloroethane U 1.00 0.333 1.00 ug/L 1 JB6 07/29/24 0313 2647144 14	1,1,1,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1	JB6	07/29/24	0313	2647144	14
1,1,1-Trichloroethane U 1.00 0.333 1.00 ug/L 1	1,1,1-Trichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1,2,2-Tetrachloroethane U 1.00 0.333 1.00 ug/L 1	1,1,2,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1,2-Trichloroethane U 1.00 0.333 1.00 ug/L 1	1,1,2-Trichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1-Dichloroethane U 1.00 0.333 1.00 ug/L 1	1,1-Dichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1-Dichloroethylene U 1.00 0.333 1.00 ug/L 1	1,1-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1					
1,2,3-Trichloropropane U 1.00 0.333 1.00 ug/L 1	1,2,3-Trichloropropane	U	1.00	0.333	1.00	ug/L		1					
1,2-Dibromoethane U 1.00 0.333 1.00 ug/L 1	1,2-Dibromoethane	U	1.00	0.333	1.00	ug/L		1					

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW390SG4-24 Project: FRNP00511 Sample ID: 677151007 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
Volatile Organics									
8260D, Volatiles- full s	suite "As Rec	eived"							
1,2-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloroethane	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloropropane	U	1.00	0.333	1.00	ug/L		1		
1,4-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
2-Butanone	U	5.00	1.67	5.00	ug/L		1		
2-Hexanone	U	5.00	1.67	5.00	ug/L		1		
4-Methyl-2-pentanone	U	5.00	1.67	5.00	ug/L		1		
Acetone	U	5.00	1.74	5.00	ug/L		1		
Acrolein	U	5.00	1.67	5.00	ug/L		1		
Acrylonitrile	U	5.00	1.67	5.00	ug/L		1		
Benzene	U	1.00	0.333	1.00	ug/L		1		
Bromochloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromodichloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromoform	U	1.00	0.333	1.00	ug/L		1		
Bromomethane	U	1.00	0.337	1.00	ug/L		1		
Carbon disulfide	U	5.00	1.67	5.00	ug/L		1		
Carbon tetrachloride	U	1.00	0.333	1.00	ug/L		1		
Chlorobenzene	U	1.00	0.333	1.00	ug/L		1		
Chloroethane	U	1.00	0.333	1.00	ug/L		1		
Chloroform	U	1.00	0.333	1.00	ug/L		1		
Chloromethane	U	1.00	0.333	1.00	ug/L		1		
Dibromochloromethane	U	1.00	0.333	1.00	ug/L		1		
Dibromomethane	U	1.00	0.333	1.00	ug/L		1		
Ethylbenzene	U	1.00	0.333	1.00	ug/L		1		
Iodomethane	U	5.00	1.67	5.00	ug/L		1		
Methylene chloride	U	5.00	0.500	5.00	ug/L		1		
Styrene	U	1.00	0.333	1.00	ug/L		1		
Tetrachloroethylene	U	1.00	0.333	1.00	ug/L		1		
Toluene	U	1.00	0.333	1.00	ug/L		1		
Trichloroethylene	U	1.00	0.333	1.00	ug/L		1		
Trichlorofluoromethane	U	1.00	0.333	1.00	ug/L		1		
Vinyl acetate	U	5.00	1.67	5.00	ug/L		1		
Vinyl chloride	U	1.00	0.333	1.00	ug/L		1		
Xylenes (total)	U	3.00	1.00	3.00	ug/L		1		
cis-1,2-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1		
cis-1,3-Dichloropropylene	U	1.00	0.333	1.00	ug/L		1		

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Certificate of Analysis

Report Date: October 31, 2024

DF Analyst Date Time Batch Method

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Qualifier

Project: C-746-S&T Landfill Quarterly(SG24-04)

Result

Client Sample ID: MW390SG4-24 Project: FRNP00511 Sample ID: 677151007 Client ID: FRNP005

DL

RL

Units

PF

Volume Organies								
8260D, Volatiles- full s	uite "As Recei	ved"						
trans-1,2-Dichloroethylene	U	1.00	0.333	1.00) ug/]	L 1		
trans-1,3-Dichloropropylene	U	1.00	0.333	1.00	ug/1	L 1		
trans-1,4-Dichloro-2-butene	U	5.00	1.67	5.00) ug/]	L 1		
The following Prep Met	thods were per	formed:						
Method	Description			Analyst	Date	Tim	e Prep Batc	h
SW846 8011 PREP	8011 Prep			LOF	07/26/2	24 1451	2645907	
SW846 3005A	ICP-MS 3005A	PREP		BB2	07/26/2	24 1455	2645662	
SW846 7470A Prep	EPA 7470A Me	ercury Prep Liquid		JM13	07/25/2	24 1130	2646040	
SW846 9010C Distillation	SW846 9010C	Prep		ES2	07/25/2	24 1251	2645989	
The following Analytic	al Methods we	ere performed:						
Method	Description					Analyst Co	mments	
1	SW846 8011					-		
2	SW846 9060A							
3	SW846 9012B							
4	SW846 9020B							
5	EPA 300.0							
6	SW846 9056A							
7	SW846 9056A							
8	SW846 7470A							
9	SW846 3005A/6	6020B						
10	SW846 3005A/6	6020B						
11	SW846 3005A/6	6020B						
12	EPA 160.1							
13	EPA 410.4							
14	SW846 8260D							
Surrogate/Tracer Recov	ery Test				Result	Nominal	Recovery%	Acceptable Limits
1-Chloro-2-fluorobenzene	8011, VO	A Compounds Liquid "As Receiv	ed"		7.22 ug/L	6.72	107	(56%-149%)
Bromofluorobenzene	8260D, V	'olatiles- full suite "As Received"			50.3 ug/L	50.0	101	(74%-123%)
1,2-Dichloroethane-d4	8260D, V	'olatiles- full suite "As Received"			49.8 ug/L	50.0	100	(76%-127%)
Toluene-d8	8260D, V	olatiles- full suite "As Received"			51.1 ug/L	50.0	102	(77%-121%)

Parameter

Volatile Organics

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW390SG4-24 Project: FRNP00511 Sample ID: 677151007 Client ID: FRNP005

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW390SG4-24 Sample ID: 677151008

Matrix: WG

Collect Date: 23-JUL-24 07:23
Receive Date: 24-JUL-24
Collector: Client

Project: FRNP00511 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF .	Analyst Date	Time Batch	Method
Metals Analysis-ICP-M	1S									
6020, Dissolved Metals	s (3 Elements)	"As Received"								
Barium		0.230	0.000670	0.00400	mg/L	1.00	1	PRB 08/10/24	1737 2645663	1
Chromium	U	0.0100	0.00300	0.0100	mg/L	1.00	1			
Uranium	J	0.000190	0.0000670	0.000200	mg/L	1.00	1			
The following Prep Me	thods were pe	erformed:								
Method	Description	1		Analyst	Date	-	Гіте	Prep Batch		
EPA 160	Laboratory Fi	ltration		SD	07/24/24		1257	2645596		
SW846 3005A	ICP-MS 3005	A PREP		BB2	07/26/24		1455	2645662		
The following Analyti	cal Methods v	vere performed:								
Method	Description				A	Analyst	Com	nments		
1	SW846 3005A	\/6020B								

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

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Certificate of Analysis

Project:

Client ID:

Report Date: October 31, 2024

FRNP00511

FRNP005

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW391SG4-24

Sample ID: 677151009

Matrix: WG

Collect Date: 23-JUL-24 10:28 Receive Date: 24-JUL-24 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time Batc	h Method
504.1/8011 Analysis of	EDB/DBCP										
8011, VOA Compounds	s Liquid "As	Received"									
1,2-Dibromo-3-chloropropane	•	0.0186	0.00836	0.0186	ug/L	0.928	1	LOF	07/27/24	0213 26459	09 1
Carbon Analysis											
9060A, Total Organic C	Carbon "As R	eceived"									
Total Organic Carbon Averag	ge J	0.462	0.330	2.00	mg/L		1	KB3	08/16/24	1444 26565	54 2
Flow Injection Analysis	3										
9012B, Total Cyanide "	'As Received'	"									
Cyanide, Total	U	0.200	0.00167	0.200	mg/L	1.00	1	AXH3	07/26/24	0837 26459	90 3
Halogen Analysis											
9020B, TOX (Organic I	Halogen) "As	Received"									
Total Organic Halogens	υ,	21.0	3.33	10.0	ug/L		1	JS13	08/09/24	1834 26539	33 4
Ion Chromatography											
300.0, Iodide in Liquid	"As Received	d"									
Iodide	U	0.500	0.167	0.500	mg/L		1	TXT1	08/08/24	1840 26532	75 5
SW846 9056A Anions ((5) "As Recei	ived"									
Chloride	ВЈ	42.0	0.335	250	mg/L		5	TXT1	07/24/24	1932 26455	99 6
Nitrate-N	J	1.19	0.165	10.0	mg/L		5				
Bromide		0.490	0.0670	0.200	mg/L		1	TXT1	07/24/24	1518 26455	99 7
Fluoride	JW	0.129	0.0330	4.00	mg/L		1				
Sulfate		12.2	0.133	0.400	mg/L		1				
Mercury Analysis-CVA	λA										
7470, Mercury Liquid "	As Received	"									
Mercury	U	0.000200	0.0000670	0.000200	mg/L	1.00	1	JP2	07/26/24	1252 26460	41 8
Metals Analysis-ICP-M	IS										
6020, Metals (15+) "As	Received"										
Rhodium	U	0.00500	0.00160	0.00500	mg/L	1.00	1	PRB	08/10/24	1257 26456	63 9
Tantalum	U	0.00500	0.00100	0.00500	mg/L	1.00	1				
Aluminum	J	0.0224	0.0193	0.0500	mg/L	1.00	1	PRB	08/10/24	1740 26456	63 10
Antimony	U	0.00300	0.00100	0.00300	mg/L	1.00	1				
Arsenic	U	0.00500	0.00200	0.00500	mg/L	1.00	1				
Barium		0.210	0.000670	0.00400	mg/L	1.00	1				
Beryllium	U	0.000500	0.000200	0.000500	mg/L	1.00	1				
Boron		0.0241	0.00520	0.0150	mg/L	1.00	1				
Cadmium	U	0.00100	0.000300	0.00100	mg/L	1.00	1				

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW391SG4-24 Project: FRNP00511 Sample ID: 677151009 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Metals Analysis-ICP-M	1S											
6020, Metals (15+) "As	Received"											
Calcium		24.7	0.0800	0.200	mg/L	1.00	1					
Chromium	U	0.0100	0.00300	0.0100	mg/L	1.00	1					
Cobalt	U	0.00100	0.000300	0.00100	mg/L	1.00	1					
Copper	J	0.000621	0.000300	0.00200	mg/L	1.00	1					
Iron		0.125	0.0330	0.100	mg/L	1.00	1					
Lead	U	0.00200	0.000500	0.00200	mg/L	1.00	1					
Magnesium		10.3	0.0100	0.0300	mg/L	1.00						
Manganese	J	0.00221	0.00100	0.00500	mg/L	1.00	1					
Molybdenum	U	0.00100	0.000200	0.00100	mg/L	1.00	1					
Nickel	U	0.00200	0.000600	0.00200	mg/L	1.00						
Potassium		1.41	0.0800	0.300	mg/L	1.00						
Selenium	U	0.00500	0.00150	0.00500	mg/L	1.00						
Silver	U	0.00100	0.000300	0.00100	mg/L	1.00						
Sodium		31.4	0.0800	0.250	mg/L	1.00						
Thallium	U	0.00200	0.000600	0.00200	mg/L	1.00						
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00						
Vanadium	U	0.0200	0.00330	0.0200	mg/L	1.00						
Zinc	U	0.0200	0.00330	0.0200	mg/L	1.00	1					
Solids Analysis												
160.1, Dissolved Solids	s "As Receive	ed"										
Total Dissolved Solids		182	2.38	10.0	mg/L			KLP1	07/29/24	1242	2647734	11
Spectrometric Analysis	1											
410.4, Chem. Oxygen I	Demand "As l	Received"										
COD	JN	10.8	8.95	20.0	mg/L		1	HH2	07/26/24	1909	2646268	12
Volatile Organics												
8260D, Volatiles- full s	suite "As Rec	eived"										
1,1,1,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1	JB6	07/26/24	2005	2647144	13
1,1,1-Trichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1,2,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1,2-Trichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1-Dichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1					
1,2,3-Trichloropropane	U	1.00	0.333	1.00	ug/L		1					
1,2-Dibromoethane	U	1.00	0.333	1.00	ug/L		1					

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW391SG4-24 Project: FRNP00511 Sample ID: 677151009 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
Volatile Organics									
8260D, Volatiles- full s	suite "As Rec	eived"							
1,2-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloroethane	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloropropane	U	1.00	0.333	1.00	ug/L		1		
1,4-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
2-Butanone	U	5.00	1.67	5.00	ug/L		1		
2-Hexanone	U	5.00	1.67	5.00	ug/L		1		
4-Methyl-2-pentanone	U	5.00	1.67	5.00	ug/L		1		
Acetone	U	5.00	1.74	5.00	ug/L		1		
Acrolein	U	5.00	1.67	5.00	ug/L		1		
Acrylonitrile	U	5.00	1.67	5.00	ug/L		1		
Benzene	U	1.00	0.333	1.00	ug/L		1		
Bromochloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromodichloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromoform	U	1.00	0.333	1.00	ug/L		1		
Bromomethane	U	1.00	0.337	1.00	ug/L		1		
Carbon disulfide	U	5.00	1.67	5.00	ug/L		1		
Carbon tetrachloride	U	1.00	0.333	1.00	ug/L		1		
Chlorobenzene	U	1.00	0.333	1.00	ug/L		1		
Chloroethane	U	1.00	0.333	1.00	ug/L		1		
Chloroform	U	1.00	0.333	1.00	ug/L		1		
Chloromethane	U	1.00	0.333	1.00	ug/L		1		
Dibromochloromethane	U	1.00	0.333	1.00	ug/L		1		
Dibromomethane	U	1.00	0.333	1.00	ug/L		1		
Ethylbenzene	U	1.00	0.333	1.00	ug/L		1		
Iodomethane	U	5.00	1.67	5.00	ug/L		1		
Methylene chloride	U	5.00	0.500	5.00	ug/L		1		
Styrene	U	1.00	0.333	1.00	ug/L		1		
Tetrachloroethylene	U	1.00	0.333	1.00	ug/L		1		
Toluene	U	1.00	0.333	1.00	ug/L		1		
Trichloroethylene	J	0.470	0.333	1.00	ug/L		1		
Trichlorofluoromethane	U	1.00	0.333	1.00	ug/L		1		
Vinyl acetate	U	5.00	1.67	5.00	ug/L		1		
Vinyl chloride	U	1.00	0.333	1.00	ug/L		1		
Xylenes (total)	U	3.00	1.00	3.00	ug/L		1		
cis-1,2-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1		
cis-1,3-Dichloropropylene	U	1.00	0.333	1.00	ug/L		1		

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Certificate of Analysis

Report Date: October 31, 2024

DF Analyst Date Time Batch Method

102

(77% - 121%)

50.0

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Qualifier

Project: C-746-S&T Landfill Quarterly(SG24-04)

Result

8260D, Volatiles- full suite "As Received"

Client Sample ID: MW391SG4-24 Project: FRNP00511 Sample ID: 677151009 Client ID: FRNP005

DL

RL

Units

PF

voidence organics										
8260D, Volatiles- full s	uite "As F	Receiv	ved"							
trans-1,2-Dichloroethylene		U	1.00	0.333		1.00	ug/L	1		
trans-1,3-Dichloropropylene		U	1.00	0.333		1.00	ug/L	1		
trans-1,4-Dichloro-2-butene		U	5.00	1.67		5.00	ug/L	1		
The following Prep Met	thods wer	e perf	Formed:							
Method	Descrip	otion			Analy	st	Date	Tim	e Prep Bato	ch
SW846 3005A	ICP-MS	3005A	PREP		BB2		07/26/24	1455	2645662	
SW846 9010C Distillation	SW846 9	010C I	Prep		ES2		07/25/24	1251	2645989	
SW846 7470A Prep	EPA 747	0A Me	rcury Prep Liquid		JM13		07/25/24	1130	2646040	
SW846 8011 PREP	8011 Pre	p			LOF		07/26/24	1451	2645907	
The following Analytic	al Metho	ds we	re performed:							
Method	Descrip	tion						Analyst Co	mments	
1	SW846 80	011								
2	SW846 90	060A								
3	SW846 90	012B								
4	SW846 90	020B								
5	EPA 300.	.0								
6	SW846 90	056A								
7	SW846 90	056A								
8	SW846 74	470A								
9	SW846 30	005A/6	020B							
10	SW846 30	005A/6	020B							
11	EPA 160.	.1								
12	EPA 410.	.4								
13	SW846 82	260D								
Surrogate/Tracer Recov	ery Te	est				Res	ult	Nominal	Recovery%	Acceptable Limits
1-Chloro-2-fluorobenzene	801	11, VO	A Compounds Liquid "As	Received"		6.73	ug/L	6.63	102	(56%-149%)
Bromofluorobenzene	826	50D, Vo	olatiles- full suite "As Rec	eived"		48.9	ug/L	50.0	98	(74%-123%)
1,2-Dichloroethane-d4	826	60D, V	olatiles- full suite "As Rec	eived"		49.2	ug/L	50.0	98	(76%-127%)

Notes:

Toluene-d8

Parameter

Volatile Organics

51.1 ug/L

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW391SG4-24 Project: FRNP00511 Sample ID: 677151009 Client ID: FRNP005

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

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Certificate of Analysis

Report Date: October 31, 2024

FRNP00511

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW391SG4-24 Sample ID: 677151010

Matrix: WG

Collect Date: 23-JUL-24 10:28 Receive Date: 24-JUL-24 Collector: Client

Client ID: FRNP005

Project:

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Time Batch	Method
Metals Analysis-ICP-M	S									
6020, Dissolved Metals	(3 Elements)	"As Received"								
Barium		0.214	0.000670	0.00400	mg/L	1.00	1	PRB 08/10/24	1744 2645663	1
Chromium	U	0.0100	0.00300	0.0100	mg/L	1.00	1			
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00	1			
The following Prep Met	hods were pe	rformed:								
Method	Description	l		Analyst	Date		Time	Prep Batch		
EPA 160	Laboratory Fil	ltration		SD	07/24/24		1257	2645596		
SW846 3005A	ICP-MS 3005	A PREP		BB2	07/26/24		1455	2645662		
The following Analytic	al Methods w	vere performed:								
Method	Description				A	Analys	t Con	nments		
1	SW846 3005A	/6020B								

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

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Certificate of Analysis

Report Date: October 31, 2024

Four Rivers Nuclear Partnership, LLC Company:

5600 Hobbs Road Address:

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW392SG4-24

Sample ID: 677151011

Matrix: WG

Collect Date: 23-JUL-24 11:10 Receive Date: 24-JUL-24 Collector: Client

Project: FRNP00511 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
504.1/8011 Analysis of 3	EDB/DBCP											
8011, VOA Compounds	Liquid "As	Received"										
1,2-Dibromo-3-chloropropane	U	0.0191	0.00858	0.0191	ug/L	0.953	1	LOF	07/27/24	0243	2645909	1
Carbon Analysis												
9060A, Total Organic C	arbon "As R	eceived"										
Total Organic Carbon Average		0.510	0.330	2.00	mg/L		1	KB3	08/16/24	1515	2656554	2
Flow Injection Analysis												
9012B, Total Cyanide "A	As Received	•										
Cyanide, Total	U	0.200	0.00167	0.200	mg/L	1.00	1	AXH3	07/26/24	0838	2645990	3
Halogen Analysis					Ü							
9020B, TOX (Organic H	Halogen) "As	Received"										
Total Organic Halogens	J	8.76	3.33	10.0	ug/L		1	JS13	08/09/24	1935	2653933	4
Ion Chromatography					J							
300.0, Iodide in Liquid '	'As Received	1"										
Iodide	U	0.500	0.167	0.500	mg/L		1	TXT1	08/12/24	1216	2654903	5
SW846 9056A Anions (5) "As Recei				8							
Chloride	BJ	41.6	0.670	250	mg/L		10	TXT1	07/24/24	2036	2645599	6
Bromide		0.525	0.0670	0.200	mg/L		1	TXT1	07/24/24	1549	2645599	7
Fluoride	JW	0.167	0.0330	4.00	mg/L		1					
Sulfate		7.73	0.133	0.400	mg/L		1					
Nitrate-N	J	0.677	0.0660	10.0	mg/L		2	TXT1	07/24/24	2004	2645599	8
Mercury Analysis-CVA												
7470, Mercury Liquid "A	As Received	"										
Mercury	U	0.000200	0.0000670	0.000200	mg/L	1.00	1	JP2	07/26/24	1253	2646041	9
Metals Analysis-ICP-MS	S											
6020, Metals (15+) "As	Received"											
Rhodium	U	0.00500	0.00160	0.00500	mg/L	1.00	1	PRB	08/10/24	1259	2645663	10
Tantalum	U	0.00500	0.00100	0.00500	mg/L	1.00	1					
Aluminum	J	0.0219	0.0193	0.0500	mg/L	1.00	1	PRB	08/10/24	1747	2645663	11
Antimony	U	0.00300	0.00100	0.00300	mg/L	1.00	1					
Arsenic	U	0.00500	0.00200	0.00500	mg/L	1.00	1					
Barium		0.305	0.000670	0.00400	mg/L	1.00	1					
Beryllium	U	0.000500	0.000200	0.000500	mg/L	1.00	1					
Boron		0.0211	0.00520	0.0150	mg/L	1.00	1					
Cadmium	U	0.00100	0.000300	0.00100	mg/L	1.00	1					

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW392SG4-24 Project: FRNP00511 Sample ID: 677151011 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Metals Analysis-ICP-M	1S											
6020, Metals (15+) "As	Received"											
Calcium		22.7	0.0800	0.200	mg/L	1.00	1					
Chromium	U	0.0100	0.00300	0.0100	mg/L	1.00	1					
Cobalt	J	0.000313	0.000300	0.00100	mg/L	1.00	1					
Copper	J	0.000956	0.000300	0.00200	mg/L	1.00	1					
Iron		0.202	0.0330	0.100	mg/L	1.00	1					
Lead	U	0.00200	0.000500	0.00200	mg/L	1.00	1					
Magnesium		9.70	0.0100	0.0300	mg/L	1.00	1					
Manganese		0.198	0.00100	0.00500	mg/L	1.00	1					
Molybdenum	U	0.00100	0.000200	0.00100	mg/L	1.00	1					
Nickel		0.00223	0.000600	0.00200	mg/L	1.00	1					
Potassium		2.03	0.0800	0.300	mg/L	1.00	1					
Selenium	U	0.00500	0.00150	0.00500	mg/L	1.00	1					
Silver	U	0.00100	0.000300	0.00100	mg/L	1.00	1					
Sodium		23.5	0.0800	0.250	mg/L	1.00	1					
Thallium	U	0.00200	0.000600	0.00200	mg/L	1.00	1					
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00	1					
Vanadium	U	0.0200	0.00330	0.0200	mg/L	1.00	1					
Zinc	U	0.0200	0.00330	0.0200	mg/L	1.00	1					
Solids Analysis												
160.1, Dissolved Solids	s "As Receive	d"										
Total Dissolved Solids		172	2.38	10.0	mg/L			KLP1	07/29/24	1242	2647734	12
Spectrometric Analysis												
410.4, Chem. Oxygen I	Demand "As I	Received"										
COD	UN	20.0	8.95	20.0	mg/L		1	HH2	07/26/24	1909	2646268	13
Volatile Organics												
8260D, Volatiles- full s	suite "As Rece	eived"										
1,1,1,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1	JB6	07/29/24	0338	2647144	14
1,1,1-Trichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1,2,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1,2-Trichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1-Dichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1					
1,2,3-Trichloropropane	U	1.00	0.333	1.00	ug/L		1					
1,2-Dibromoethane	U	1.00	0.333	1.00	ug/L		1					

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW392SG4-24 Project: FRNP00511 Sample ID: 677151011 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
Volatile Organics									
8260D, Volatiles- full s	suite "As Rec	eived"							
1,2-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloroethane	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloropropane	U	1.00	0.333	1.00	ug/L		1		
1,4-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
2-Butanone	U	5.00	1.67	5.00	ug/L		1		
2-Hexanone	U	5.00	1.67	5.00	ug/L		1		
4-Methyl-2-pentanone	U	5.00	1.67	5.00	ug/L		1		
Acetone	U	5.00	1.74	5.00	ug/L		1		
Acrolein	U	5.00	1.67	5.00	ug/L		1		
Acrylonitrile	U	5.00	1.67	5.00	ug/L		1		
Benzene	U	1.00	0.333	1.00	ug/L		1		
Bromochloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromodichloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromoform	U	1.00	0.333	1.00	ug/L		1		
Bromomethane	U	1.00	0.337	1.00	ug/L		1		
Carbon disulfide	U	5.00	1.67	5.00	ug/L		1		
Carbon tetrachloride	U	1.00	0.333	1.00	ug/L		1		
Chlorobenzene	U	1.00	0.333	1.00	ug/L		1		
Chloroethane	U	1.00	0.333	1.00	ug/L		1		
Chloroform	U	1.00	0.333	1.00	ug/L		1		
Chloromethane	U	1.00	0.333	1.00	ug/L		1		
Dibromochloromethane	U	1.00	0.333	1.00	ug/L		1		
Dibromomethane	U	1.00	0.333	1.00	ug/L		1		
Ethylbenzene	U	1.00	0.333	1.00	ug/L		1		
Iodomethane	U	5.00	1.67	5.00	ug/L		1		
Methylene chloride	U	5.00	0.500	5.00	ug/L		1		
Styrene	U	1.00	0.333	1.00	ug/L		1		
Tetrachloroethylene	U	1.00	0.333	1.00	ug/L		1		
Toluene	U	1.00	0.333	1.00	ug/L		1		
Trichloroethylene		4.04	0.333	1.00	ug/L		1		
Trichlorofluoromethane	U	1.00	0.333	1.00	ug/L		1		
Vinyl acetate	U	5.00	1.67	5.00	ug/L		1		
Vinyl chloride	U	1.00	0.333	1.00	ug/L		1		
Xylenes (total)	U	3.00	1.00	3.00	ug/L		1		
cis-1,2-Dichloroethylene	J	0.440	0.333	1.00	ug/L		1		
cis-1,3-Dichloropropylene	U	1.00	0.333	1.00	ug/L		1		

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Certificate of Analysis

Report Date: October 31, 2024

DF Analyst Date Time Batch Method

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Qualifier

Parameter

Notes:

Project: C-746-S&T Landfill Quarterly(SG24-04)

Result

Client Sample ID: MW392SG4-24 Project: FRNP00511 Sample ID: 677151011 Client ID: FRNP005

DL

RL

Units

PF

	C							Butter
Volatile Organics								
8260D, Volatiles- full s	uite "As Rece	ived"						
trans-1,2-Dichloroethylene	U	1.00	0.333	1.00) ug/l	L 1		
trans-1,3-Dichloropropylene	U	1.00	0.333	1.00				
trans-1,4-Dichloro-2-butene	U	5.00	1.67	5.00	ug/1	L 1		
The following Prep Me	thods were pe	rformed:						
Method	Description	L		Analyst	Date	Time	e Prep Batc	h
SW846 8011 PREP	8011 Prep			LOF	07/26/2	24 1451	2645907	
SW846 3005A	ICP-MS 3005.	A PREP		BB2	07/26/2	24 1455	2645662	
SW846 9010C Distillation	SW846 9010C	C Prep		ES2	07/25/2	24 1251	2645989	
SW846 7470A Prep	EPA 7470A M	Iercury Prep Liquid		JM13	07/25/2	24 1130	2646040	
The following Analytic	cal Methods w	ere performed:						
Method	Description					Analyst Cor	mments	
1	SW846 8011					-		
2	SW846 9060A							
3	SW846 9012B							
4	SW846 9020B							
5	EPA 300.0							
6	SW846 9056A							
7	SW846 9056A							
8	SW846 9056A							
9	SW846 7470A							
10	SW846 3005A	/6020B						
11	SW846 3005A	/6020B						
12	EPA 160.1							
13	EPA 410.4							
14	SW846 8260D							
Surrogate/Tracer Recov	very Test				Result	Nominal	Recovery%	Acceptable Limits
1-Chloro-2-fluorobenzene	-	OA Compounds Liquid "As Receiv	ed"		7.11 ug/L	6.81	105	(56%-149%)
Bromofluorobenzene		Volatiles- full suite "As Received"			51.7 ug/L	50.0	103	(74%-123%)
1,2-Dichloroethane-d4	8260D, 3	Volatiles- full suite "As Received"			50.8 ug/L	50.0	102	(76%-127%)
Toluene-d8	8260D,	Volatiles- full suite "As Received"			51.0 ug/L	50.0	102	(77%-121%)
	,				U			

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW392SG4-24 Project: FRNP00511 Sample ID: 677151011 Client ID: FRNP005

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

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Certificate of Analysis

Project:

Client ID:

Report Date: October 31, 2024

FRNP00511

FRNP005

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW392SG4-24 Sample ID: 677151012

Matrix: WG

Collect Date: 23-JUL-24 11:10
Receive Date: 24-JUL-24
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Time Batch	Method
Metals Analysis-Io	CP-MS									
6020, Dissolved M	Ietals (3 Elements)	"As Received"								
Barium		0.295	0.000670	0.00400	mg/L	1.00	1	PRB 08/10/24	1751 2645663	1
Chromium	U	0.0100	0.00300	0.0100	mg/L	1.00	1			
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00	1			
The following Pre	p Methods were per	rformed:								
Method	Description			Analyst	Date		Time	e Prep Batch		
SW846 3005A	ICP-MS 3005	A PREP		BB2	07/26/24		1455	2645662		
EPA 160	Laboratory Fil	tration		SD	07/24/24		1257	2645596		
The following An	alytical Methods w	ere performed:								
Method	Description				A	nalvs	t Co	mments		

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

SW846 3005A/6020B

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Certificate of Analysis

Report Date: October 31, 2024

Four Rivers Nuclear Partnership, LLC Company:

5600 Hobbs Road Address:

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: TB2SG4-24 Sample ID: 677151013

Matrix: WATER

Collect Date: 23-JUL-24 06:45 Receive Date: 24-JUL-24 Collector: Client

Project: FRNP00511 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Anal	yst Date	Time	Batch	Method
504.1/8011 Analysis of	EDB/DBCP											
8011, VOA Compound	s Liquid "As	Received"										
1,2-Dibromo-3-chloropropan	e U	0.0191	0.00860	0.0191	ug/L	0.956	1	LOF	07/27/24	0313	2645909	1
Volatile Organics												
8260D, Volatiles- full s	uite "As Rec	eived"										
1,1,1,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1	JB6	07/26/24	1554	2647144	2
1,1,1-Trichloroethane	Ü	1.00	0.333	1.00	ug/L		1	020	07/20/21	100.	2017111	-
1,1,2,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1,2-Trichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1-Dichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1					
1,2,3-Trichloropropane	U	1.00	0.333	1.00	ug/L		1					
1,2-Dibromoethane	U	1.00	0.333	1.00	ug/L		1					
1,2-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1					
1,2-Dichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,2-Dichloropropane	U	1.00	0.333	1.00	ug/L		1					
1,4-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1					
2-Butanone	U	5.00	1.67	5.00	ug/L		1					
2-Hexanone	U	5.00	1.67	5.00	ug/L		1					
4-Methyl-2-pentanone	U	5.00	1.67	5.00	ug/L		1					
Acetone	U	5.00	1.74	5.00	ug/L		1					
Acrolein	U	5.00	1.67	5.00	ug/L		1					
Acrylonitrile	U	5.00	1.67	5.00	ug/L		1					
Benzene	U	1.00	0.333	1.00	ug/L		1					
Bromochloromethane	U	1.00	0.333	1.00	ug/L		1					
Bromodichloromethane	U	1.00	0.333	1.00	ug/L		1					
Bromoform	U	1.00	0.333	1.00	ug/L		1					
Bromomethane	U	1.00	0.337	1.00	ug/L		1					
Carbon disulfide	U	5.00	1.67	5.00	ug/L		1					
Carbon tetrachloride	U	1.00	0.333	1.00	ug/L		1					
Chlorobenzene	U	1.00	0.333	1.00	ug/L		1					
Chloroethane	U	1.00	0.333	1.00	ug/L		1					
Chloroform	U	1.00	0.333	1.00	ug/L		1					
Chloromethane	U	1.00	0.333	1.00	ug/L		1					
Dibromochloromethane	U	1.00	0.333	1.00	ug/L		1					
Dibromomethane	U	1.00	0.333	1.00	ug/L		1					
Ethylbenzene	U	1.00	0.333	1.00	ug/L		1					
Iodomethane	U	5.00	1.67	5.00	ug/L		1					

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: TB2SG4-24 Project: FRNP00511 Sample ID: 677151013 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF DF A	Analyst Date	Time Batch	Method
Volatile Organics									
8260D, Volatiles- full su	iite "As Rece	ived"							
Methylene chloride	U	5.00	0.500	5.00	ug/L	1			
Styrene	U	1.00	0.333	1.00	ug/L	1			
Tetrachloroethylene	U	1.00	0.333	1.00	ug/L	1			
Toluene	U	1.00	0.333	1.00	ug/L	1			
Trichloroethylene	U	1.00	0.333	1.00	ug/L	1			
Trichlorofluoromethane	U	1.00	0.333	1.00	ug/L	1			
Vinyl acetate	U	5.00	1.67	5.00	ug/L	1			
Vinyl chloride	U	1.00	0.333	1.00	ug/L	1			
Xylenes (total)	U	3.00	1.00	3.00	ug/L	1			
cis-1,2-Dichloroethylene	U	1.00	0.333	1.00	ug/L	1			
cis-1,3-Dichloropropylene	U	1.00	0.333	1.00	ug/L	1			
trans-1,2-Dichloroethylene	U	1.00	0.333	1.00	ug/L	1			
trans-1,3-Dichloropropylene	U	1.00	0.333	1.00	ug/L	1			
trans-1,4-Dichloro-2-butene	U	5.00	1.67	5.00	ug/L	1			
The following Prep Met	hods were pe	rformed:							
Method	Description	1		Analyst	Date	Time	Prep Batch		
SW846 8011 PREP	8011 Prep			LOF	07/26/24	1451	2645907		

The following Analytical Methods were performed:

Method	Description	
1	SW846 8011	
2	SW846 8260D	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1-Chloro-2-fluorobenzene	8011, VOA Compounds Liquid "As Received"	5.99 ug/L	6.83	88	(56%-149%)
Bromofluorobenzene	8260D, Volatiles- full suite "As Received"	50.8 ug/L	50.0	102	(74%-123%)
1,2-Dichloroethane-d4	8260D, Volatiles- full suite "As Received"	49.4 ug/L	50.0	99	(76%-127%)
Toluene-d8	8260D, Volatiles- full suite "As Received"	51.3 ug/L	50.0	103	(77%-121%)

Analyst Comments

Notes:

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: TB2SG4-24 Project: FRNP00511 Sample ID: 677151013 Client ID: FRNP005

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

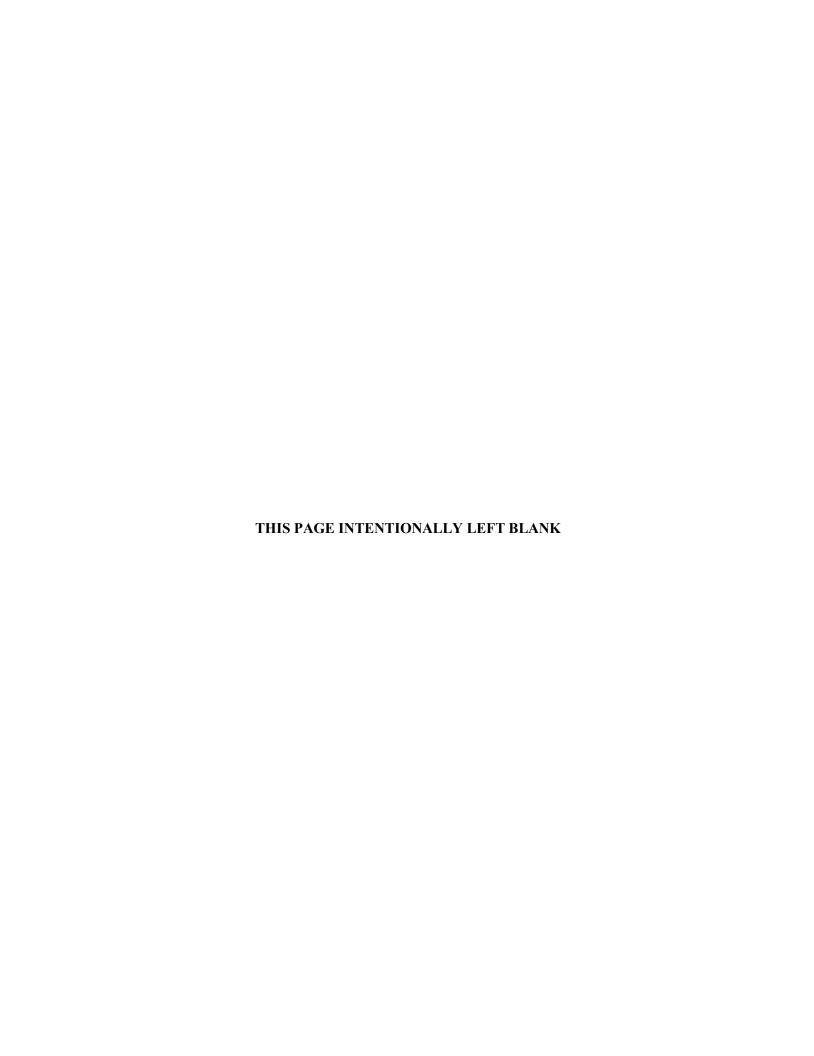
Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit



ATTACHMENT C4 GEL LABORATORIES CERTIFICATE OF ANALYSIS



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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

LLC Address:

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Project: Client ID:

FRNP00511 FRNP005

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: Sample ID: Matrix: MW387SG4-24 676868001

WG Collect Date: 22-JUL-24

Receive Date: 23-JUL-24 Collector: Client

Parameter	Qualifier	Result Un	certainty	MDC	TPU	RL	Units	PF	DF Analys	t Date	Time	Batch	Mtd.
Rad Alpha Spec Analysi	is												
AlphaSpec Ra226, Liqu	uid "As Rece	ived"											
Radium-226	U	0.892	+/-0.759	0.954	+/-0.761	5.00	pCi/L		CM4	08/04/24	1301	2646943	1
Th-01-RC M, Th Isotop	pes, Liquid ".	As Received"											
Thorium-230	U	0.0878	+/-0.375	0.736	+/-0.377	50.0	pCi/L		MB3	08/01/24	1351	2646941	2
Rad Gas Flow Proportion 905.0 Mod, Sr90, liquid		U											
Strontium-90	U	-2.32	+/-2.29	5.02	+/-2.29	8.00	pCi/L		JE1	08/08/24	1306	2645922	3
9310,Alpha/Beta Activ	ity, liquid "A	s Received"											
Alpha	U	6.61	+/-5.12	6.95	+/-5.24	15.0	pCi/L		НН3	07/31/24	1512	2645901	4
Beta		38.7	+/-8.97	9.35	+/-11.0	50.0	pCi/L						
Rad Liquid Scintillation 906.0 Mod, Tritium Di	-	s Received"											
Tritium	U	-75.2	+/-132	240	+/-132	300	pCi/L		HB2	08/17/24	1952	2649579	5
Tc-02-RC-MOD, Tc99,	, Liquid "As	Received"											
Technetium-99		34.6	+/-10.9	15.6	+/-11.6	25.0	pCi/L		GS3	08/14/24	1916	2647381	6
The fellowing Amelotics	1 M - 41 - 1												

The following Analytical Methods were performed

Method	Description
1	Eichrom Industries, AN-1418
2	DOE EML HASL-300, Th-01-RC Modified
3	EPA 905.0 Modified/DOE RP501 Rev. 1 Modified
4	EPA 900.0/SW846 9310
5	EPA 906.0 Modified
6	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	AlphaSpec Ra226, Liquid "As Received"	2646943	95.6	(30%-110%)
Thorium-229 Tracer	Th-01-RC M, Th Isotopes, Liquid "As Received"	2646941	73.2	(30%-110%)
Strontium Carrier	905.0 Mod, Sr90, liquid "As Received"	2645922	81.3	(30%-110%)
Technetium-99m Tracer	Tc-02-RC-MOD, Tc99, Liquid "As Received"	2647381	99	(30%-110%)

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW387SG4-24 Project: FRNP00511 Sample ID: Client ID: FRNP005 676868001

Parameter Result Uncertainty Units PF DF Analyst Date Time Batch Mtd. Qualifier MDC **TPU** RLSurrogate/Tracer Recovery Batch ID Recovery% Acceptable Limits

Test

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Mtd.: Method DL: Detection Limit PF: Prep Factor Lc/LC: Critical Level **RL**: Reporting Limit

MDA: Minimum Detectable Activity TPU: Total Propagated Uncertainty

MDC: Minimum Detectable Concentration

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Project:

Client ID:

FRNP00511

FRNP005

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW388SG4-24
Sample ID: 676868003
Matrix: WG
Collect Date: 22-JUL-24
Receive Date: 23-IUL-24

Receive Date: 23-JUL-24
Collector: Client

Parameter	Qualifier	Result Unc	ertainty	MDC	TPU	RL	Units	PF	DF Analys	t Date	Time	Batch 1	Mtd.
Rad Alpha Spec Ai	nalysis												
AlphaSpec Ra226	o, Liquid "As Rece	rived"											
Radium-226		1.85	+/-0.984	0.822	+/-0.992	5.00	pCi/L		CM4	08/04/24	1301	2646943	1
Th-01-RC M, Th	Isotopes, Liquid ".	'As Received"											
Thorium-230	U	0.193	+/-0.608	1.14	+/-0.611	50.0	pCi/L		MB3	08/05/24	1247	2646941	2
Rad Gas Flow Prop 905.0 Mod, Sr90,	portional Counting liquid "As Receiv	U											
Strontium-90	U	-0.500	+/-3.89	7.27	+/-3.89	8.00	pCi/L		JE1	08/08/24	1306	2645922	3
9310,Alpha/Beta	Activity, liquid "A	s Received"											
Alpha	U	2.16	+/-3.56	6.41	+/-3.59	15.0	pCi/L		НН3	07/31/24	1512	2645901	4
Beta		25.8	+/-7.82	9.26	+/-8.93	50.0	pCi/L						
Rad Liquid Scintill 906.0 Mod, Tritiu	lation Analysis um Dist, Liquid "A	s Received"											
Tritium	U	-72.0	+/-145	263	+/-145	300	pCi/L		HB2	08/17/24	2038	2649579	5
Tc-02-RC-MOD,	Tc99, Liquid "As	Received"											
Technetium-99	U	2.57	+/-10.7	18.7	+/-10.7	25.0	pCi/L		GS3	08/16/24	0542	2647381	6

The following Analytical Methods were performed

Method	Description
1	Eichrom Industries, AN-1418
2	DOE EML HASL-300, Th-01-RC Modified
3	EPA 905.0 Modified/DOE RP501 Rev. 1 Modified
4	EPA 900.0/SW846 9310
5	EPA 906.0 Modified
6	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	AlphaSpec Ra226, Liquid "As Received"	2646943	90.4	(30%-110%)
Thorium-229 Tracer	Th-01-RC M, Th Isotopes, Liquid "As Received"	2646941	87.3	(30%-110%)
Strontium Carrier	905.0 Mod, Sr90, liquid "As Received"	2645922	72.7	(30%-110%)
Technetium-99m Tracer	Tc-02-RC-MOD, Tc99, Liquid "As Received"	2647381	97.8	(30%-110%)

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW388SG4-24 Project: FRNP00511 Sample ID: 676868003 Client ID: FRNP005

Parameter Qualifier Result Uncertainty MDC TPU RL Units PF DF Analyst Date Time Batch Mtd.
Surrogate/Tracer Recovery Test Batch ID Recovery% Acceptable Limits

Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

The MDC is a sample specific MDC.

DF: Dilution Factor Mtd.: Method
DL: Detection Limit PF: Prep Factor
Lc/LC: Critical Level RL: Reporting Limit

MDA: Minimum Detectable Activity TPU: Total Propagated Uncertainty

MDC: Minimum Detectable Concentration

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

LLC Address:

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: Sample ID: Matrix: MW397SG4-24 676868005 WG Collect Date: 22-JUL-24 Receive Date:

23-JUL-24 Collector: Client

Project:	FRNP00511
Client ID:	FRNP005

Parameter	Qualifier	Result Uncertainty	MDC	TPU	RL	Units	PF	DF Analys	t Date Time	Batch	Mtd.
Rad Alpha Spec Anal	ysis										
AlphaSpec Ra226, L	iquid "As Rece	rived"									
Radium-226		0.886 +/-0.700	0.653	+/-0.702	5.00	pCi/L		CM4	08/04/24 1301	2646943	1
Th-01-RC M, Th Iso	topes, Liquid ".	As Received"									
Thorium-230	U	0.228 +/-0.339	0.536	+/-0.342	50.0	pCi/L		MB3	08/02/24 0803	2646941	2
Rad Gas Flow Propor 905.0 Mod, Sr90, liq		O									
Strontium-90	U	-0.659 +/-3.54	6.69	+/-3.54	8.00	pCi/L		JE1	08/08/24 1306	2645922	. 3
9310,Alpha/Beta Ac	tivity, liquid "A	s Received"									
Alpha	U	5.23 +/-5.52	8.91	+/-5.59	15.0	pCi/L		НН3	07/31/24 1512	2645901	4
Beta		16.4 +/-7.04	9.54	+/-7.55	50.0	pCi/L					
Rad Liquid Scintillati 906.0 Mod, Tritium	-	s Received"									
Tritium	U	44.2 +/-143	248	+/-143	300	pCi/L		HB2	08/17/24 2125	2649579	5
Tc-02-RC-MOD, Tc	99, Liquid "As	Received"									
Technetium-99	U	9.13 +/-9.42	15.7	+/-9.47	25.0	pCi/L		GS3	08/14/24 1950	2647381	6
The following Analyti	ical Methods v	vere performed									
Method Des	scription										

Method	Description
1	Eichrom Industries, AN-1418
2	DOE EML HASL-300, Th-01-RC Modified
3	EPA 905.0 Modified/DOE RP501 Rev. 1 Modified
4	EPA 900.0/SW846 9310
5	EPA 906.0 Modified
6	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	AlphaSpec Ra226, Liquid "As Received"	2646943	97	(30%-110%)
Thorium-229 Tracer	Th-01-RC M, Th Isotopes, Liquid "As Received"	2646941	83.3	(30%-110%)
Strontium Carrier	905.0 Mod, Sr90, liquid "As Received"	2645922	77	(30%-110%)
Technetium-99m Tracer	Tc-02-RC-MOD, Tc99, Liquid "As Received"	2647381	98.4	(30%-110%)

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW397SG4-24 Project: FRNP00511 Sample ID: Client ID: FRNP005 676868005

Parameter Result Uncertainty Units PF DF Analyst Date Time Batch Mtd. Qualifier MDC **TPU** RL**Acceptable Limits** Batch ID Recovery%

Surrogate/Tracer Recovery

Test

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Mtd.: Method DL: Detection Limit PF: Prep Factor Lc/LC: Critical Level **RL**: Reporting Limit

MDA: Minimum Detectable Activity TPU: Total Propagated Uncertainty

MDC: Minimum Detectable Concentration

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Certificate of Analysis

Project:

Client ID:

Report Date: October 31, 2024

FRNP00511

FRNP005

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW387SG4-24

Sample ID: 676868001

Matrix: WG

Collect Date: 22-JUL-24 13:17
Receive Date: 23-JUL-24
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
504.1/8011 Analysis of	EDB/DBCP											
8011, VOA Compounds	Liquid "As	Received"										
1,2-Dibromo-3-chloropropane	U	0.0190	0.00854	0.0190	ug/L	0.949	1	LOF	07/26/24	1749	2645909	1
Carbon Analysis												
9060A, Total Organic C	arbon "As R	eceived"										
Total Organic Carbon Average		0.887	0.330	2.00	mg/L		1	KB3	08/15/24	1540	2656541	2
Flow Injection Analysis												
9012B, Total Cyanide "		"										
Cyanide, Total	U	0.200	0.00167	0.200	mg/L	1.00	1	AXH3	07/25/24	0828	2645248	3
Halogen Analysis					8							
9020B, TOX (Organic I	Halogen) "As	Received"										
Total Organic Halogens	J	7.58	3.33	10.0	ug/L		1	JS13	08/07/24	1708	2652304	4
Ion Chromatography	3	7.50	3.33	10.0	ug/L		•	3513	00/07/21	1700	2032301	•
300.0, Iodide in Liquid '	"As Pacaiva	4"										
Iodide	As Received	0.500	0.167	0.500	mg/L		1	TXT1	08/08/24	1527	2653275	5
SW846 9056A Anions (e		0.107	0.300	mg/L		1	17411	00/00/24	1321	2033273	3
Chloride Chloride	JW	36.9	0.335	250	mg/L		5	CH6	07/23/24	1803	2644782	6
Nitrate-N	J ,	0.899	0.165	10.0	mg/L mg/L		5	CHO	01/23/24	1003	2044702	O
Sulfate	-	27.3	0.665	2.00	mg/L		5					
Bromide		0.475	0.0670	0.200	mg/L		1	CH6	07/23/24	1153	2644782	7
Fluoride	*J	0.903	0.0330	4.00	mg/L		1					
Mercury Analysis-CVA	A											
7470, Mercury Liquid "A	As Received	"										
Mercury	U	0.000200	0.0000670	0.000200	mg/L	1.00	1	JP2	07/25/24	1159	2645310	8
Metals Analysis-ICP-M	S											
6020, Metals (15+) "As	Received"											
Rhodium	U	0.00500	0.00160	0.00500	mg/L	1.00	1	PRB	08/11/24	2158	2644909	9
Tantalum	UN	0.00500	0.00100	0.00500	mg/L	1.00	1					
Sodium		48.6	0.800	2.50	mg/L	1.00	10	PRB	08/12/24		2644909	
Aluminum		0.230	0.0193	0.0500	mg/L	1.00	1	PRB	08/11/24	2038	2644909	11
Antimony	U	0.00300	0.00100	0.00300	mg/L	1.00	1					
Arsenic Barium	U	0.00500 0.117	0.00200 0.000670	0.00500 0.00400	mg/L	1.00 1.00	1					
Barium Beryllium	U	0.117	0.000670	0.00400	mg/L mg/L	1.00	1					
Boron	O	0.000300	0.00520	0.000300	mg/L	1.00	1					
20.0		0.0150	0.00320	0.0150	₆ , L	1.00	•					

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW387SG4-24 Project: FRNP00511 Sample ID: 676868001 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time Bat	ch Method
Metals Analysis-ICP-M	IS										
6020, Metals (15+) "As	Received"										
Cadmium	U	0.00100	0.000300	0.00100	mg/L	1.00	1				
Calcium		37.4	0.0800	0.200	mg/L	1.00	1				
Chromium	J	0.00464	0.00300	0.0100	mg/L	1.00	1				
Cobalt	J	0.000371	0.000300	0.00100	mg/L	1.00	1				
Copper	J	0.00148	0.000300	0.00200	mg/L	1.00	1				
Iron		0.821	0.0330	0.100	mg/L	1.00	1				
Lead	U	0.00200	0.000500	0.00200	mg/L	1.00	1				
Magnesium		16.3	0.0100	0.0300	mg/L	1.00	1				
Manganese		0.0333	0.00100	0.00500	mg/L	1.00	1				
Molybdenum	U	0.00100	0.000200	0.00100	mg/L	1.00	1				
Nickel	J	0.00117	0.000600	0.00200	mg/L	1.00	1				
Potassium		1.82	0.0800	0.300	mg/L	1.00	1				
Selenium	U	0.00500	0.00150	0.00500	mg/L	1.00	1				
Silver	U	0.00100	0.000300	0.00100	mg/L	1.00	1				
Thallium	U	0.00200	0.000600	0.00200	mg/L	1.00	1				
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00	1				
Vanadium	U	0.0200	0.00330	0.0200	mg/L	1.00	1				
Zinc	J	0.00730	0.00330	0.0200	mg/L	1.00	1				
Solids Analysis											
160.1, Dissolved Solids	"As Receive	ed"									
Total Dissolved Solids		300	2.38	10.0	mg/L			KLP1	07/29/24	1242 2647	734 12
Spectrometric Analysis					•						
410.4, Chem. Oxygen D		Received"									
COD		42.1	8.95	20.0	mg/L		1	HH2	07/24/24	1919 2644	792 13
Volatile Organics					8						
8260D, Volatiles- full s	uite "As Rec	eived"									
1.1.1.2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1	PXY1	07/25/24	1523 2646	434 14
1,1,1-Trichloroethane	U	1.00	0.333	1.00	ug/L		1				
1,1,2,2-Tetrachloroethane	Ü	1.00	0.333	1.00	ug/L		1				
1,1,2-Trichloroethane	Ü	1.00	0.333	1.00	ug/L		1				
1,1-Dichloroethane	Ü	1.00	0.333	1.00	ug/L		1				
1,1-Dichloroethylene	Ü	1.00	0.333	1.00	ug/L		1				
1,2,3-Trichloropropane	Ü	1.00	0.333	1.00	ug/L		1				
1,2-Dibromoethane	U	1.00	0.333	1.00	ug/L		1				

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Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW387SG4-24 Project: FRNP00511 Sample ID: 676868001 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
Volatile Organics									
8260D, Volatiles- full s	suite "As Rec	eived"							
1,2-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloroethane	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloropropane	U	1.00	0.333	1.00	ug/L		1		
1,4-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
2-Butanone	U	5.00	1.67	5.00	ug/L		1		
2-Hexanone	U	5.00	1.67	5.00	ug/L		1		
4-Methyl-2-pentanone	U	5.00	1.67	5.00	ug/L		1		
Acetone	U	5.00	1.74	5.00	ug/L		1		
Acrolein	U	5.00	1.67	5.00	ug/L		1		
Acrylonitrile	U	5.00	1.67	5.00	ug/L		1		
Benzene	U	1.00	0.333	1.00	ug/L		1		
Bromochloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromodichloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromoform	U	1.00	0.333	1.00	ug/L		1		
Bromomethane	U	1.00	0.337	1.00	ug/L		1		
Carbon disulfide	U	5.00	1.67	5.00	ug/L		1		
Carbon tetrachloride	U	1.00	0.333	1.00	ug/L		1		
Chlorobenzene	U	1.00	0.333	1.00	ug/L		1		
Chloroethane	U	1.00	0.333	1.00	ug/L		1		
Chloroform	U	1.00	0.333	1.00	ug/L		1		
Chloromethane	U	1.00	0.333	1.00	ug/L		1		
Dibromochloromethane	U	1.00	0.333	1.00	ug/L		1		
Dibromomethane	U	1.00	0.333	1.00	ug/L		1		
Ethylbenzene	U	1.00	0.333	1.00	ug/L		1		
Iodomethane	U	5.00	1.67	5.00	ug/L		1		
Methylene chloride	J	0.790	0.500	5.00	ug/L		1		
Styrene	U	1.00	0.333	1.00	ug/L		1		
Tetrachloroethylene	U	1.00	0.333	1.00	ug/L		1		
Toluene	U	1.00	0.333	1.00	ug/L		1		
Trichloroethylene	J	0.460	0.333	1.00	ug/L		1		
Trichlorofluoromethane	U	1.00	0.333	1.00	ug/L		1		
Vinyl acetate	U	5.00	1.67	5.00	ug/L		1		
Vinyl chloride	U	1.00	0.333	1.00	ug/L		1		
Xylenes (total)	U	3.00	1.00	3.00	ug/L		1		
cis-1,2-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1		
cis-1,3-Dichloropropylene	U	1.00	0.333	1.00	ug/L		1		

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Certificate of Analysis

Report Date: October 31, 2024

DF Analyst Date Time Batch Method

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Qualifier

Parameter

Notes:

Project: C-746-S&T Landfill Quarterly(SG24-04)

Result

Client Sample ID: MW387SG4-24 Project: FRNP00511 Sample ID: 676868001 Client ID: FRNP005

DL

RL

Units

PF

							-	
Volatile Organics								
8260D, Volatiles- full s	uite "As Recei	ved"						
trans-1,2-Dichloroethylene	U	1.00	0.333	1.00) ug/	L 1		
trans-1,3-Dichloropropylene	U	1.00	0.333	1.00) ug/	L 1		
trans-1,4-Dichloro-2-butene	U	5.00	1.67	5.00) ug/	L 1		
The following Prep Met	thods were per	formed:						
Method	Description			Analyst	Date	Tim	ne Prep Bato	ch
SW846 7470A Prep	EPA 7470A Me	ercury Prep Liquid		JM13	07/24/	24 1115	5 2645309	
SW846 9010C Distillation	SW846 9010C	Prep		ES2	07/24/	24 1156	5 2645247	
SW846 3005A	ICP-MS 3005A	PREP		AB5	07/29/	24 0820	2644908	
SW846 8011 PREP	8011 Prep			LOF	07/26/	24 1451	2645907	
The following Analytic	al Methods we	ere performed:						
Method	Description					Analyst Co	mments	
1	SW846 8011							
2	SW846 9060A							
3	SW846 9012B							
4	SW846 9020B							
5	EPA 300.0							
6	SW846 9056A							
7	SW846 9056A							
8	SW846 7470A							
9	SW846 3005A/6	5020B						
10	SW846 3005A/6	5020B						
11	SW846 3005A/6	5020B						
12	EPA 160.1							
13	EPA 410.4							
14	SW846 8260D							
Surrogate/Tracer Recov	ery Test				Result	Nominal	Recovery%	Acceptable Limits
1-Chloro-2-fluorobenzene	8011, VO	A Compounds Liquid "As Receive	ed"		7.42 ug/L	6.78	109	(56%-149%)
Bromofluorobenzene	8260D, V	olatiles- full suite "As Received"			54.1 ug/L	50.0	108	(74%-123%)
1,2-Dichloroethane-d4	8260D, V	olatiles- full suite "As Received"			61.6 ug/L	50.0	123	(76%-127%)
Toluene-d8	8260D, V	olatiles- full suite "As Received"			55.2 ug/L	50.0	110	(77%-121%)

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW387SG4-24 Project: FRNP00511 Sample ID: 676868001 Client ID: FRNP005

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: October 31, 2024

FRNP00511

FRNP005

Four Rivers Nuclear Partnership, LLC Company:

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW387SG4-24 Sample ID: 676868002

Matrix: WG

Collect Date: 22-JUL-24 13:17 Receive Date: 23-JUL-24 Collector:

Client

Project:

Client ID:

Parameter	Qualifier	Result	DL	RL	Units	PF DF A	nalyst Date	Time Batch	Method
Metals Analysis-ICP-l	MS								
6020, Dissolved Meta	ls (3 Elements)) "As Received"							
Barium		0.113	0.000670	0.00400	mg/L	1.00 1 PI	RB 08/11/24	2103 2644909	1
Chromium	J	0.00367	0.00300	0.0100	mg/L	1.00 1			
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00 1			
The following Prep M	ethods were pe	erformed:							
Method	Description	n		Analyst	Date	Time	Prep Batch		
EPA 160	Laboratory F	iltration		SD	07/23/24	1208	2644812		
SW846 3005A	ICP-MS 3005	5A PREP		AB5	07/29/24	0820	2644908		
The following Analyt	ical Methods v	were performed:							
Method	Description	1			A	Analyst Comn	nents		

Method Description

SW846 3005A/6020B

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level DL: Detection Limit PF: Prep Factor MDA: Minimum Detectable Activity **RL**: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: October 31, 2024

FRNP00511

FRNP005

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW388SG4-24

Sample ID: 676868003

Matrix: WG

Collect Date: 22-JUL-24 14:08 Receive Date: 23-JUL-24

Collector: 23-JUL

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time Batch	Method
504.1/8011 Analys	sis of EDB/DBCP										
8011, VOA Comp	ounds Liquid "As	Received"									
1,2-Dibromo-3-chlorop	*	0.0189	0.00848	0.0189	ug/L	0.943	1	LOF	07/26/24	1820 264590	9 1
Carbon Analysis	•				Ü						
9060A, Total Orga	anic Carbon "As R	eceived"									
Total Organic Carbon		0.908	0.330	2.00	mg/L		1	KB3	08/16/24	1358 265654	2 2
Flow Injection And	alysis										
9012B, Total Cyar	nide "As Received"	•									
Cyanide, Total	U	0.200	0.00167	0.200	mg/L	1.00	1	AXH3	07/25/24	0829 264524	8 3
Halogen Analysis					J						
9020B, TOX (Org	anic Halogen) "As	Received"									
Total Organic Halogen		12.1	3.33	10.0	ug/L		1	JS13	08/07/24	1806 265230	4 4
Ion Chromatograp		12.1	0.00	10.0	ug/2		•	0010	00/0//2.	1000 200200	
300.0, Iodide in Li	•	1"									
Iodide	U	0.500	0.167	0.500	mg/L		1	TXT1	08/08/24	1540 265327	5 5
SW846 9056A An			0.107	0.500	mg/L		1	1711	00/00/24	1540 205527	, ,
Chloride	JW	33.2	0.335	250	mg/L		5	СН6	07/23/24	1834 264478	2 6
Nitrate-N	J , ,	0.889	0.165	10.0	mg/L		5	CHO	01/23/21	1031 201170	_ 0
Sulfate		20.6	0.665	2.00	mg/L		5				
Bromide		0.429	0.0670	0.200	mg/L		1	CH6	07/23/24	1223 264478	2 7
Fluoride	*J	0.378	0.0330	4.00	mg/L		1				
Mercury Analysis-	-CVAA										
7470, Mercury Lic	quid "As Received'	"									
Mercury	U	0.000200	0.0000670	0.000200	mg/L	1.00	1	JP2	07/25/24	1200 264531	8 0
Metals Analysis-IO	CP-MS										
6020, Metals (15+) "As Received"										
Aluminum	,	0.0518	0.0193	0.0500	mg/L	1.00	1	PRB	08/11/24	2107 264490	9 9
Antimony	U	0.00300	0.00100	0.00300	mg/L	1.00	1				
Arsenic	U	0.00500	0.00200	0.00500	mg/L	1.00	1				
Barium		0.177	0.000670	0.00400	mg/L	1.00	1				
Beryllium	U	0.000500	0.000200	0.000500	mg/L	1.00	1				
Boron		0.0346	0.00520	0.0150	mg/L	1.00	1				
Cadmium	U	0.00100	0.000300	0.00100	mg/L	1.00	1				
Calcium	_	29.3	0.0800	0.200	mg/L	1.00	1				
Chromium	U	0.0100	0.00300	0.0100	mg/L	1.00	1				

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW388SG4-24 Project: FRNP00511 Sample ID: 676868003 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analys	st Date	Time	e Batch	Method
Metals Analysis-ICP-M	AS											
6020, Metals (15+) "As	s Received"											
Cobalt	U	0.00100	0.000300	0.00100	mg/L	1.00	1					
Copper	J	0.000981	0.000300	0.00200	mg/L	1.00	1					
Iron		0.251	0.0330	0.100	mg/L	1.00	1					
Lead	U	0.00200	0.000500	0.00200	mg/L	1.00	1					
Magnesium		13.2	0.0100	0.0300	mg/L	1.00	1					
Manganese	J	0.00373	0.00100	0.00500	mg/L	1.00	1					
Molybdenum	U	0.00100	0.000200	0.00100	mg/L	1.00						
Nickel	J	0.000774	0.000600	0.00200	mg/L	1.00						
Potassium		1.80	0.0800	0.300	mg/L	1.00						
Selenium	U	0.00500	0.00150	0.00500	mg/L	1.00						
Silver	U	0.00100	0.000300	0.00100	mg/L	1.00						
Sodium		48.2	0.0800	0.250	mg/L	1.00						
Thallium	U	0.00200	0.000600	0.00200	mg/L	1.00						
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00						
Vanadium	U	0.0200	0.00330	0.0200	mg/L	1.00						
Zinc	J	0.00462	0.00330	0.0200	mg/L	1.00						
Rhodium	U	0.00500	0.00160	0.00500	mg/L	1.00		PRB	08/11/24	2208	2644909	10
Tantalum	UN	0.00500	0.00100	0.00500	mg/L	1.00	1					
Solids Analysis												
160.1, Dissolved Solids	s "As Receive	ed"										
Total Dissolved Solids		248	2.38	10.0	mg/L			KLP1	07/29/24	1242	2647734	11
Spectrometric Analysis	8											
410.4, Chem. Oxygen l	Demand "As l	Received"										
COD	U	20.0	8.95	20.0	mg/L		1	HH2	07/24/24	1919	2644792	12
Volatile Organics												
8260D, Volatiles- full s	suite "As Rec	eived"										
1,1,1,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1	PXY1	07/29/24	1227	2646434	13
1,1,1-Trichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1,2,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1,2-Trichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1-Dichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1					
1,2,3-Trichloropropane	U	1.00	0.333	1.00	ug/L		1					
1,2-Dibromoethane	U	1.00	0.333	1.00	ug/L		1					

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Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW388SG4-24 Project: FRNP00511 Sample ID: 676868003 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
Volatile Organics									
8260D, Volatiles- full s	suite "As Rec	eived"							
1,2-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloroethane	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloropropane	U	1.00	0.333	1.00	ug/L		1		
1,4-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
2-Butanone	U	5.00	1.67	5.00	ug/L		1		
2-Hexanone	U	5.00	1.67	5.00	ug/L		1		
4-Methyl-2-pentanone	U	5.00	1.67	5.00	ug/L		1		
Acetone	U	5.00	1.74	5.00	ug/L		1		
Acrolein	U	5.00	1.67	5.00	ug/L		1		
Acrylonitrile	U	5.00	1.67	5.00	ug/L		1		
Benzene	U	1.00	0.333	1.00	ug/L		1		
Bromochloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromodichloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromoform	U	1.00	0.333	1.00	ug/L		1		
Bromomethane	U	1.00	0.337	1.00	ug/L		1		
Carbon disulfide	U	5.00	1.67	5.00	ug/L		1		
Carbon tetrachloride	U	1.00	0.333	1.00	ug/L		1		
Chlorobenzene	U	1.00	0.333	1.00	ug/L		1		
Chloroethane	U	1.00	0.333	1.00	ug/L		1		
Chloroform	U	1.00	0.333	1.00	ug/L		1		
Chloromethane	U	1.00	0.333	1.00	ug/L		1		
Dibromochloromethane	U	1.00	0.333	1.00	ug/L		1		
Dibromomethane	U	1.00	0.333	1.00	ug/L		1		
Ethylbenzene	U	1.00	0.333	1.00	ug/L		1		
Iodomethane	U	5.00	1.67	5.00	ug/L		1		
Methylene chloride	U	5.00	0.500	5.00	ug/L		1		
Styrene	U	1.00	0.333	1.00	ug/L		1		
Tetrachloroethylene	U	1.00	0.333	1.00	ug/L		1		
Toluene	U	1.00	0.333	1.00	ug/L		1		
Trichloroethylene	U	1.00	0.333	1.00	ug/L		1		
Trichlorofluoromethane	U	1.00	0.333	1.00	ug/L		1		
Vinyl acetate	U	5.00	1.67	5.00	ug/L		1		
Vinyl chloride	U	1.00	0.333	1.00	ug/L		1		
Xylenes (total)	U	3.00	1.00	3.00	ug/L		1		
cis-1,2-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1		
cis-1,3-Dichloropropylene	U	1.00	0.333	1.00	ug/L		1		

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Certificate of Analysis

Report Date: October 31, 2024

DF Analyst Date Time Batch Method

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Qualifier

Project: C-746-S&T Landfill Quarterly(SG24-04)

Result

8260D, Volatiles- full suite "As Received"

Client Sample ID: MW388SG4-24 Project: FRNP00511 Sample ID: 676868003 Client ID: FRNP005

DL

RL

Units

PF

voidine organics										
8260D, Volatiles- full st	uite "As Re	ceived"								
trans-1,2-Dichloroethylene	U	1.00		0.333	1	.00	ug/L	1		
trans-1,3-Dichloropropylene	U	1.00		0.333	1	.00	ug/L	1		
trans-1,4-Dichloro-2-butene	U	5.00		1.67	5	.00	ug/L	1		
The following Prep Met	thods were	performed:								
Method	Descripti	on			Analys	st	Date	Tim	e Prep E	Batch
SW846 9010C Distillation	SW846 901	OC Prep			ES2		07/24/24	4 1156	264524	7
SW846 7470A Prep	EPA 7470A	Mercury Prep	p Liquid		JM13		07/24/24	4 1115	2645309	9
SW846 3005A	ICP-MS 30	05A PREP			AB5		07/29/24	4 0820	2644908	8
SW846 8011 PREP	8011 Prep				LOF		07/26/24	4 1451	264590	.7
The following Analytic	al Methods	were perfo	ormed:							
Method	Description	on .						Analyst Co	mments	
1	SW846 801	1						•		
2	SW846 9060	ðΑ								
3	SW846 9012	2B								
4	SW846 9020	θВ								
5	EPA 300.0									
6	SW846 905	6 A								
7	SW846 9050	6A								
8	SW846 7470	θA								
9	SW846 300:	5A/6020B								
10	SW846 300:	5A/6020B								
11	EPA 160.1									
12	EPA 410.4									
13	SW846 8260	0D								
Surrogate/Tracer Recov	ery Tes	t				Res	ult	Nominal	Recovery	% Acceptable Limits
1-Chloro-2-fluorobenzene	8011,	VOA Compoi	unds Liquid "As Receive	ed"		6.82	ug/L	6.73	101	(56%-149%)
Bromofluorobenzene	8260I), Volatiles- fu	all suite "As Received"			53.2	ug/L	50.0	106	(74%-123%)
1,2-Dichloroethane-d4	8260I), Volatiles- fu	all suite "As Received"			57.3	ug/L	50.0	115	(76%-127%)
m 1 10	00.00		44 1 14 75 1 40				·-	500	100	(550) (510)

Toluene-d8

Parameter

Volatile Organics

54.3 ug/L

50.0

109

(77% - 121%)

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW388SG4-24 Project: FRNP00511 Sample ID: 676868003 Client ID: FRNP005

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: October 31, 2024

FRNP00511

FRNP005

Four Rivers Nuclear Partnership, LLC Company:

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW388SG4-24 Sample ID: 676868004

Matrix: WG

Collect Date: 22-JUL-24 14:08 Receive Date: 23-JUL-24

Collector: Client

Project:

Client ID:

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	yst Date	Time	e Batch	Method
Metals Analysis-ICP-M	IS											
6020, Dissolved Metals	(3 Elements) "As Received"										
Barium		0.171	0.000670	0.00400	mg/L	1.00	1	PRB	08/11/24	2111	2644909	1
Chromium	U	0.0100	0.00300	0.0100	mg/L	1.00	1					
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00	1					
TT1 C 11 ' D M	.1 1	C 1										

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 160	Laboratory Filtration	SD	07/23/24	1208	2644812
SW846 3005A	ICP-MS 3005A PREP	AB5	07/29/24	0820	2644908

The following Analytical Methods were performed:

Method Description **Analyst Comments**

SW846 3005A/6020B

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level PF: Prep Factor DL: Detection Limit MDA: Minimum Detectable Activity **RL**: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: October 31, 2024

FRNP00511

Four Rivers Nuclear Partnership, LLC 5600 Hobbs Road Company:

Address:

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW397SG4-24

Parameter

Sample ID:	676868005			C	lient ID	FRNP005		
Matrix:	WG							
Collect Date:	22-JUL-24 15:02							
Receive Date:	23-JUL-24							
Collector:	Client							
Quali	ifier Result	DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
A 1 CEDD/E	D.C.D.							

Project:

Parameter	Quanner	Result	DL	KL	Units	РГ	DΓ	Anary	st Date	1 11116	Batch	Method
504.1/8011 Analysis of I	EDB/DBCP											
8011, VOA Compounds	Liquid "As	Received"										
1,2-Dibromo-3-chloropropane	U	0.0190	0.00854	0.0190	ug/L	0.949	1	LOF	07/26/24	1850	2645909	1
Carbon Analysis												
9060A, Total Organic Ca	arbon "As R	eceived"										
Total Organic Carbon Average	y J	0.536	0.330	2.00	mg/L		1	KB3	08/16/24	1536	2656542	2
Flow Injection Analysis												
9012B, Total Cyanide "A	As Received	"										
Cyanide, Total	U	0.200	0.00167	0.200	mg/L	1.00	1	AXH3	07/25/24	0830	2645248	3
Halogen Analysis												
9020B, TOX (Organic H	Ialogen) "As	Received"										
Total Organic Halogens	J	5.00	3.33	10.0	ug/L		1	JS13	08/07/24	1841	2652304	4
Ion Chromatography												
300.0, Iodide in Liquid "	As Received	1 "										
Iodide	U	0.500	0.167	0.500	mg/L		1	TXT1	08/08/24	1553	2653275	5
SW846 9056A Anions (5) "As Recei	ived"										
Bromide		0.370	0.0670	0.200	mg/L		1	CH6	07/23/24	1254	2644782	6
Fluoride	*J	0.202	0.0330	4.00	mg/L		1					
Sulfate		11.8	0.133	0.400	mg/L		1					
Chloride	JW	33.4	0.335	250	mg/L		5	CH6	07/23/24	1905	2644782	7
Nitrate-N	J	1.03	0.165	10.0	mg/L		5					
Mercury Analysis-CVA												
7470, Mercury Liquid "A	As Received	"										
Mercury	U	0.000200	0.0000670	0.000200	mg/L	1.00	1	JP2	07/25/24	1202	2645310	8
Metals Analysis-ICP-MS	S											
6020, Metals (15+) "As I	Received"											
Rhodium	U	0.00500	0.00160	0.00500	mg/L	1.00	1	PRB	08/11/24	2209	2644909	9
Tantalum	UN	0.00500	0.00100	0.00500	mg/L	1.00	1					
Aluminum		0.205	0.0193	0.0500	mg/L	1.00	1	PRB	08/11/24	2114	2644909	10
Antimony	U	0.00300	0.00100	0.00300	mg/L	1.00	1					
Arsenic	U	0.00500	0.00200	0.00500	mg/L	1.00	1					
Barium	**	0.131	0.000670	0.00400	mg/L	1.00	1					
Beryllium	U	0.000500	0.000200	0.000500	mg/L	1.00	1					
Boron	J	0.00783	0.00520	0.0150	mg/L	1.00	1					
Cadmium	U	0.00100	0.000300	0.00100	mg/L	1.00	1					

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW397SG4-24 Project: FRNP00511 Sample ID: 676868005 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time B	atch	Method
Metals Analysis-ICP-M	1S											
6020, Metals (15+) "As	Received"											
Calcium		18.4	0.0800	0.200	mg/L	1.00	1					
Chromium	U	0.0100	0.00300	0.0100	mg/L	1.00	1					
Cobalt	U	0.00100	0.000300	0.00100	mg/L	1.00	1					
Copper	J	0.000920	0.000300	0.00200	mg/L	1.00	1					
Iron		0.560	0.0330	0.100	mg/L	1.00	1					
Lead	U	0.00200	0.000500	0.00200	mg/L	1.00	1					
Magnesium		7.52	0.0100	0.0300	mg/L	1.00	1					
Manganese		0.0102	0.00100	0.00500	mg/L	1.00	1					
Molybdenum	U	0.00100	0.000200	0.00100	mg/L	1.00	1					
Nickel	J	0.000875	0.000600	0.00200	mg/L	1.00	1					
Potassium		1.77	0.0800	0.300	mg/L	1.00	1					
Selenium	U	0.00500	0.00150	0.00500	mg/L	1.00	1					
Silver	U	0.00100	0.000300	0.00100	mg/L	1.00	1					
Sodium		32.3	0.0800	0.250	mg/L	1.00	1					
Thallium	U	0.00200	0.000600	0.00200	mg/L	1.00	1					
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00	1					
Vanadium	U	0.0200	0.00330	0.0200	mg/L	1.00	1					
Zinc	J	0.00387	0.00330	0.0200	mg/L	1.00	1					
Solids Analysis												
160.1, Dissolved Solids	s "As Receive	ed"										
Total Dissolved Solids		160	2.38	10.0	mg/L			KLP1	07/29/24	1242 264	17734	11
Spectrometric Analysis	1											
410.4, Chem. Oxygen I	Demand "As l	Received"										
COD	U	20.0	8.95	20.0	mg/L		1	HH2	07/24/24	1919 264	14792	12
Volatile Organics					-							
8260D, Volatiles- full s	suite "As Rece	eived"										
1,1,1,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1	PXY1	07/25/24	1615 264	16434	13
1,1,1-Trichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1,2,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1,2-Trichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1-Dichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1					
1,2,3-Trichloropropane	U	1.00	0.333	1.00	ug/L		1					
1,2-Dibromoethane	U	1.00	0.333	1.00	ug/L		1					

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Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW397SG4-24 Project: FRNP00511 Sample ID: 676868005 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
Volatile Organics									
8260D, Volatiles- full s	suite "As Rec	eived"							
1,2-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloroethane	U	1.00	0.333	1.00	ug/L		1		
1,2-Dichloropropane	U	1.00	0.333	1.00	ug/L		1		
1,4-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1		
2-Butanone	U	5.00	1.67	5.00	ug/L		1		
2-Hexanone	U	5.00	1.67	5.00	ug/L		1		
4-Methyl-2-pentanone	U	5.00	1.67	5.00	ug/L		1		
Acetone	U	5.00	1.74	5.00	ug/L		1		
Acrolein	U	5.00	1.67	5.00	ug/L		1		
Acrylonitrile	U	5.00	1.67	5.00	ug/L		1		
Benzene	U	1.00	0.333	1.00	ug/L		1		
Bromochloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromodichloromethane	U	1.00	0.333	1.00	ug/L		1		
Bromoform	U	1.00	0.333	1.00	ug/L		1		
Bromomethane	U	1.00	0.337	1.00	ug/L		1		
Carbon disulfide	U	5.00	1.67	5.00	ug/L		1		
Carbon tetrachloride	U	1.00	0.333	1.00	ug/L		1		
Chlorobenzene	U	1.00	0.333	1.00	ug/L		1		
Chloroethane	U	1.00	0.333	1.00	ug/L		1		
Chloroform	U	1.00	0.333	1.00	ug/L		1		
Chloromethane	U	1.00	0.333	1.00	ug/L		1		
Dibromochloromethane	U	1.00	0.333	1.00	ug/L		1		
Dibromomethane	U	1.00	0.333	1.00	ug/L		1		
Ethylbenzene	U	1.00	0.333	1.00	ug/L		1		
Iodomethane	U	5.00	1.67	5.00	ug/L		1		
Methylene chloride	J	0.690	0.500	5.00	ug/L		1		
Styrene	U	1.00	0.333	1.00	ug/L		1		
Tetrachloroethylene	U	1.00	0.333	1.00	ug/L		1		
Toluene	U	1.00	0.333	1.00	ug/L		1		
Trichloroethylene	U	1.00	0.333	1.00	ug/L		1		
Trichlorofluoromethane	U	1.00	0.333	1.00	ug/L		1		
Vinyl acetate	U	5.00	1.67	5.00	ug/L		1		
Vinyl chloride	U	1.00	0.333	1.00	ug/L		1		
Xylenes (total)	U	3.00	1.00	3.00	ug/L		1		
cis-1,2-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1		
cis-1,3-Dichloropropylene	U	1.00	0.333	1.00	ug/L		1		

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Certificate of Analysis

Report Date: October 31, 2024

DF Analyst Date Time Batch Method

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Qualifier

Project: C-746-S&T Landfill Quarterly(SG24-04)

Result

8260D, Volatiles- full suite "As Received"

Client Sample ID: MW397SG4-24 Project: FRNP00511 Sample ID: 676868005 Client ID: FRNP005

DL

RL

Units

PF

voidine organies										
8260D, Volatiles- full st	uite "As Re	eceived"								
trans-1,2-Dichloroethylene	U	1.00	1	0.333	1.	00	ug/L	1		
trans-1,3-Dichloropropylene	U	1.00		0.333	1.	00	ug/L	1		
trans-1,4-Dichloro-2-butene	U	5.00		1.67	5.	00	ug/L	1		
The following Prep Met	thods were	performed:								
Method	Descript	ion			Analyst	D	ate	Time	e Prep Bato	h
SW846 8011 PREP	8011 Prep				LOF	07	7/26/24	1451	2645907	
SW846 3005A	ICP-MS 30	005A PREP			AB5	07	7/29/24	0820	2644908	
SW846 9010C Distillation	SW846 90	10C Prep			ES2	07	7/24/24	1156	2645247	
SW846 7470A Prep	EPA 7470.	A Mercury Prep	p Liquid		JM13	07	7/24/24	1115	2645309	
The following Analytic	al Method	s were perfo	ormed:							
Method	Descripti	on					A	nalyst Coi	mments	
1	SW846 801	1								
2	SW846 906	50A								
3	SW846 901	12B								
4	SW846 902	20B								
5	EPA 300.0									
6	SW846 905	56A								
7	SW846 905	56A								
8	SW846 747	70A								
9	SW846 300)5A/6020B								
10	SW846 300)5A/6020B								
11	EPA 160.1									
12	EPA 410.4									
13	SW846 826	50D								
Surrogate/Tracer Recov	ery Tes	st				Result	t N	ominal	Recovery%	Acceptable Limits
1-Chloro-2-fluorobenzene	8011	, VOA Compo	unds Liquid "As Receive	ed"		6.68 ug/	L	6.78	99	(56%-149%)
Bromofluorobenzene	8260	D, Volatiles- fi	ull suite "As Received"			53.1 ug/	L	50.0	106	(74%-123%)
1,2-Dichloroethane-d4	8260	D, Volatiles- fi	ull suite "As Received"			59.8 ug/	L	50.0	120	(76%-127%)

Toluene-d8

Parameter

Volatile Organics

56.3 ug/L

50.0

113

(77% - 121%)

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW397SG4-24 Project: FRNP00511 Sample ID: 676868005 Client ID: FRNP005

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

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Certificate of Analysis

Project:

Client ID:

Report Date: October 31, 2024

FRNP00511

FRNP005

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: MW397SG4-24 Sample ID: 676868006

Matrix: WG

Collect Date: 22-JUL-24 15:02 Receive Date: 23-JUL-24 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	yst Date	Time	e Batch	Method
Metals Analysis-IO	CP-MS											
6020, Dissolved M	Metals (3 Elements)	"As Received"										
Barium		0.127	0.000670	0.00400	mg/L	1.00	1	PRB	08/11/24	2118	2644909	1
Chromium	U	0.0100	0.00300	0.0100	mg/L	1.00	1					
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00	1					
The following Pre	p Methods were per	rformed:										
Method	Description			Analyst	Date	,	Гimе	Pı	rep Batch			
EPA 160	Laboratory Fil	tration		SD	07/23/24		1208	26	544812			
SW846 3005A	ICP-MS 3005A	A PREP		AB5	07/29/24		0820	26	544908			

Method Description Analyst Comments

1 SW846 3005A/6020B

The following Analytical Methods were performed:

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

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Certificate of Analysis

Project:

Client ID:

Report Date: October 31, 2024

FRNP00511

FRNP005

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: TB1SG4-24 Sample ID: 676868007

Matrix: WATER

Collect Date: 22-JUL-24 12:15 Receive Date: 23-JUL-24

Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Anal	yst Date	Time	e Batch	Method
504.1/8011 Analysis o	of EDB/DBCP											
8011, VOA Compoun	ds Liquid "As	Received"										
1,2-Dibromo-3-chloropropa		0.0189	0.00849	0.0189	ug/L	0.943	1	LOF	07/26/24	1921	2645909	1
Volatile Organics					Č							
8260D, Volatiles- full	suite "As Rec	eived"										
1,1,1,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1	PXY1	07/25/24	1641	2646434	2
1,1,1-Trichloroethane	U	1.00	0.333	1.00	ug/L		1		0772072	10.1	20.0.0.	_
1,1,2,2-Tetrachloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1,2-Trichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,1-Dichloroethane	Ü	1.00	0.333	1.00	ug/L		1					
1,1-Dichloroethylene	U	1.00	0.333	1.00	ug/L		1					
1,2,3-Trichloropropane	U	1.00	0.333	1.00	ug/L		1					
1,2-Dibromoethane	U	1.00	0.333	1.00	ug/L		1					
1,2-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1					
1,2-Dichloroethane	U	1.00	0.333	1.00	ug/L		1					
1,2-Dichloropropane	U	1.00	0.333	1.00	ug/L		1					
1,4-Dichlorobenzene	U	1.00	0.333	1.00	ug/L		1					
2-Butanone	U	5.00	1.67	5.00	ug/L		1					
2-Hexanone	U	5.00	1.67	5.00	ug/L		1					
4-Methyl-2-pentanone	U	5.00	1.67	5.00	ug/L		1					
Acetone	J	3.34	1.74	5.00	ug/L		1					
Acrolein	U	5.00	1.67	5.00	ug/L		1					
Acrylonitrile	U	5.00	1.67	5.00	ug/L		1					
Benzene	U	1.00	0.333	1.00	ug/L		1					
Bromochloromethane	U	1.00	0.333	1.00	ug/L		1					
Bromodichloromethane	U	1.00	0.333	1.00	ug/L		1					
Bromoform	U	1.00	0.333	1.00	ug/L		1					
Bromomethane	U	1.00	0.337	1.00	ug/L		1					
Carbon disulfide	U	5.00	1.67	5.00	ug/L		1					
Carbon tetrachloride	U	1.00	0.333	1.00	ug/L		1					
Chlorobenzene	U	1.00	0.333	1.00	ug/L		1					
Chloroethane	U	1.00	0.333	1.00	ug/L		1					
Chloroform	U	1.00	0.333	1.00	ug/L		1					
Chloromethane	U	1.00	0.333	1.00	ug/L		1					
Dibromochloromethane	U	1.00	0.333	1.00	ug/L		1					
Dibromomethane	U	1.00	0.333	1.00	ug/L		1					
Ethylbenzene	U	1.00	0.333	1.00	ug/L		1					
Iodomethane	U	5.00	1.67	5.00	ug/L		1					

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Certificate of Analysis

Report Date: October 31, 2024

Four Rivers Nuclear Partnership, LLC Company:

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: TB1SG4-24 Project: FRNP00511 Sample ID: 676868007 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF DI	F Analyst Date	Time Batch	Method
Volatile Organics									
8260D, Volatiles- full su	iite "As Rece	ived"							
Methylene chloride	J	0.850	0.500	5.00	ug/L	1			
Styrene	U	1.00	0.333	1.00	ug/L	1			
Tetrachloroethylene	U	1.00	0.333	1.00	ug/L	1			
Toluene	U	1.00	0.333	1.00	ug/L	1			
Trichloroethylene	U	1.00	0.333	1.00	ug/L	1			
Trichlorofluoromethane	U	1.00	0.333	1.00	ug/L	1			
Vinyl acetate	U	5.00	1.67	5.00	ug/L	1			
Vinyl chloride	U	1.00	0.333	1.00	ug/L	1			
Xylenes (total)	U	3.00	1.00	3.00	ug/L	1			
cis-1,2-Dichloroethylene	U	1.00	0.333	1.00	ug/L	1			
cis-1,3-Dichloropropylene	U	1.00	0.333	1.00	ug/L	1			
trans-1,2-Dichloroethylene	U	1.00	0.333	1.00	ug/L	1			
trans-1,3-Dichloropropylene	U	1.00	0.333	1.00	ug/L	1			
trans-1,4-Dichloro-2-butene	U	5.00	1.67	5.00	ug/L	1			
The following Prep Met	hods were pe	rformed:							
Method	Description	1		Analyst	Date	Tin	ne Prep Batch	l	
SW846 8011 PREP	8011 Prep			LOF	07/26/24	145	2645907		

The following Analytical Methods were performed:

Method	Description	
1	SW846 8011	
2	SW846 8260D	

8260D, Volatiles- full suite "As Received"

Test	Result	Nominal	Recovery%	Acceptable Limits
8011, VOA Compounds Liquid "As Received"	7.31 ug/L	6.74	108	(56%-149%)
8260D, Volatiles- full suite "As Received"	56.5 ug/L	50.0	113	(74%-123%)
8260D, Volatiles- full suite "As Received"	56.9 ug/L	50.0	114	(76%-127%)

50.0

59.0 ug/L

118

(77%-121%)

Analyst Comments

Notes:

Toluene-d8

Surrogate/Tracer Recovery

1-Chloro-2-fluorobenzene

Bromofluorobenzene

1,2-Dichloroethane-d4

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Quarterly(SG24-04)

Client Sample ID: TB1SG4-24 Project: FRNP00511 Sample ID: 676868007 Client ID: FRNP005

Parameter Qualifier Result DL RL Units PF DF Analyst Date Time Batch Method

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit



ATTACHMENT C5 GEL LABORATORIES CERTIFICATE OF ANALYSIS



2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

LLC Address:

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Project: Client ID:

FRNP00507 FRNP005

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Quarterly(UG24-04)

Client Sample ID: Sample ID: Matrix: MW369UG4-24 676265001

WG Collect Date:

17-JUL-24 Receive Date: 19-JUL-24 Collector: Client

Parameter	Qualifier	Result U	ncertainty	MDC	TPU	RL	Units	PF	DF Analys	t Date	Time	Batch	Mtd.
Rad Alpha Spec Analys	sis												
AN-1418 AlphaSpec R	2a226, Liquid	' "As Receiv	ed"										
Radium-226	U	0.377	+/-0.749	1.22	+/-0.750	5.00	pCi/L		CM4	08/04/24	1300	2646943	1
Th-01-RC M, Th Isoto	pes, Liquid "A	As Received	"										
Thorium-230	U	0.139	+/-0.354	0.649	+/-0.355	50.0	pCi/L		MB3	08/01/24	1340	2646941	2
Thorium-232	U	-0.0533	+/-0.202	0.518	+/-0.202		pCi/L						
Rad Gas Flow Proportion	onal Countin	ng											
904.0Mod, Ra228, Liq	juid "As Rece	rived"											
Radium-228	U	4.57	+/-2.94	4.61	+/-3.17	4.99	pCi/L		KP1	08/05/24	1615	2643862	3
905.0Mod, Sr90, liquid	d "As Receive	ed"											
Strontium-90	U	0.861	+/-3.67	6.81	+/-3.68	8.00	pCi/L		JE1	08/01/24	0833	2645055	4
9310, Alpha/Beta Acti	vity, liquid "A	As Received'	1										
Alpha	U	-0.865	+/-2.38	6.58	+/-2.39	15.0	pCi/L		HH3	08/01/24	1351	2643718	5
Beta		31.5	+/-8.17	9.06	+/-9.70	50.0	pCi/L						
Rad Liquid Scintillation	n Analysis												
Tc-02-RC-MOD, Tc99	, Liquid "As	Received"											
Technetium-99		42.7	+/-11.5	17.7	+/-12.5	25.0	pCi/L		GS3	08/11/24	1454	2645965	6
The following Applyties	al Mathada u		mad										

The following Analytical Methods were performed

Method	Description
1	Eichrom Industries, AN-1418
2	DOE EML HASL-300, Th-01-RC Modified
3	EPA 904.0/SW846 9320 Modified
4	EPA 905.0 Modified/DOE RP501 Rev. 1 Modified
5	EPA 900.0/SW846 9310
6	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	AN-1418 AlphaSpec Ra226, Liquid "As Received"	2646943	93.4	(30%-110%)
Thorium-229 Tracer	Th-01-RC M, Th Isotopes, Liquid "As Received"	2646941	83.1	(30%-110%)
Barium-133 Tracer	904.0Mod, Ra228, Liquid "As Received"	2643862	80.2	(30%-110%)
Strontium Carrier	905.0Mod, Sr90, liquid "As Received"	2645055	59.9	(30%-110%)
Technetium-99m Tracer	Tc-02-RC-MOD, Tc99, Liquid "As Received"	2645965	102	(30%-110%)

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Quarterly(UG24-04)

Client Sample ID: MW369UG4-24 Project: FRNP00507 Sample ID: 676265001 Project: FRNP005

Parameter Qualifier Result Uncertainty MDC TPU RL Units PF DF Analyst Date Time Batch Mtd.
Surrogate/Tracer Recovery Test Batch ID Recovery% Acceptable Limits

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Mtd.: Method
DL: Detection Limit PF: Prep Factor
Lc/LC: Critical Level RL: Reporting Limit

MDA: Minimum Detectable Activity TPU: Total Propagated Uncertainty

MDC: Minimum Detectable Concentration

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

LLC Address:

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Project:

Client ID:

FRNP00507

FRNP005

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Quarterly(UG24-04)

Client Sample ID: Sample ID: Matrix: MW370UG4-24 676265003 WG 17-JUL-24

Collect Date: Receive Date: 19-JUL-24 Collector: Client

Parameter	Qualifier	Result U	ncertainty	MDC	TPU	RL	Units	PF	DF Analy	st Date	Time	Batch	Mtd.
Rad Alpha Spec Anal	lysis												
AN-1418 AlphaSpec	Ra226, Liquid	"As Receiv	red"										
Radium-226	U	0.683	+/-0.887	1.26	+/-0.888	5.00	pCi/L		CM4	08/04/24	1300	2646943	1
Th-01-RC M, Th Iso	otopes, Liquid "A	As Received	"										
Thorium-230	U	0.384	+/-0.627	1.06	+/-0.632	50.0	pCi/L		MB3	08/01/24	1340	2646941	2
Thorium-232	U	0.0942	+/-0.286	0.397	+/-0.287		pCi/L						
Rad Gas Flow Propor	rtional Countir	ng											
904.0Mod, Ra228, I	Liquid "As Rece	ived"											
Radium-228	U	2.78	+/-2.98	4.98	+/-3.07	4.99	pCi/L		KP1	08/05/24	1314	2643862	3
905.0Mod, Sr90, liq	uid "As Receive	ed"											
Strontium-90	U	2.56	+/-2.06	3.29	+/-2.10	8.00	pCi/L		JE1	08/08/24	1258	2645055	4
9310, Alpha/Beta Ad	ctivity, liquid "A	As Received	"										
Alpha	U	0.184	+/-2.70	6.29	+/-2.70	15.0	pCi/L		НН3	08/01/24	1351	2643718	5
Beta		14.1	+/-6.40	8.83	+/-6.82	50.0	pCi/L						
Rad Liquid Scintillati	ion Analysis												
906.0M, Tritium Dis	st, Liquid "As R	eceived"											
Tritium	U	-40.0	+/-160	290	+/-160	300	pCi/L		HB2	08/06/24	2150	2644436	6
Tc-02-RC-MOD, Tc	99, Liquid "As I	Received"											
Technetium-99	U	-4.19	+/-10.4	18.8	+/-10.4	25.0	pCi/L		GS3	08/05/24	2018	2645965	7
The following Apolyt	inal Mathada												

Method	Description
1	Eichrom Industries, AN-1418
2	DOE EML HASL-300, Th-01-RC Modified
3	EPA 904.0/SW846 9320 Modified
4	EPA 905.0 Modified/DOE RP501 Rev. 1 Modified
5	EPA 900.0/SW846 9310
6	EPA 906.0 Modified
7	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits	
Barium-133 Tracer	AN-1418 AlphaSpec Ra226, Liquid "As Received"	2646943	94.6	(30%-110%)	
Thorium-229 Tracer	Th-01-RC M, Th Isotopes, Liquid "As Received"	2646941	55.1	(30%-110%)	
Barium-133 Tracer	904.0Mod, Ra228, Liquid "As Received"	2643862	80.1	(30%-110%)	
Strontium Carrier	905.0Mod, Sr90, liquid "As Received"	2645055	70.6	(30%-110%)	
Technetium-99m Tracer	Tc-02-RC-MOD, Tc99, Liquid "As Received"	2645965	96.8	(30%-110%)	

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Quarterly(UG24-04)

Client Sample ID: MW370UG4-24 Project: FRNP00507 Sample ID: Client ID: FRNP005 676265003

Parameter Qualifier **Result Uncertainty** Units MDC **TPU** RLPF DF Analyst Date Time Batch Mtd. **Acceptable Limits** Batch ID Recovery%

Surrogate/Tracer Recovery

Test

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Mtd.: Method DL: Detection Limit PF: Prep Factor Lc/LC: Critical Level **RL**: Reporting Limit

MDA: Minimum Detectable Activity TPU: Total Propagated Uncertainty

MDC: Minimum Detectable Concentration

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Project: Client ID:

FRNP00507 FRNP005

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Quarterly(UG24-04)

Client Sample ID: MW371UG4-24 Sample ID: 676265005 Matrix: WG Collect Date: 17-JUL-24 Receive Date: 19-JUL-24

Collector: Client

Parameter	Qualifier	Result U	ncertainty	MDC	TPU	RL	Units	PF	DF Analys	t Date	Time	Batch	Mtd.
Rad Alpha Spec Ar	nalysis												
AN-1418 AlphaSp	pec Ra226, Liquid	"As Receiv	red"										
Radium-226	U	1.31	+/-1.28	1.80	+/-1.28	5.00	pCi/L		CM4	08/04/24	1300	2646943	1
Th-01-RC M, Th	Isotopes, Liquid "A	As Received	"										
Thorium-230	U	0.125	+/-0.570	1.12	+/-0.572	50.0	pCi/L		MB3	08/05/24	1247	2646941	. 2
Thorium-232	U	-0.0482	+/-0.331	0.804	+/-0.333		pCi/L						
Rad Gas Flow Prop	ortional Countir	ng											
904.0Mod, Ra228	3, Liquid "As Rece	ived"											
Radium-228	U	-2.37	+/-2.30	4.85	+/-2.30	4.99	pCi/L		KP1	08/05/24	1314	2643862	2 3
905.0Mod, Sr90,	liquid "As Receive	ed"											
Strontium-90	U	-2.24	+/-2.00	4.55	+/-2.00	8.00	pCi/L		JE1	08/01/24	0833	2645055	4
9310, Alpha/Beta	Activity, liquid "A	As Received	"										
Alpha	U	6.55	+/-6.26	9.84	+/-6.37	15.0	pCi/L		HH3	08/01/24	1351	2643718	5
Beta	U	0.402	+/-4.92	9.25	+/-4.93	50.0	pCi/L						
Rad Liquid Scintill 906.0M, Tritium I	ation Analysis Dist, Liquid "As R	eceived"											
Tritium	U	60.6	+/-168	292	+/-168	300	pCi/L		HB2	08/06/24	2227	2644436	6
Tc-02-RC-MOD,	Tc99, Liquid "As I	Received"											
Technetium-99	U	1.76	+/-10.8	18.6	+/-10.8	25.0	pCi/L		GS3	08/11/24	1531	2645965	7
The fellowing Anal	4! a a M a 4 b a 4 a												

Method	Description
1	Eichrom Industries, AN-1418
2	DOE EML HASL-300, Th-01-RC Modified
3	EPA 904.0/SW846 9320 Modified
4	EPA 905.0 Modified/DOE RP501 Rev. 1 Modified
5	EPA 900.0/SW846 9310
6	EPA 906.0 Modified
7	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits	
Barium-133 Tracer	AN-1418 AlphaSpec Ra226, Liquid "As Received"	2646943	92.6	(30%-110%)	
Thorium-229 Tracer	Th-01-RC M, Th Isotopes, Liquid "As Received"	2646941	85.3	(30%-110%)	
Barium-133 Tracer	904.0Mod, Ra228, Liquid "As Received"	2643862	81.3	(30%-110%)	
Strontium Carrier	905.0Mod, Sr90, liquid "As Received"	2645055	85.6	(30%-110%)	
Technetium-99m Tracer	Tc-02-RC-MOD, Tc99, Liquid "As Received"	2645965	98.4	(30%-110%)	

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Quarterly(UG24-04)

Client Sample ID: MW371UG4-24 Project: FRNP00507 Sample ID: Client ID: FRNP005 676265005

Parameter Qualifier **Result Uncertainty** Units MDC **TPU** RLPF DF Analyst Date Time Batch Mtd. **Acceptable Limits** Surrogate/Tracer Recovery Batch ID Recovery%

Test

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Mtd.: Method DL: Detection Limit PF: Prep Factor Lc/LC: Critical Level **RL**: Reporting Limit

MDA: Minimum Detectable Activity TPU: Total Propagated Uncertainty

MDC: Minimum Detectable Concentration

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

LLC Address:

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Project: Client ID:

FRNP00507 FRNP005

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Quarterly(UG24-04)

Client Sample ID: Sample ID: Matrix: MW372UG4-24 676265007 WG Collect Date: 17-JUL-24 Receive Date: 19-JUL-24

Collector: Client

Parameter	Qualifier	Result U	ncertainty	MDC	TPU	RL	Units	PF	DF Analys	st Date	Time	Batch	Mtd.
Rad Alpha Spec Ai	nalysis												
AN-1418 AlphaS _l	pec Ra226, Liquid	"As Receiv	ed"										
Radium-226	U	0.0157	+/-0.721	1.58	+/-0.722	5.00	pCi/L		CM4	08/04/24	1300	2646943	3 1
Th-01-RC M, Th	Isotopes, Liquid "A	As Received	"										
Thorium-230	U	0.309	+/-0.392	0.588	+/-0.396	50.0	pCi/L		MB3	08/01/24	1340	2646941	1 2
Thorium-232	U	-0.0419	+/-0.147	0.402	+/-0.148		pCi/L						
Rad Gas Flow Proj	portional Countir	ng											
904.0Mod, Ra228	8, Liquid "As Rece	ived"											
Radium-228	U	0.0188	+/-2.12	4.25	+/-2.12	4.99	pCi/L		KP1	08/05/24	1314	2643862	2 3
905.0Mod, Sr90,	liquid "As Receive	ed"											
Strontium-90	U	-2.62	+/-1.73	4.13	+/-1.73	8.00	pCi/L		JE1	08/01/24	0833	2645055	5 4
9310, Alpha/Beta	Activity, liquid "A	As Received'	,										
Alpha	U	0.0672	+/-3.91	9.40	+/-3.92	15.0	pCi/L		НН3	08/08/24	1154	2643718	3 5
Beta	U	7.82	+/-7.21	11.8	+/-7.33	50.0	pCi/L						
Rad Liquid Scintill	•												
	Dist, Liquid "As R												
Tritium	U	-87.0	+/-155	287	+/-155	300	pCi/L		HB2	08/06/24	2303	2644436	6
Tc- 02 - RC - MOD ,	Tc99, Liquid "As I	Received"											
Technetium-99	U	17.5	+/-11.1	18.2	+/-11.2	25.0	pCi/L		GS3	08/11/24	1608	2645965	, 7
750 e 11 · A	1 (* 134 () 1	•											

Method	Description
1	Eichrom Industries, AN-1418
2	DOE EML HASL-300, Th-01-RC Modified
3	EPA 904.0/SW846 9320 Modified
4	EPA 905.0 Modified/DOE RP501 Rev. 1 Modified
5	EPA 900.0/SW846 9310
6	EPA 906.0 Modified
7	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits	
Barium-133 Tracer	AN-1418 AlphaSpec Ra226, Liquid "As Received"	2646943	93.8	(30%-110%)	
Thorium-229 Tracer	Th-01-RC M, Th Isotopes, Liquid "As Received"	2646941	71.4	(30%-110%)	
Barium-133 Tracer	904.0Mod, Ra228, Liquid "As Received"	2643862	73.7	(30%-110%)	
Strontium Carrier	905.0Mod, Sr90, liquid "As Received"	2645055	96.3	(30%-110%)	
Technetium-99m Tracer	Tc-02-RC-MOD, Tc99, Liquid "As Received"	2645965	99.5	(30%-110%)	

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Quarterly(UG24-04)

Client Sample ID: MW372UG4-24 Project: FRNP00507 Sample ID: 676265007 Client ID: FRNP005

Parameter Qualifier Result Uncertainty MDC TPU RL Units PF DF Analyst Date Time Batch Mtd.

Surrogate/Tracer Recovery Test Batch ID Recovery% Acceptable Limits

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Mtd.: Method
DL: Detection Limit PF: Prep Factor
Lc/LC: Critical Level RL: Reporting Limit

MDA: Minimum Detectable Activity TPU: Total Propagated Uncertainty

MDC: Minimum Detectable Concentration

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

LLC Address:

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Project:

Client ID:

FRNP00507

FRNP005

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Quarterly(UG24-04)

Client Sample ID: Sample ID: Matrix: MW373UG4-24 676265009 WG Collect Date: 17-JUL-24 Receive Date: 19-JUL-24

Collector: Client

Parameter	Qualifier	Result U	ncertainty	MDC	TPU	RL	Units	PF	DF Analy	st Date	Time	Batch	Mtd.
Rad Alpha Spec Analysi	is												
AN-1418 AlphaSpec R	a226, Liquid	"As Receiv	ed"										
Radium-226	U	0.529	+/-0.937	1.56	+/-0.937	5.00	pCi/L		CM4	08/04/24	1300	2646943	1
Th-01-RC M, Th Isotop	pes, Liquid "A	As Received	"										
Thorium-230	U	0.449	+/-0.462	0.648	+/-0.468	50.0	pCi/L		MB3	08/01/24	1340	2646941	2
Thorium-232	U	-0.00523	+/-0.217	0.494	+/-0.217		pCi/L						
Rad Gas Flow Proportion	onal Countin	ng											
904.0Mod, Ra228, Liq	uid "As Rece	ived"											
Radium-228	U	0.00453	+/-2.33	4.59	+/-2.33	4.99	pCi/L		KP1	08/05/24	1314	2643862	. 3
905.0Mod, Sr90, liquid	l "As Receive	ed"											
Strontium-90	U	4.11	+/-3.90	6.42	+/-3.95	8.00	pCi/L		JE1	08/01/24	0833	2645055	4
9310, Alpha/Beta Activ	vity, liquid "A	As Received'	1										
Alpha	U	-0.776	+/-3.21	8.15	+/-3.22	15.0	pCi/L		НН3	08/01/24	1351	2643718	5
Beta	U	7.68	+/-6.20	9.88	+/-6.33	50.0	pCi/L						
Rad Liquid Scintillation	Analysis												
906.0M, Tritium Dist,	Liquid "As R	eceived"											
Tritium	U	136	+/-169	285	+/-171	300	pCi/L		HB2	08/06/24	2340	2644436	6
Tc-02-RC-MOD, Tc99	, Liquid "As	Received"											
Technetium-99	U	-8.77	+/-10.1	18.9	+/-10.1	25.0	pCi/L		GS3	08/05/24	2108	2645965	7
The following Analytics	134.411	· · · · · · · · · · · · · · · · · · ·											

Method	Description
1	Eichrom Industries, AN-1418
2	DOE EML HASL-300, Th-01-RC Modified
3	EPA 904.0/SW846 9320 Modified
4	EPA 905.0 Modified/DOE RP501 Rev. 1 Modified
5	EPA 900.0/SW846 9310
6	EPA 906.0 Modified
7	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits	
Barium-133 Tracer	AN-1418 AlphaSpec Ra226, Liquid "As Received"	2646943	94.3	(30%-110%)	
Thorium-229 Tracer	Th-01-RC M, Th Isotopes, Liquid "As Received"	2646941	64.4	(30%-110%)	
Barium-133 Tracer	904.0Mod, Ra228, Liquid "As Received"	2643862	77.2	(30%-110%)	
Strontium Carrier	905.0Mod, Sr90, liquid "As Received"	2645055	87.7	(30%-110%)	
Technetium-99m Tracer	Tc-02-RC-MOD, Tc99, Liquid "As Received"	2645965	96.3	(30%-110%)	

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Company: Four Rivers Nuclear Partnership,

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5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Quarterly(UG24-04)

Client Sample ID: MW373UG4-24 Project: FRNP00507 Sample ID: Client ID: FRNP005 676265009

Parameter Qualifier **Result Uncertainty** Units PF DF Analyst Date Time Batch Mtd. MDC **TPU** RL

Surrogate/Tracer Recovery Test Batch ID Recovery% **Acceptable Limits**

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Mtd.: Method DL: Detection Limit PF: Prep Factor Lc/LC: Critical Level **RL**: Reporting Limit

MDA: Minimum Detectable Activity TPU: Total Propagated Uncertainty

MDC: Minimum Detectable Concentration

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Company: Four Rivers Nuclear Partnership,

LLC Address:

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Kevil, Kentucky 42053 Report Date: October 31, 2024

Project:

Client ID:

FRNP00507

FRNP005

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Quarterly(UG24-04)

Client Sample ID: Sample ID: Matrix: MW374UG4-24 676265011 WG Collect Date: 17-JUL-24 Receive Date: 19-JUL-24

Collector: Client

Parameter	Qualifier	Result U	ncertainty	MDC	TPU	RL	Units	PF	DF Analy	st Date	Time	Batch 1	Mtd.
Rad Alpha Spec Ai	nalysis												
AN-1418 AlphaS _I	pec Ra226, Liquid	"As Receiv	red"										
Radium-226	U	0.272	+/-1.06	2.04	+/-1.06	5.00	pCi/L		CM4	08/04/24	1300	2646943	1
Th-01-RC M, Th	Isotopes, Liquid "A	As Received	!"										
Thorium-230	U	0.433	+/-0.403	0.542	+/-0.409	50.0	pCi/L		MB3	08/01/24	1340	2646941	2
Thorium-232	U	0.161	+/-0.243	0.315	+/-0.244		pCi/L						
Rad Gas Flow Prop	portional Countin	ng											
904.0Mod, Ra228	8, Liquid "As Rece	ived"											
Radium-228	U	0.372	+/-2.70	4.88	+/-2.70	4.99	pCi/L		KP1	08/05/24	1314	2643862	3
905.0Mod, Sr90,	liquid "As Receive	ed"											
Strontium-90	U	2.41	+/-2.38	3.90	+/-2.41	8.00	pCi/L		JE1	08/01/24	0833	2645055	4
9310, Alpha/Beta	Activity, liquid "A	As Received	"										
Alpha	U	0.694	+/-5.06	10.4	+/-5.06	15.0	pCi/L		HH3	08/01/24	1351	2643718	5
Beta	U	-1.61	+/-5.29	10.4	+/-5.29	50.0	pCi/L						
Rad Liquid Scintill	ation Analysis												
906.0M, Tritium	Dist, Liquid "As R	eceived"											
Tritium	U	-111	+/-157	293	+/-157	300	pCi/L		HB2	08/07/24	0017	2644436	6
Tc- 02 - RC - MOD ,	Tc99, Liquid "As	Received"											
Technetium-99	U	-13.4	+/-9.94	19.1	+/-9.94	25.0	pCi/L		GS3	08/05/24	2125	2645965	7

Method	Description
1	Eichrom Industries, AN-1418
2	DOE EML HASL-300, Th-01-RC Modified
3	EPA 904.0/SW846 9320 Modified
4	EPA 905.0 Modified/DOE RP501 Rev. 1 Modified
5	EPA 900.0/SW846 9310
6	EPA 906.0 Modified
7	DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits	
Barium-133 Tracer	AN-1418 AlphaSpec Ra226, Liquid "As Received"	2646943	96.1	(30%-110%)	
Thorium-229 Tracer	Th-01-RC M, Th Isotopes, Liquid "As Received"	2646941	85.5	(30%-110%)	
Barium-133 Tracer	904.0Mod, Ra228, Liquid "As Received"	2643862	82.1	(30%-110%)	
Strontium Carrier	905.0Mod, Sr90, liquid "As Received"	2645055	92	(30%-110%)	
Technetium-99m Tracer	Tc-02-RC-MOD, Tc99, Liquid "As Received"	2645965	95.4	(30%-110%)	

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 31, 2024

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Quarterly(UG24-04)

Client Sample ID: MW374UG4-24 Project: FRNP00507 Sample ID: Client ID: FRNP005 676265011

Parameter Qualifier **Result Uncertainty** Units PF DF Analyst Date Time Batch Mtd. MDC **TPU** RL**Acceptable Limits** Batch ID Recovery%

Surrogate/Tracer Recovery

Test

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Mtd.: Method DL: Detection Limit PF: Prep Factor Lc/LC: Critical Level **RL**: Reporting Limit

MDA: Minimum Detectable Activity TPU: Total Propagated Uncertainty

MDC: Minimum Detectable Concentration

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Quarterly(UG24-04)

Client Sample ID: MW369UG4-24

Sample ID: 676265001

Matrix: WG

Collect Date: 17-JUL-24 12:41
Receive Date: 19-JUL-24
Collector: Client

Project: FRNP00507 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Anal	yst Date	Time Batch	Method
Mercury Analysis-CV	/AA										
7470, Mercury Liquid	d "As Received	."									
Mercury	U	0.000200	0.0000670	0.000200	mg/L	1.00	1	JP2	07/24/24	1104 2644397	1
Metals Analysis-ICP-	MS										
6020, Metals (15+ ele	ements) "As Re	ceived"									
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00	1	PRB	07/31/24	1713 2643653	2
Aluminum	J	0.0269	0.0193	0.0500	mg/L	1.00	1	PRB	07/30/24	2105 2643653	3
Antimony	U	0.00300	0.00100	0.00300	mg/L	1.00	1				
Arsenic	U	0.00500	0.00200	0.00500	mg/L	1.00	1				
Barium		0.359	0.000670	0.00400	mg/L	1.00	1				
Beryllium	U	0.000500	0.000200	0.000500	mg/L	1.00	1				
Boron	J	0.0137	0.00520	0.0150	mg/L	1.00	1				
Cadmium	U	0.00100	0.000300	0.00100	mg/L	1.00	1				
Calcium		15.1	0.0800	0.200	mg/L	1.00	1				
Chromium	U	0.0100	0.00300	0.0100	mg/L	1.00	1				
Cobalt		0.00431	0.000300	0.00100	mg/L	1.00	1				
Copper		0.00295	0.000300	0.00200	mg/L	1.00	1				
Iron	J	0.0486	0.0330	0.100	mg/L	1.00	1				
Lead	U	0.00200	0.000500	0.00200	mg/L	1.00	1				
Magnesium		6.22	0.0100	0.0300	mg/L	1.00	1				
Manganese	J	0.00423	0.00100	0.00500	mg/L	1.00	1				
Molybdenum	U	0.00100	0.000200	0.00100	mg/L	1.00	1				
Nickel		0.00432	0.000600	0.00200	mg/L	1.00	1				
Potassium		0.499	0.0800	0.300	mg/L	1.00	1				
Selenium	J	0.00200	0.00150	0.00500	mg/L	1.00	1				
Silver	U	0.00100	0.000300	0.00100	mg/L	1.00	1				
Sodium		48.4	0.0800	0.250	mg/L	1.00	1				
Thallium	U	0.00200	0.000600	0.00200	mg/L	1.00	1				
Vanadium	U	0.0200	0.00330	0.0200	mg/L	1.00	1				
Zinc	J	0.00676	0.00330	0.0200	mg/L	1.00	1				
Rhodium	U	0.00500	0.00160	0.00500	mg/L	1.00	1	PRB	07/30/24	1824 2643653	4
Tantalum	U	0.00500	0.00100	0.00500	mg/L	1.00	1				
The following Prep M	lethods were po	erformed:									
Method	Description	n		Analyst	Date	,	Tim	e P	rep Batch		_
SW846 7470A Prep	EPA 7470A I	Mercury Prep Liquid		JM13	07/23/24		1110	26	544396		
SW846 3005A	ICP-MS 3005	5A PREP		BB2	07/23/24		1445	26	643652		

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Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Quarterly(UG24-04)

Client Sample ID: MW369UG4-24 Project: FRNP00507 Sample ID: 676265001 Client ID: FRNP005

Parameter	Qualifier Result	DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
The following Ar	nalytical Methods were performed:							
Method	Description			A	nalys	st Comments		
1	SW846 7470A				-			
2	SW846 3005A/6020B							
3	SW846 3005A/6020B							
4	SW846 3005A/6020B							

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

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Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Quarterly(UG24-04)

Client Sample ID: MW369UG4-24 Sample ID: 676265002

Matrix: WG

Collect Date: 17-JUL-24 12:41
Receive Date: 19-JUL-24
Collector: Client

Project: FRNP00507 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Ana	lyst Date	Time	Batch	Method
Metals Analysis-ICP-M	S											
6020, Dissolved Metals	(3 Elements)	"As Received"										
Barium		0.349	0.000670	0.00400	mg/L	1.00	1	PRB	07/30/24	2109	2643653	1
Chromium	U	0.0100	0.00300	0.0100	mg/L	1.00	1					
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00	1	PRB	07/31/24	1714	2643653	2
The following Prep Met	thods were pe	erformed:										
Method	Description	1		Analyst	Date		Time	e F	Prep Batch			
SW846 3005A	ICP-MS 3005	A PREP		BB2	07/23/24		1445	2	643652			
EPA 160	Laboratory Fi	ltration		JP2	07/19/24		1435	2	643642			
The following Analytic	al Methods w	vere performed:										
Method	Description				A	Analys	t Co	nmen	its			

SW846 3005A/6020B SW846 3005A/6020B

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: October 31, 2024

FRNP00507

FRNP005

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Quarterly(UG24-04)

Client Sample ID: MW370UG4-24

Sample ID: 676265003

Matrix: WG

Collect Date: 17-JUL-24 14:54 Receive Date: 19-JUL-24 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time 1	Batch	Method
Mercury Analysis-C	VAA											
7470, Mercury Liqui	id "As Received"	"										
Mercury	U	0.000200	0.0000670	0.000200	mg/L	1.00	1	JP2	07/24/24	1106 2	2644397	1
Metals Analysis-ICF	P-MS											
6020, Metals (15+ el		ceived"										
Aluminum		0.814	0.0193	0.0500	mg/L	1.00	1	PRB	07/30/24	2113 2	2643653	2
Antimony	U	0.00300	0.00100	0.00300	mg/L	1.00	1					
Arsenic	U	0.00500	0.00200	0.00500	mg/L	1.00	1					
Barium		0.212	0.000670	0.00400	mg/L	1.00	1					
Beryllium	U	0.000500	0.000200	0.000500	mg/L	1.00	1					
Boron		0.0977	0.00520	0.0150	mg/L	1.00	1					
Cadmium	U	0.00100	0.000300	0.00100	mg/L	1.00	1					
Calcium		29.0	0.0800	0.200	mg/L	1.00	1					
Chromium	J	0.00371	0.00300	0.0100	mg/L	1.00	1					
Cobalt	J	0.000355	0.000300	0.00100	mg/L	1.00	1					
Copper	J	0.00111	0.000300	0.00200	mg/L	1.00	1					
Iron		1.70	0.0330	0.100	mg/L	1.00	1					
Lead	J	0.000518	0.000500	0.00200	mg/L	1.00	1					
Magnesium		12.1	0.0100	0.0300	mg/L	1.00	1					
Manganese		0.0587	0.00100	0.00500	mg/L	1.00	1					
Molybdenum	J	0.000285	0.000200	0.00100	mg/L	1.00	1					
Nickel	J	0.000938	0.000600	0.00200	mg/L	1.00	1					
Potassium		2.36	0.0800	0.300	mg/L	1.00	1					
Selenium	U	0.00500	0.00150	0.00500	mg/L	1.00	1					
Silver	U	0.00100	0.000300	0.00100	mg/L	1.00	1					
Sodium		41.9	0.0800	0.250	mg/L	1.00	1					
Thallium	U	0.00200	0.000600	0.00200	mg/L	1.00	1					
Vanadium	U	0.0200	0.00330	0.0200	mg/L	1.00	1					
Zinc	J	0.00377	0.00330	0.0200	mg/L	1.00	1					
Uranium	J	0.000108	0.0000670	0.000200	mg/L	1.00	1	PRB	07/31/24	1716 2		3
Rhodium	U	0.00500	0.00160	0.00500	mg/L	1.00	1	PRB	07/30/24	1826 2	2643653	4
Tantalum	U	0.00500	0.00100	0.00500	mg/L	1.00	1					
The following Prep	Methods were pe	erformed:										
Method	Description	1		Analyst	Date	-	Time	Pre	ep Batch			
SW846 7470A Prep		Mercury Prep Liquid		JM13	07/23/24		1110		14396			
SW846 3005A	ICP-MS 3005			BB2	07/23/24		1445		13652			

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Quarterly(UG24-04)

Client Sample ID: MW370UG4-24 Project: FRNP00507 Sample ID: 676265003 Client ID: FRNP005

Parameter	Qualifier Result	DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
The following Ar	nalytical Methods were performed:							
Method	Description			A	nalys	st Comments		
1	SW846 7470A				-			
2	SW846 3005A/6020B							
3	SW846 3005A/6020B							
4	SW846 3005A/6020B							

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

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Certificate of Analysis

Report Date: October 31, 2024

FRNP00507

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Quarterly(UG24-04)

Client Sample ID: MW370UG4-24 Sample ID: 676265004

Matrix: WG

Collect Date: 17-JUL-24 14:54 Receive Date: 19-JUL-24 Collector: Client

O4 Client ID: FRNP005

Project:

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Ana	lyst Date	Time	Batch	Method
Metals Analysis-IO	CP-MS											
6020, Dissolved M	Metals (3 Elements)	"As Received"										
Barium		0.207	0.000670	0.00400	mg/L	1.00	1	PRB	07/30/24	2116	2643653	1
Chromium	U	0.0100	0.00300	0.0100	mg/L	1.00	1					
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00	1	PRB	07/31/24	1718	2643653	2
The following Pre	p Methods were pe	erformed:										
Method	Description	n		Analyst	Date	,	Tim	e F	Prep Batch			
EPA 160	Laboratory Fi	ltration		JP2	07/19/24		1435	2	643642			
SW846 3005A	ICP-MS 3005	SA PREP		BB2	07/23/24		1445	2	643652			
The following An	alytical Methods v	vere performed:										
Method	Description	Į.			P	Analys	t Co	mmen	its			

1 SW846 3005A/6020B

2 SW846 3005A/6020B

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

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Certificate of Analysis

Project:

Client ID:

Report Date: October 31, 2024

FRNP00507

FRNP005

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Quarterly(UG24-04)

Client Sample ID: MW371UG4-24

Sample ID: 676265005

Matrix: WG

Collect Date: 17-JUL-24 13:59
Receive Date: 19-JUL-24
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Ana	lyst Date	Time	Batch	Method
Mercury Analysis-CVA	A											
7470, Mercury Liquid "	As Received	"										
Mercury	U	0.000200	0.0000670	0.000200	mg/L	1.00	1	JP2	07/24/24	1108	2644397	1
Metals Analysis-ICP-M	S				C							
6020, Metals (15+ elem		ceived"										
Aluminum	115 110	0.104	0.0193	0.0500	mg/L	1.00	1	PRB	07/30/24	2120	2643653	2
Antimony	U	0.00300	0.00100	0.00300	mg/L	1.00			223.			_
Arsenic	U	0.00500	0.00200	0.00500	mg/L	1.00						
Barium	C	0.157	0.000670	0.00400	mg/L	1.00						
Beryllium	U	0.000500	0.000200	0.000500	mg/L	1.00						
Boron	Ü	0.0150	0.00520	0.0150	mg/L	1.00						
Cadmium	Ü	0.00100	0.000300	0.00100	mg/L	1.00						
Chromium	Ü	0.0100	0.00300	0.0100	mg/L	1.00						
Cobalt	Ü	0.00100	0.000300	0.00100	mg/L	1.00						
Copper	J	0.000961	0.000300	0.00200	mg/L	1.00						
Iron	J	0.0921	0.0330	0.100	mg/L	1.00						
Lead	Ü	0.00200	0.000500	0.00200	mg/L	1.00						
Magnesium	C	16.2	0.0100	0.0300	mg/L	1.00						
Manganese		0.00570	0.00100	0.00500	mg/L	1.00						
Molybdenum	J	0.000438	0.000200	0.00100	mg/L	1.00						
Nickel	J	0.00147	0.000600	0.00200	mg/L	1.00						
Potassium	· ·	0.359	0.0800	0.300	mg/L	1.00						
Selenium	U	0.00500	0.00150	0.00500	mg/L	1.00						
Silver	Ü	0.00100	0.000300	0.00100	mg/L	1.00						
Thallium	Ü	0.00200	0.000600	0.00200	mg/L	1.00						
Vanadium	J	0.00526	0.00330	0.0200	mg/L	1.00						
Zinc	U	0.0200	0.00330	0.0200	mg/L	1.00						
Calcium	_	56.8	0.800	2.00	mg/L	1.00		PRB	07/30/24	2124	2643653	3
Sodium		74.2	0.800	2.50	mg/L	1.00						
Uranium		0.00194	0.0000670	0.000200	mg/L	1.00	1	PRB	07/31/24	1720	2643653	4
Rhodium	U	0.00500	0.00160	0.00500	mg/L	1.00		PRB	07/30/24		2643653	5
Tantalum	Ü	0.00500	0.00100	0.00500	mg/L	1.00						
The following Prep Met					C							
Method	Description			Analyst	Date	,	Time	<u> </u>	Prep Batch			
SW846 3005A	ICP-MS 3005			BB2	07/23/24		1445		2643652			
SW846 7470A Prep		Mercury Prep Liquid		JM13	07/23/24		1110		2644396			

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Quarterly(UG24-04)

Client Sample ID: MW371UG4-24 Project: FRNP00507 Sample ID: 676265005 Client ID: FRNP005

Parameter	Qualifier Result	DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
The following Analy	ytical Methods were performed:							
Method	Description			Α	Analys	st Comments		
1	SW846 7470A							
2	SW846 3005A/6020B							
3	SW846 3005A/6020B							
4	SW846 3005A/6020B							
5	SW846 3005A/6020B							

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

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Certificate of Analysis

Report Date: October 31, 2024

FRNP00507

FRNP005

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Quarterly(UG24-04)

Client Sample ID: MW371UG4-24 Sample ID: 676265006

Matrix: WG

Collect Date: 17-JUL-24 13:59
Receive Date: 19-JUL-24
Collector: Client

Collector: Client

Project:

Client ID:

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Time Batch	Method
Metals Analysis-ICP-M	S									
6020, Dissolved Metals	(3 Elements)	"As Received"								
Uranium		0.00188	0.0000670	0.000200	mg/L	1.00	1	PRB 07/31/24	1722 2643653	1
Barium		0.158	0.000670	0.00400	mg/L	1.00	1	PRB 07/30/24	2135 2643653	2
Chromium	U	0.0100	0.00300	0.0100	mg/L	1.00	1			
The following Prep Met	hods were pe	erformed:								

Method Prep Batch Description Analyst Date Time EPA 160 Laboratory Filtration 07/19/24 2643642 JP2 1435 SW846 3005A ICP-MS 3005A PREP BB2 07/23/24 1445 2643652

The following Analytical Methods were performed:

 Method
 Description
 Analyst Comments

 1
 SW846 3005A/6020B

2 SW846 3005A/6020B

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

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Project:

Client ID:

Report Date: October 31, 2024

FRNP00507

FRNP005

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Quarterly(UG24-04)

Client Sample ID: MW372UG4-24

Sample ID: 676265007

Matrix: WG

Collect Date: 17-JUL-24 10:27 Receive Date: 19-JUL-24 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Anal	yst Date	Time	Batch	Method
Mercury Analysis-CV	'AA											
7470, Mercury Liquid	"As Received											
Mercury	U	0.000200	0.0000670	0.000200	mg/L	1.00	1	JP2	07/24/24	1109	2644397	1
Metals Analysis-ICP-	MS											
6020, Metals (15+ ele	ments) "As Re	ceived"										
Uranium	Ú	0.000200	0.0000670	0.000200	mg/L	1.00	1	PRB	07/31/24	1727	2643653	2
Boron		1.86	0.104	0.300	mg/L	1.00	20	PRB	07/30/24	2142	2643653	3
Calcium		65.9	1.60	4.00	mg/L	1.00	20					
Sodium		57.7	1.60	5.00	mg/L	1.00	20					
Rhodium	U	0.00500	0.00160	0.00500	mg/L	1.00	1	PRB	07/30/24	1830	2643653	4
Tantalum	U	0.00500	0.00100	0.00500	mg/L	1.00	1					
Aluminum	U	0.0500	0.0193	0.0500	mg/L	1.00	1	PRB	07/30/24	2138	2643653	5
Antimony	U	0.00300	0.00100	0.00300	mg/L	1.00	1					
Arsenic	U	0.00500	0.00200	0.00500	mg/L	1.00	1					
Barium		0.0622	0.000670	0.00400	mg/L	1.00	1					
Beryllium	U	0.000500	0.000200	0.000500	mg/L	1.00	1					
Cadmium	U	0.00100	0.000300	0.00100	mg/L	1.00	1					
Chromium	U	0.0100	0.00300	0.0100	mg/L	1.00	1					
Cobalt	J	0.000387	0.000300	0.00100	mg/L	1.00	1					
Copper	J	0.00135	0.000300	0.00200	mg/L	1.00	1					
Iron	J	0.0680	0.0330	0.100	mg/L	1.00	1					
Lead	U	0.00200	0.000500	0.00200	mg/L	1.00	1					
Magnesium		22.6	0.0100	0.0300	mg/L	1.00	1					
Manganese	J	0.00400	0.00100	0.00500	mg/L	1.00	1					
Molybdenum	J	0.000312	0.000200	0.00100	mg/L	1.00	1					
Nickel	J	0.000937	0.000600	0.00200	mg/L	1.00	1					
Potassium		2.26	0.0800	0.300	mg/L	1.00	1					
Selenium	U	0.00500	0.00150	0.00500	mg/L	1.00	1					
Silver	U	0.00100	0.000300	0.00100	mg/L	1.00	1					
Thallium	U	0.00200	0.000600	0.00200	mg/L	1.00	1					
Vanadium	U	0.0200	0.00330	0.0200	mg/L	1.00	1					
Zinc	U	0.0200	0.00330	0.0200	mg/L	1.00	1					
The following Prep M	lethods were p	erformed:										
Method	Description	n		Analyst	Date	,	Гim	e P	rep Batch			
SW846 3005A	ICP-MS 3005	5A PREP		BB2	07/23/24		1445	2	643652			
SW846 7470A Prep	EPA 7470A	Mercury Prep Liquid		JM13	07/23/24		1110	2	644396			

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Quarterly(UG24-04)

Client Sample ID: MW372UG4-24 Project: FRNP00507 Sample ID: 676265007 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
The following Analyti	cal Methods v	were performed:							
Method	Description	l				Analys	st Comments		
1	SW846 7470A	A							
2	SW846 3005A	A/6020B							
3	SW846 3005A	A/6020B							
4	SW846 3005A	A/6020B							
5	SW846 3005A	A/6020B							

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

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Certificate of Analysis

Report Date: October 31, 2024

Four Rivers Nuclear Partnership, LLC Company:

5600 Hobbs Road Address:

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Quarterly(UG24-04)

Client Sample ID: MW372UG4-24 Sample ID: 676265008

Matrix: WG

Collect Date: 17-JUL-24 10:27 Receive Date: 19-JUL-24 Collector: Client

Project: FRNP00507 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Anal	yst Date	Time	e Batch	Method
Metals Analysis-ICP-M	IS											
6020, Dissolved Metals	(3 Elements)	"As Received"										
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00	1	PRB	07/31/24	1729	2643653	1
Barium		0.0608	0.000670	0.00400	mg/L	1.00	1	PRB	07/30/24	2153	2643653	2
Chromium	U	0.0100	0.00300	0.0100	mg/L	1.00	1					
The following Prep Me	thods were pe	erformed:										
Method	Description	1		Analyst	Date	,	Time	e F	rep Batch			
SW846 3005A	ICP-MS 3005	A PREP		BB2	07/23/24		1445	2	643652			
EPA 160	Laboratory Fi	ltration		JP2	07/19/24		1435	2	643642			
The following Analytic	cal Methods v	vere performed:										
Method	Description				A	Analys	t Co	nmen	ts			

SW846 3005A/6020B

SW846 3005A/6020B

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level DL: Detection Limit PF: Prep Factor MDA: Minimum Detectable Activity **RL**: Reporting Limit

SQL: Sample Quantitation Limit MDC: Minimum Detectable Concentration

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DL

Report Date: October 31, 2024

DF Analyst Date Time Batch Method

FRNP00507

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Quarterly(UG24-04)

Result

Client Sample ID: MW373UG4-24

Sample ID: 676265009

Matrix: WG

Parameter

Collect Date: 17-JUL-24 08:38
Receive Date: 19-JUL-24
Collector: Client

Oualifier

O9 Client ID: FRNP005

RL

Project:

PF

Units

Parameter	Quanner	Result	DL	KL	Units	РГ	DГ	Anary	st Date	111116	Batch	Method
Carbon Analysis												
9060A, Total Organic C	arbon "As R	eceived"										
Total Organic Carbon Average	e J	1.14	0.330	2.00	mg/L		1	KB3	08/12/24	0921	2653004	1
Flow Injection Analysis												
9012B, Cyanide, Total "	'As Received	l''										
Cyanide, Total	UN	0.200	0.00167	0.200	mg/L	1.00	1	AXH3	07/24/24	0645	2644044	2
Halogen Analysis												
9020B, TOX (Organic H	Halogen) "As	Received"										
Total Organic Halogens	Н	36.6	3.33	10.0	ug/L		1	JS13	08/27/24	1313	2663174	3
Ion Chromatography					C							
300.0, Iodide in Liquid	"As Received	1"										
Iodide	U	0.500	0.167	0.500	mg/L		1	TXT1	08/08/24	1253	2653275	4
SW846 9056A Anions (5 elements) '	"As Received"			C							
Chloride	J	29.7	1.34	250	mg/L		20	CH6	07/19/24	2205	2643498	5
Sulfate		213	2.66	8.00	mg/L		20					
Bromide		0.464	0.0670	0.200	mg/L		1	CH6	07/19/24	1554	2643498	6
Fluoride	J	0.182	0.0330	4.00	mg/L		1					
Nitrate-N	HJ	0.810	0.0330	10.0	mg/L		1					
Mercury Analysis-CVA	A											
7470, Mercury Liquid "	As Received'	"										
Mercury	U	0.000200	0.0000670	0.000200	mg/L	1.00	1	JP2	07/24/24	1147	2643934	7
Metals Analysis-ICP-Ma	S											
6020, Metals (15+ eleme	ents) "As Red	ceived"										
Rhodium	U	0.00500	0.00160	0.00500	mg/L	1.00	1	PRB	07/30/24	1836	2643653	8
Tantalum	U	0.00500	0.00100	0.00500	mg/L	1.00	1					
Boron		2.81	0.104	0.300	mg/L	1.00	20	PRB	07/30/24	2215	2643653	9
Calcium		85.9	1.60	4.00	mg/L		20					
Sodium		71.4	1.60	5.00	mg/L	1.00	20					
Uranium	U	0.000200	0.0000670	0.000200	mg/L	1.00	1	PRB	07/31/24		2643653	10
Aluminum	J	0.0198	0.0193	0.0500	mg/L	1.00	1	PRB	07/30/24	2157	2643653	11
Antimony	U	0.00300	0.00100	0.00300	mg/L	1.00	1					
Arsenic Barium	U	0.00500 0.0356	0.00200 0.000670	0.00500 0.00400	mg/L	1.00 1.00	1					
Beryllium Beryllium	U	0.00500	0.000670	0.00400	mg/L mg/L	1.00	1 1					
Cadmium	U	0.000300	0.000200	0.000300	mg/L	1.00	1					
Caumani	U	0.00100	0.000300	0.00100	mg/L	1.00	1					

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Quarterly(UG24-04)

Client Sample ID: MW373UG4-24 Project: FRNP00507 Sample ID: 676265009 Client ID: FRNP005

Parameter Qual	ifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time Batch	Method
Metals Analysis-ICP-MS											
6020, Metals (15+ elements) ".	As Re	ceived"									
Chromium	U	0.0100	0.00300	0.0100	mg/L	1.00	1				
Cobalt	U	0.00100	0.000300	0.00100	mg/L	1.00	1				
Copper	J	0.00119	0.000300	0.00200	mg/L	1.00	1				
Iron	J	0.0849	0.0330	0.100	mg/L	1.00					
Lead	U	0.00200	0.000500	0.00200	mg/L	1.00	1				
Magnesium		29.1	0.0100	0.0300	mg/L	1.00					
Manganese		0.0356	0.00100	0.00500	mg/L	1.00	1				
Molybdenum	J	0.000383	0.000200	0.00100	mg/L	1.00	1				
Nickel	J	0.00140	0.000600	0.00200	mg/L	1.00	1				
Potassium		2.67	0.0800	0.300	mg/L	1.00					
Selenium	U	0.00500	0.00150	0.00500	mg/L	1.00	1				
Silver	U	0.00100	0.000300	0.00100	mg/L		1				
Thallium	U	0.00200	0.000600	0.00200	mg/L	1.00	1				
Vanadium	U	0.0200	0.00330	0.0200	mg/L	1.00	1				
Zinc	U	0.0200	0.00330	0.0200	mg/L	1.00	1				
Semi-Volatiles-PCB											
8082A, PCB Liquids "As Rece	eived"										
Aroclor-1016	U	0.100	0.0333	0.100	ug/L	0.00100	1	LOF	08/11/24	0131 2654126	5 12
Aroclor-1221	U	0.100	0.0333	0.100	ug/L	0.00100	1				
Aroclor-1232	U	0.100	0.0333	0.100	ug/L	0.00100	1				
Aroclor-1242	U	0.100	0.0333	0.100	ug/L	0.00100	1				
Aroclor-1248	U	0.100	0.0333	0.100	ug/L	0.00100	1				
Aroclor-1254	U	0.100	0.0333	0.100	ug/L	0.00100	1				
Aroclor-1260	U	0.100	0.0333	0.100	ug/L	0.00100	1				
Aroclor-1268	U	0.100	0.0333	0.100	ug/L	0.00100	1				
Aroclor-Total	U	0.100	0.0333	0.100	ug/L	0.00100	1				
Solids Analysis											
160.1, Dissolved Solids "As R	eceive	d"									
Total Dissolved Solids		585	2.38	10.0	mg/L			KLP1	07/23/24	1133 2644678	3 13
Spectrometric Analysis					_						
410.4, Chem. Oxygen Demand	l "As I	Received"									
COD	J	12.9	8.95	20.0	mg/L		1	HH2	07/22/24	1401 2644120) 14
The following Prep Methods w	ere pe	erformed:									
Method Desc	riptio	n		Analyst	Date		Time	Pr	ep Batch		

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Certificate of Analysis

Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Quarterly(UG24-04)

Client Sample ID: MW373UG4-24 Project: FRNP00507 Sample ID: 676265009 Client ID: FRNP005

Parameter	Qualifier Result	DL RL	Units PF	DF Analyst Date	Time Batch Method
SW846 9010C Distillation	SW846 9010C Prep	ES2	07/23/24	1018 2644036	
SW846 7470A Prep	EPA 7470A Mercury Prep Liquid	JM13	07/23/24	1110 2643933	
SW846 3005A	ICP-MS 3005A PREP	BB2	07/23/24	1445 2643652	
SW846 3535A	SW3535A PCB SPE Extraction	DXF4	08/10/24	0531 2654123	

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9060A	
2	SW846 9012B	
3	SW846 9020B	
4	EPA 300.0	
5	SW846 9056A	
6	SW846 9056A	
7	SW846 7470A	
8	SW846 3005A/6020B	
9	SW846 3005A/6020B	
10	SW846 3005A/6020B	
11	SW846 3005A/6020B	
12	SW846 3535A/8082A	
13	EPA 160.1	
14	EPA 410.4	
Curro coto/Troco	r Pagovery Tost	Docult Naminal Pagayary 0/ Agantable Limita

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Decachlorobiphenyl	8082A, PCB Liquids "As Received"	0.150 ug/L	0.200	75	(30%-135%)
4cmx	8082A, PCB Liquids "As Received"	0.149 ug/L	0.200	74	(26%-108%)

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

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Project:

Client ID:

Report Date: October 31, 2024

FRNP00507

FRNP005

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Quarterly(UG24-04)

Client Sample ID: MW373UG4-24

Sample ID: 676265010

Matrix: WG

Collect Date: 17-JUL-24 08:38
Receive Date: 19-JUL-24
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst Date	Time Batch	Method
Metals Analysis-ICP-M	S									
6020, Dissolved Metals	(3 Elements) "As Received"								
Barium		0.0341	0.000670	0.00400	mg/L	1.00	1	PRB 07/30/24	2237 2643653	1
Chromium	U	0.0100	0.00300	0.0100	mg/L	1.00	1			
Uranium	J	0.0000740	0.0000670	0.000200	mg/L	1.00	1	PRB 07/31/24	1743 2643653	2

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	BB2	07/23/24	1445	2643652
EPA 160	Laboratory Filtration	JP2	07/19/24	1435	2643642

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3005A/6020B	•

SW846 3005A/6020B

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

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Certificate of Analysis

Project:

Client ID:

Report Date: October 31, 2024

FRNP00507

FRNP005

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Quarterly(UG24-04)

EPA 7470A Mercury Prep Liquid

Client Sample ID: MW374UG4-24

Sample ID: 676265011

Matrix: WG

SW846 7470A Prep

Collect Date: 17-JUL-24 09:34
Receive Date: 19-JUL-24
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Anal	yst Date	Time	e Batch	Method
Mercury Analysis-CV	AA											
7470, Mercury Liquid	"As Received	"										
Mercury	U	0.000200	0.0000670	0.000200	mg/L	1.00	1	JP2	07/24/24	1111	2644397	1
Metals Analysis-ICP-l	MS				· ·							
6020, Metals (15+ ele	ments) "As Re	ceived"										
Aluminum	,	0.127	0.0193	0.0500	mg/L	1.00	1	PRB	07/30/24	2255	2643653	2
Antimony	U	0.00300	0.00100	0.00300	mg/L	1.00	1					
Arsenic	U	0.00500	0.00200	0.00500	mg/L	1.00	1					
Barium		0.138	0.000670	0.00400	mg/L	1.00	1					
Beryllium	U	0.000500	0.000200	0.000500	mg/L	1.00	1					
Boron		0.0439	0.00520	0.0150	mg/L	1.00	1					
Cadmium	U	0.00100	0.000300	0.00100	mg/L	1.00	1					
Calcium		21.9	0.0800	0.200	mg/L	1.00	1					
Chromium	U	0.0100	0.00300	0.0100	mg/L	1.00	1					
Cobalt	U	0.00100	0.000300	0.00100	mg/L	1.00	1					
Copper	J	0.000922	0.000300	0.00200	mg/L	1.00	1					
Iron		1.13	0.0330	0.100	mg/L	1.00	1					
Lead	U	0.00200	0.000500	0.00200	mg/L	1.00	1					
Magnesium		5.49	0.0100	0.0300	mg/L	1.00	1					
Manganese		0.143	0.00100	0.00500	mg/L	1.00	1					
Molybdenum	J	0.000319	0.000200	0.00100	mg/L	1.00	1					
Nickel	J	0.000827	0.000600	0.00200	mg/L	1.00	1					
Potassium		0.365	0.0800	0.300	mg/L	1.00	1					
Selenium		0.00923	0.00150	0.00500	mg/L	1.00	1					
Silver	U	0.00100	0.000300	0.00100	mg/L	1.00	1					
Thallium	U	0.00200	0.000600	0.00200	mg/L	1.00	1					
Vanadium	U	0.0200	0.00330	0.0200	mg/L	1.00	1					
Zinc	U	0.0200	0.00330	0.0200	mg/L	1.00	1					
Rhodium	U	0.00500	0.00160	0.00500	mg/L	1.00	1	PRB	07/30/24	1845	2643653	3
Tantalum	U	0.00500	0.00100	0.00500	mg/L	1.00	1					
Uranium		0.000522	0.0000670	0.000200	mg/L	1.00	1	PRB	07/31/24	1752	2643653	4
Sodium		110	0.800	2.50	mg/L	1.00	10	PRB	07/30/24	2259	2643653	5
The following Prep M	lethods were p	erformed:										
Method	Description	n		Analyst	Date	,	Tim	e P	rep Batch			
SW846 3005A	ICP-MS 3005			BB2	07/23/24		1445	26	643652			

JM13

07/23/24

1110

2644396

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Report Date: October 31, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Quarterly(UG24-04)

Client Sample ID: MW374UG4-24 Project: FRNP00507 Sample ID: 676265011 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
The following Analyt	ical Methods v	were performed:							
Method	Description	1				Analys	st Comments		
1	SW846 7470A	A							
2	SW846 3005A	A/6020B							
3	SW846 3005A	A/6020B							
4	SW846 3005A	A/6020B							
5	SW846 3005A	A/6020B							

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

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Certificate of Analysis

Report Date: October 31, 2024

FRNP00507

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Quarterly(UG24-04)

Client Sample ID: MW374UG4-24

Sample ID: 6762650

Matrix: WG

Collect Date: 17-JUL-24 09:34
Receive Date: 19-JUL-24
Collector: Client

676265012 Client ID: FRNP005

Project:

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Anal	yst Date	Time	Batch	Method
Metals Analysis-ICl	P-MS											
6020, Dissolved Me	etals (3 Elements)	"As Received"										
Uranium		0.000505	0.0000670	0.000200	mg/L	1.00	1	PRB	07/31/24	1754	2643653	1
Barium		0.136	0.000670	0.00400	mg/L	1.00	1	PRB	07/30/24	2303	2643653	2
Chromium	U	0.0100	0.00300	0.0100	mg/L	1.00	1					
The following Prep	Methods were pe	rformed:										
Method	Description	l		Analyst	Date	,	Time	e P	rep Batch			
EPA 160	Laboratory Fil	ltration		JP2	07/19/24		1435	20	643642			
SW846 3005A	ICP-MS 3005	A PREP		BB2	07/23/24		1445	20	643652			

The following Analytical Methods were performed:

 Method
 Description
 Analyst Comments

 1
 SW846 3005A/6020B

2 SW846 3005A/6020B

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit



APPENDIX D STATISTICAL ANALYSES AND QUALIFICATION STATEMENT



Facility: U.S. DOE—Paducah Gaseous Diffusion Plant Permit Number: SW07300014, SW07300015, SW07300045 Finds/Unit: <u>KY8-980-008-982/1</u>

Lab ID: None

GROUNDWATER STATISTICAL COMMENTS

Introduction

The statistical analyses conducted on the third quarter 2024 groundwater data collected from the C-746-S&T Landfills monitoring wells (MWs) were performed in accordance with Permit GSTR0003, Standard Requirement 3, using the U.S. Environmental Protection Agency (EPA) guidance document, EPA Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Interim Final Guidance (1989).

The statistical evaluation was conducted separately for the three groundwater systems: the Upper Continental Recharge System (UCRS), the Upper Regional Gravel Aquifer (URGA), and the Lower Regional Gravel Aquifer (LRGA). For each groundwater system, data from wells considered to represent background conditions were compared with test wells (downgradient or sidegradient wells) (Exhibit D.1). The third quarter 2024 data used to conduct the statistical analyses were collected in July 2024. The statistical analyses for this report first used data from the initial eight quarters that had been sampled for each parameter to develop the historical background value, beginning with the first two baseline sampling events in 2002, when available. Then a second set of statistical analyses, using the last eight quarters, was run on analytes that had at least one compliance well that exceeded the historical background. The sampling dates associated with both the historical and the current background data are listed next to the result in the statistical analysis sheets of this appendix.

Statistical Analysis Process

Constituents of concern that have Kentucky maximum contaminant levels (MCLs) and results that do not exceed their respective MCL are not included in the statistical evaluation. Parameters that have MCLs can be found in 401 KAR 47:030 § 6. For parameters with no established MCL and for those parameters that exceed their MCLs, the most recent results are compared to historical background concentrations, as follows: the data are divided into censored and uncensored observations. The one-sided tolerance interval statistical test is conducted only on parameters that have at least one uncensored (detected) observation. The current result is compared to the results of the one-sided tolerance interval statistical test to determine if the current data exceed the historical background concentration calculated using the first eight quarters of data. The tolerance interval statistical analysis is conducted separately for each parameter in each well (no pooling of downgradient data).

For the statistical analysis of pH, a two-sided tolerance interval statistical test is conducted for pH. The test well results are compared to both an upper and lower tolerance limit (TL) to determine if statistically significant deviations in concentrations exist with respect to upgradient (background) well data from the first eight quarters.

Statistical analyses are performed on the first eight quarters of historical background data, not on the data for the current quarter. Once a statistical result is obtained using the background data, the result for the current quarter is compared to that value. If the value is exceeded, the well is considered to have an exceedance of the statistically derived historical background concentration.

Exhibit D.1. Station Identification for Monitoring Wells Analyzed

Station	Туре	Groundwater Unit
MW220	BG	URGA
MW221	SG	URGA
MW222	SG	URGA
MW223	SG	URGA
MW224	SG	URGA
MW369	TW	URGA
MW370	TW	LRGA
MW372	TW	URGA
MW373	TW	LRGA
MW384	SG	URGA
MW385	SG	LRGA
MW386a	SG	UCRS
MW387	TW	URGA
MW388	TW	LRGA
MW389 ^{a,b}	TW	UCRS
MW390 ^a	TW	UCRS
MW391	TW	URGA
MW392	TW	LRGA
MW393a	TW	UCRS
MW394	BG	URGA
MW395	BG	LRGA
MW396a	BG	UCRS
MW397	BG	LRGA

^a The gradients in UCRS wells are downward. The UCRS wells identified as up-, side-, or downgradient are those wells located in the same general direction as the Regional Gravel Aquifer wells considered to be up-, side-, or downgradient.

BG: upgradient or background wells

TW: compliance or test wells

SG: sidegradient wells

For those parameters that are determined to exceed the historical background concentration, a second one-sided tolerance interval statistical test in the case of pH, is conducted. The second one-sided tolerance interval statistical test is conducted to determine whether the current concentration in downgradient wells exceeds the current background, as determined by a comparison against the statistically derived upper TL using the most recent eight quarters of data for the relevant background wells. The tolerance interval statistical analysis is conducted separately for each parameter in each well (no pooling of downgradient data).

For the statistical analysis of pH, a two-sided tolerance interval statistical test is conducted, if required. The test well pH results are compared to both an upper and lower TL to determine if the current pH is different from the current background level to a statistically significant level. Statistical analyses are performed on the last eight quarters of background data, not on the data for the current quarter. Once a statistical result is obtained using the background data, the result for the current quarter is compared to that value. If the value is exceeded (or is below the LTL for pH), the well has a statistically significant difference in concentration compared to the current background concentration.

^b Well was dry this quarter and a groundwater sample could not be collected.

A stepwise list of the one-sided tolerance interval statistical procedure applied to the data is summarized below.¹

- 1. The TL is calculated for the background data (first using the first eight quarters, then using the last eight quarters).
 - For each parameter, the background data are used to establish a baseline. On this data set, the mean (X) and the standard deviation (S) are computed.
 - The data set is checked for normality using coefficient of variation (CV). If $CV \le 1.0$, then the data are assumed to be normally distributed. Data sets with CV > 1.0 are assumed to be log-normally distributed; for data sets with CV > 1.0, the data are log-transformed and analyzed.
 - The factor (K) for one-sided upper TL with 95% minimum coverage is determined (Table 5, Appendix B; EPA Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Interim Final Guidance, 1989) based on the number of background data points.
 - The one-sided upper TL is calculated using the following equation:

$$TL = X + (K \times S)$$

2. Each observation from downgradient wells is compared to the calculated one-sided upper TL in Step 1. If an observation value exceeds the TL (or is below the LTL for pH), then there is statistically significant evidence that the well concentration exceeds the historical background.

Type of Data Used

Exhibit D.1 presents the background wells (identified as "BG"), the compliance or test wells (identified as "TW"), and the sidegradient wells (identified as "SG") for the C-746-S&T Residential and Inert Landfills. Exhibit D.2 presents the parameters from the available data set for which a statistical test was performed using the one-sided tolerance interval.

Exhibits D.3, D.4, and D.5 list the number of analyses (observations), nondetects (censored observations), and detects (uncensored observations) by parameter in the UCRS, the URGA, and the LRGA, respectively. Those parameters displayed with bold-face type indicate the one-sided tolerance interval statistical test was performed. The data presented in Exhibits D.3, D.4, and D.5 were collected during the current quarter, third quarter 2024. The observations are representative of the current quarter data. Historical background data are presented in Attachment D1. The sampling dates associated with background data are listed next to the result in Attachment D1. When field duplicate data are available, the higher of the two readings is retained for further evaluation. When a data point has been rejected following data validation or data assessment, this result is not used, and the next available data point is used for the background or current quarter data. A result has been considered a nondetect if it has a "U" validation code.

_

¹ For pH, two-sided TLs (upper and lower) were calculated with an adjusted K factor using the following equations. upper $TL = X + (K \times S)$

lower $TL = X - (K \times S)$

Exhibit D.2. List of Parameters Tested Using the One-Sided Upper Tolerance Level Test with Historical Background

Pa	ar	aı	ne	te	rs
----	----	----	----	----	----

Acetone

Aluminum

Boron

Bromide Calcium

Chemical Oxygen Demand (COD)

Chloride

cis-1,2-Dichloroethene

Cobalt

Conductivity

Copper

Dissolved Oxygen

Dissolved Solids

Iron

Magnesium

Manganese

Methylene Chloride

Molybdenum

Nickel

Oxidation-Reduction Potential¹

 pH^2

Potassium

Radium-226

Sodium

Sulfate

Technetium-99

Total Organic Carbon (TOC) Total Organic Halides (TOX)

Trichloroethene

Vanadium

Zinc

¹Oxidation-Reduction Potential calibrated as Eh.

² For pH, the test well results were compared to both an upper and lower TL to determine if the current result differs to a statistically significant degree from the historical background values.

Exhibit D.3. Summary of Censored and Uncensored Data—UCRS

Parameters	Observations	Censored Observation	Uncensored Observation	Statistical Analysis?
1,1,1,2-Tetrachloroethane	4	4	0	No
1,1,2,2-Tetrachloroethane	4	4	0	No
1,1,2-Trichloroethane	4	4	0	No
1,1-Dichloroethane	4	4	0	No
1,2,3-Trichloropropane	4	4	0	No
1,2-Dibromo-3-chloropropane	4	4	0	No
1,2-Dibromoethane	4	4	0	No
1,2-Dichlorobenzene	4	4	0	No
1,2-Dichloropropane	4	4	0	No
2-Butanone	4	4	0	No
2-Hexanone	4	4	0	No
4-Methyl-2-pentanone	4	4	0	No
Acetone	4	2	2	Yes
Acrolein	4	4	0	No
Acrylonitrile	4	4	0	No
Aluminum	4	2	2	Yes
Antimony	4	4	0	No
Beryllium	4	4	0	No
Boron	4	0	4	Yes
Bromide	4	1	3	Yes
Bromochloromethane	4	4	0	No
Bromodichloromethane	4	4	0	No
Bromoform	4	4	0	No
Bromomethane	4	4	0	No
Calcium	4	0	4	Yes
Carbon disulfide	4	4	0	No
Chemical Oxygen Demand (COD)	4	0	4	Yes
Chloride	4	2	2	Yes
Chlorobenzene	4	4	0	No
Chloroethane	4	4	0	No
Chloroform	4	4	0	No
Chloromethane	4	4	0	No
cis-1,2-Dichloroethene	4	4	0	No
cis-1,3-Dichloropropene	4	4	0	No
Cobalt	4	3	1	Yes
Conductivity	4	0	4	Yes
Copper	4	0	4	Yes
Cyanide	4	4	0	No
Dibromochloromethane	4	4	0	No
Dibromomethane	4	4	0	No
Dimethylbenzene, Total	4	4	0	No
Dissolved Oxygen	4	0	4	Yes
Dissolved Solids	4	0	4	Yes
Ethylbenzene	4	4	0	No
Iodide	4	4	0	No

Exhibit D.3. Summary of Censored and Uncensored Data—UCRS (Continued)

Parameters	Observations	Censored Observation	Uncensored Observation	Statistical Analysis?
Iodomethane	4	4	0	No
Iron	4	0	4	Yes
Magnesium	4	0	4	Yes
Manganese	4	0	4	Yes
Methylene chloride	4	4	0	No
Molybdenum	4	0	4	Yes
Nickel	4	2	2	Yes
Oxidation-Reduction Potential	4	0	4	Yes
pН	4	0	4	Yes
Potassium	4	0	4	Yes
Radium-226	4	2	2	Yes
Rhodium	4	4	0	No
Sodium	4	0	4	Yes
Styrene	4	4	0	No
Sulfate	4	0	4	Yes
Tantalum	4	4	0	No
Technetium-99	4	3	1	Yes
Tetrachloroethene	4	4	0	No
Thallium	4	4	0	No
Thorium-230	4	4	0	No
Toluene	4	4	0	No
Total Organic Carbon (TOC)	4	0	4	Yes
Total Organic Halides (TOX)	4	0	4	Yes
trans-1,2-Dichloroethene	4	4	0	No
trans-1,3-Dichloropropene	4	4	0	No
trans-1,4-Dichloro-2-Butene	4	4	0	No
Trichlorofluoromethane	4	4	0	No
Vanadium	4	4	0	No
Vinyl Acetate	4	4	0	No
Zinc	4	3	1	Yes

Bold denotes parameters with at least one uncensored observation.

Exhibit D.4. Summary of Censored and Uncensored Data—URGA

Parameters	Observations	Censored Observation	Uncensored Observation	Statistical Analysis?
1,1,1,2-Tetrachloroethane	11	11	0	No
1,1,2,2-Tetrachloroethane	11	11	0	No
1,1,2-Trichloroethane	11	11	0	No
1,1-Dichloroethane	11	11	0	No
1,2,3-Trichloropropane	11	11	0	No
1,2-Dibromo-3-chloropropane	11	11	0	No
1,2-Dibromoethane	11	11	0	No
1,2-Dichlorobenzene	11	11	0	No
1,2-Dichloropropane	11	11	0	No
2-Butanone	11	11	0	No
2-Hexanone	11	11	0	No
4-Methyl-2-pentanone	11	11	0	No
Acetone	11	10	1	Yes
Acrolein	11	11	0	No
Acrylonitrile	11	11	0	No
Aluminum	11	7	4	Yes
Antimony	11	11	0	No
Beryllium	11	11	0	No
Boron	11	0	11	Yes
Bromide	11	0	11	Yes
Bromochloromethane	11	11	0	No
Bromodichloromethane	11	11	0	No
Bromoform	11	11	0	No
Bromomethane	11	11	0	No
Calcium	11	0	11	Yes
Carbon disulfide	11	11	0	No
Chemical Oxygen Demand (COD)	11	5	6	Yes
Chloride	11	2	9	Yes
Chlorobenzene	11	11	0	No
Chloroethane	11	11	0	No
Chloroform	11	11	0	No
Chloromethane	11	11	0	No
cis-1,2-Dichloroethene	11	11	0	No
cis-1,3-Dichloropropene	11	11	0	No
Cobalt	11	5	6	Yes
Conductivity	11	0	11	Yes
Copper	11	0	11	Yes
Cyanide	11	11	0	No
Dibromochloromethane	11	11	0	No
Dibromomethane	11	11	0	No
Dimethylbenzene, Total	11	11	0	No
Dissolved Oxygen	11	0	11	Yes
Dissolved Oxygen Dissolved Solids	11	0	11	Yes
Ethylbenzene	11	11	0	No
Iodide	11	11	0	No
Tourue	11	11	U	110

Exhibit D.4. Summary of Censored and Uncensored Data—URGA (Continued)

Parameters	Observations	Censored Observation	Uncensored Observation	Statistical Analysis?
Iodomethane	11	11	0	No
Iron	11	2	9	Yes
Magnesium	11	0	11	Yes
Manganese	11	0	11	Yes
Methylene chloride	11	10	1	Yes
Molybdenum	11	5	6	Yes
Nickel	11	1	10	Yes
Oxidation-Reduction Potential	11	0	11	Yes
pН	11	0	11	Yes
Potassium	11	0	11	Yes
Radium-226	11	9	2	Yes
Rhodium	11	11	0	No
Sodium	11	0	11	Yes
Styrene	11	11	0	No
Sulfate	11	0	11	Yes
Tantalum	11	11	0	No
Technetium-99	11	8	3	Yes
Tetrachloroethene	11	11	0	No
Thallium	11	11	0	No
Thorium-230	11	11	0	No
Toluene	11	11	0	No
Total Organic Carbon (TOC)	11	0	11	Yes
Total Organic Halides (TOX)	11	0	11	Yes
trans-1,2-Dichloroethene	11	11	0	No
trans-1,3-Dichloropropene	11	11	0	No
trans-1,4-Dichloro-2-Butene	11	11	0	No
Trichlorofluoromethane	11	11	0	No
Vanadium	11	8	3	Yes
Vinyl Acetate	11	11	0	No
Zinc	11	3	8	Yes

Bold denotes parameters with at least one uncensored observation.

Exhibit D.5. Summary of Censored and Uncensored Data—LRGA

1.1,1.2-Tetrachloroethane	Parameters	Observations	Censored Observation	Uncensored Observation	Statistical Analysis?
1,1,2-Trichloroethane	1,1,1,2-Tetrachloroethane	7	7	0	No
1.1-Dichloroethane	1,1,2,2-Tetrachloroethane	7	7	0	No
1,2,3-Trichloropropane	1,1,2-Trichloroethane	7	7	0	No
1,2-Dibromo-3-chloropropane	1,1-Dichloroethane	7	7	0	No
1,2-Dibromoethane	1,2,3-Trichloropropane	7	7	0	No
1,2-Dichlorobenzene	1,2-Dibromo-3-chloropropane	7	7	0	No
1,2-Dichloropropane	1,2-Dibromoethane	7	7	0	No
2-Butanone	1,2-Dichlorobenzene	7	7	0	No
2-Butanone 7 7 0 No 2-Hexanone 7 7 0 No 4-Methyl-2-pentanone 7 7 0 No Acetone 7 7 0 No Acrolein 7 7 0 No Acrolein 7 7 0 No Acrolinimum 7 7 0 No Autimony 7 7 0 No Beryllium 7 7 0 No Beryllium 7 7 0 No Bromofon 7 0 7 Yes Bromochloromethane 7 0 7 Yes Bromochloromethane 7 7 0 No Bromoform 7 7 0 No Bromoform 7 7 0 No Bromoform 7 7 0 No Calcium 7	1,2-Dichloropropane	7	7	0	No
4-Methyl-2-pentanone		7	7	0	No
Acetone 7 7 0 No Acrolein 7 7 0 No Acrylonitrile 7 7 0 No Aluminum 7 1 6 Yes Antimony 7 7 0 No Beryllium 7 7 0 No Bromo 7 0 7 Yes Bromothloromethane 7 0 7 Yes Bromochloromethane 7 7 0 No Bromoform 7 7 0 No Bromomethane 7 7 0 No Bromomethane 7 7 0 No Calcium 7 7 0 No Carbon disulfide 7 7 0 No Chioride 7 2 5 Yes Chlorode Daygen Demand (COD) 7 6 1 Yes Chlorode	2-Hexanone	7	7	0	No
Acetone 7 7 0 No Acrolein 7 7 0 No Acrylonitrile 7 7 0 No Aluminum 7 1 6 Yes Antimony 7 7 0 No Beryllium 7 7 0 No Bromo 7 0 7 Yes Bromothloromethane 7 0 7 Yes Bromochloromethane 7 7 0 No Bromoform 7 7 0 No Bromomethane 7 7 0 No Bromomethane 7 7 0 No Calcium 7 7 0 No Carbon disulfide 7 7 0 No Chioride 7 2 5 Yes Chlorode Daygen Demand (COD) 7 6 1 Yes Chlorode	4-Methyl-2-pentanone	7	7	0	No
Actrylonitrile		7	7	0	No
Aluminum 7 1 6 Yes Antimony 7 7 0 No Beryllium 7 7 0 No Boron 7 0 7 Yes Bromochloromethane 7 0 7 Yes Bromochloromethane 7 7 0 No Bromoform 7 7 0 No Bromomethane 7 7 0 No Bromomethane 7 7 0 No Calcium 7 7 0 No Carbon disulfide 7 7 0 No Carbon disulfide 7 7 0 No Chonice 7 7 0 No Cholioride 7 2 5 Yes Chlorodenae 7 7 0 No Chloroform 7 7 0 No Chlorodenhae	Acrolein	7	7	0	No
Aluminum 7 1 6 Yes Antimony 7 7 0 No Beryllium 7 7 0 No Boron 7 0 7 Yes Bromochloromethane 7 0 7 Yes Bromochloromethane 7 7 0 No Bromoform 7 7 0 No Bromomethane 7 7 0 No Bromomethane 7 7 0 No Calcium 7 7 0 No Carbon disulfide 7 7 0 No Carbon disulfide 7 7 0 No Chonice 7 7 0 No Cholioride 7 2 5 Yes Chlorodenae 7 7 0 No Chloroform 7 7 0 No Chlorodenhae					
Antimony 7 7 0 No Beryllium 7 7 0 No Boron 7 0 7 Yes Bromide 7 0 7 Yes Bromodichloromethane 7 7 0 No Calcium 7 7 0 No No Carbon disulfide 7 7 0 No No Ches 1 Yes Chloride 7 7 0 No No No No Chlorobenzene 7 7 0 No Chlorobenzene 7 7 0 N	·				
Beryllium					
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Bromochloromethane 7 7 0 No Bromodichloromethane 7 7 0 No Bromoform 7 7 0 No Bromomethane 7 7 0 No Calcium 7 0 7 Yes Carbon disulfide 7 7 0 No Chemical Oxygen Demand (COD) 7 6 1 Yes Chloride 7 7 0 No Chlorobenzene 7 7 0 No Chloroethane 7 7 0 No Chloroform 7 7 0 No Chloromethane 7 7 0 No Chloromethane 7 7 0 No Cis-1,2-Dichloroethene 7 7 0 No Cobalt 7 4 3 Yes Conductivity 7 0 7 Yes <td></td> <td></td> <td></td> <td></td> <td></td>					
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Iodide 7 7 0 No Iodomethane 7 7 0 No Iron 7 0 7 Yes					
Iodomethane 7 7 0 No Iron 7 0 7 Yes	-				
Iron 7 0 7 Yes					
Magnasium 7 Nac 7 Vac	Magnesium	7	0	7	Yes

Exhibit D.5. Summary of Censored and Uncensored Data—LRGA (Continued)

Parameters	Observations	Censored Observation	Uncensored Observation	Statistical Analysis?
Manganese	7	0	7	Yes
Methylene chloride	7	6	1	Yes
Molybdenum	7	5	2	Yes
Nickel	7	1	6	Yes
Oxidation-Reduction Potential	7	0	7	Yes
рН	7	0	7	Yes
Potassium	7	0	7	Yes
Radium-226	7	5	2	Yes
Rhodium	7	7	0	No
Sodium	7	0	7	Yes
Styrene	7	7	0	No
Sulfate	7	0	7	Yes
Tantalum	7	7	0	No
Technetium-99	7	6	1	Yes
Tetrachloroethene	7	7	0	No
Thallium	7	7	0	No
Thorium-230	7	7	0	No
Toluene	7	7	0	No
Total Organic Carbon (TOC)	7	0	7	Yes
Total Organic Halides (TOX)	7	0	7	Yes
trans-1,2-Dichloroethene	7	7	0	No
trans-1,3-Dichloropropene	7	7	0	No
trans-1,4-Dichloro-2-Butene	7	7	0	No
Trichloroethene	7	3	4	Yes
Trichlorofluoromethane	7	7	0	No
Vanadium	7	7	0	No
Vinyl Acetate	7	7	0	No
Zinc	7	4	3	Yes

Bold denotes parameters with at least one uncensoredobservation.

Discussion of Results from Historical Background Comparison

For the UCRS, URGA, and LRGA, the concentrations of this quarter were compared to the results of the one-sided tolerance interval tests that were calculated using historical background and presented in Attachment D1. For the UCRS, URGA, and LRGA, the test was applied to 27, 29, and 29 parameters, respectively, including those listed in bold print in Exhibits D.3, D.4, and D.5. A summary of exceedances when compared to statistically derived historical background by well number is shown in Exhibit D.6.

UCRS

This quarter's results identified exceedances of historical background upper tolerance limit (UTL) for oxidation-reduction potential, radium-226, and technetium-99.

URGA

This quarter's results identified exceedances of historical background UTL for calcium, COD, conductivity, dissolved solids, magnesium, oxidation-reduction potential, radium-226, sodium, sulfate, and technetium-99.

LRGA

This quarter's results identified exceedances of historical background UTL for calcium, conductivity, dissolved solids, magnesium, oxidation-reduction potential, radium-226, sodium, sulfate, and technetium-99.

Statistical Summary

Summaries of the results of the statistical tests conducted on data obtained from wells in the UCRS, the URGA, and in the LRGA are presented in Exhibit D.7, Exhibit D.8, and Exhibit D.9, respectively.

Exhibit D.6. Summary of Exceedances of Statistically Derived Historical Background Concentrations

UCRS	URGA	LRGA
MW386: Oxidation-reduction potential*	MW220: Sulfate	MW370: Oxidation-reduction potential* and sulfate
MW390: Oxidation-reduction potential,* radium-226, and technetium-99	MW221: Oxidation-reduction potential* and radium-226	MW373: Calcium, conductivity, dissolved solids, magnesium, oxidation-reduction potential,*
MW393: Oxidation-reduction potential*	MW223: Oxidation-reduction potential*	sodium, and sulfate
	MW224: Sodium and sulfate	MANAGE O 1111 1 1 1
MW396: Oxidation-reduction potential* and radium-226	MW369: Oxidation-reduction potential* and technetium-99	MW385: Oxidation-reduction potential,* sulfate, and technetium-99
	MW372: Calcium, conductivity, dissolved solids, magnesium, oxidation-reduction potential,* and sulfate	MW388: Oxidation-reduction potential,* radium-226, and sulfate
	MW384: Oxidation-reduction potential,* radium-226, sulfate, and technetium-99	MW392: Oxidation-reduction potential*
	MW297, COD magnesium	MW395: Oxidation-reduction
	MW387: COD, magnesium, oxidation-reduction potential,* sulfate, and technetium-99	potential*
	MW394: Oxidation-reduction potential*	MW397: Oxidation-reduction potential* and radium-226

^{*}Oxidation-Reduction Potential calibrated as Eh.

Exhibit D.7. Test Summaries for Qualified Parameters for Historical Background—UCRS

Parameter	Performed Test	CV Normality Test ^a	Results of Tolerance Interval Test Conducted
Acetone	Tolerance Interval	1.73	No exceedance of statistically derived historical background concentration.
Aluminum	Tolerance Interval	0.57	No exceedance of statistically derived historical background concentration.
Boron	Tolerance Interval	1.28	No exceedance of statistically derived historical background concentration.
Bromide	Tolerance Interval	0.24	No exceedance of statistically derived historical background concentration.
Calcium	Tolerance Interval	0.20	No exceedance of statistically derived historical background concentration.
Chloride	Tolerance Interval	0.05	No exceedance of statistically derived historical background concentration.
Cobalt	Tolerance Interval	1.34	No exceedance of statistically derived historical background concentration.
COD	Tolerance Interval	0.02	No exceedance of statistically derived historical background concentration.
Conductivity	Tolerance Interval	0.12	No exceedance of statistically derived historical background concentration.
Copper	Tolerance Interval	0.48	No exceedance of statistically derived historical background concentration.
Dissolved Oxygen	Tolerance Interval	1.20	No exceedance of statistically derived historical background concentration.
Dissolved Solids	Tolerance Interval	0.19	No exceedance of statistically derived historical background concentration.
Iron	Tolerance Interval	0.48	No exceedance of statistically derived historical background concentration.
Magnesium	Tolerance Interval	0.20	No exceedance of statistically derived historical background concentration.
Manganese	Tolerance Interval	0.46	No exceedance of statistically derived historical background concentration.
Molybdenum	Tolerance Interval	1.51	No exceedance of statistically derived historical background concentration.
Nickel	Tolerance Interval	1.27	No exceedance of statistically derived historical background concentration.
Oxidation-Reduction Potential ^b	Tolerance Interval	4.77	Current results exceed statistically derived historical background concentration in MW386, MW390, MW393, and MW396.
pН	Tolerance Interval	0.05	No exceedance of statistically derived historical background concentration.
Potassium	Tolerance Interval	0.28	No exceedance of statistically derived historical background concentration.
Radium-226	Tolerance Interval	1.78	Current results exceed statistically derived historical background concentration in MW390 and MW396.
Sodium	Tolerance Interval	0.30	No exceedance of statistically derived historical background concentration.

Exhibit D.7. Test Summaries for Qualified Parameters for Historical Background—UCRS (Continued)

Parameter	Performed Test	CV Normality Test ^a	Results of Tolerance Interval Test Conducted
Sulfate	Tolerance Interval	0.40	No exceedance of statistically derived historical background concentration.
Technetium-99	Tolerance Interval	0.86	Current results exceed statistically derived historical background concentration in MW390.
TOC	Tolerance Interval	0.47	No exceedance of statistically derived historical background concentration.
тох	Tolerance Interval	0.38	No exceedance of statistically derived historical background concentration.
Zinc	Tolerance Interval	0.79	No exceedance of statistically derived historical background concentration.

CV: coefficient of variation

a If CV > 1.0, used log-transformed data.

b Oxidation-Reduction Potential calibrated as Eh.

Exhibit D.8. Test Summaries for Qualified Parameters for Historical Background—URGA

Parameter	Performed Test	CV Normality Test ^a	Results of Tolerance Interval Test Conducted
Acetone	Tolerance Interval	0.10	No exceedance of statistically derived historical background concentration.
Aluminum	Tolerance Interval	0.28	No exceedance of statistically derived historical background concentration.
Boron	Tolerance Interval	1.45	No exceedance of statistically derived historical background concentration.
Bromide	Tolerance Interval	0.00	No exceedance of statistically derived historical background concentration.
Calcium	Tolerance Interval	0.17	Current results exceed statistically derived historical background concentrations in MW372.
Chloride	Tolerance Interval	0.23	No exceedance of statistically derived historical background concentration.
Cobalt	Tolerance Interval	2.44	No exceedance of statistically derived historical background concentration.
COD	Tolerance Interval	0.00	Current results exceed statistically derived historical background concentration in MW387.
Conductivity	Tolerance Interval	0.28	Current results exceed statistically derived historical background concentration in MW372.
Copper	Tolerance Interval	0.43	No exceedance of statistically derived historical background concentration.
Dissolved Oxygen	Tolerance Interval	0.50	No exceedance of statistically derived historical background concentration.
Dissolved Solids	Tolerance Interval	0.12	Current results exceed statistically derived historical background concentration in MW372.
Iron	Tolerance Interval	1.17	No exceedance of statistically derived historical background concentration.
Magnesium	Tolerance Interval	0.16	Current results exceed statistically derived historical background concentration in MW372 and MW387.
Manganese	Tolerance Interval	2.16	No exceedance of statistically derived historical background concentration.
Methylene Chloride	Tolerance Interval	0.16	No exceedance of statistically derived historical background concentration.
Molybdenum	Tolerance Interval	1.26	No exceedance of statistically derived historical background concentration.
Nickel	Tolerance Interval	1.79	No exceedance of statistically derived historical background concentration.
Oxidation-Reduction Potential ^b	Tolerance Interval	0.48	Current results exceed statistically derived historical background concentration in MW221, MW223, MW369, MW372, MW384, MW387, and MW394.
pН	Tolerance Interval	0.05	No exceedance of statistically derived historical background concentration.
Potassium	Tolerance Interval	1.40	No exceedance of statistically derived historical background concentration.
Radium-226	Tolerance Interval	10.6	Current results exceed statistically derived historical background concentration in MW221 and MW384.
Sodium	Tolerance Interval	0.24	Current results exceed statistically derived historical background concentration in MW224.

Exhibit D.8. Test Summaries for Qualified Parameters for Historical Background—URGA (Continued)

Parameter	Performed Test	CV Normality Test ^a	Results of Tolerance Interval Test Conducted
Sulfate	Tolerance Interval	0.25	Current results exceed statistically derived historical background concentration in MW220, MW224, MW372, MW384, and MW387.
Technetium-99	Tolerance Interval	0.99	Current results exceed statistically derived historical background concentration in MW369, MW384, and MW387.
TOC	Tolerance Interval	0.49	No exceedance of statistically derived historical background concentration.
TOX	Tolerance Interval	2.57	No exceedance of statistically derived historical background concentration.
Vanadium	Tolerance Interval	0.08	No exceedance of statistically derived historical background concentration.
Zinc	Tolerance Interval	0.72	No exceedance of statistically derived historical background concentration.

CV: coefficient of variation

^a If CV > 1.0, used log-transformed data. ^b Oxidation-Reduction Potential calibrated as Eh.

^cTolerance interval was calculated based on an MCL exceedance.

Exhibit D.9. Test Summaries for Qualified Parameters for Historical Background—LRGA

Parameter	Performed Test	CV Normality Test ^a	Results of Tolerance Interval Test Conducted
Aluminum	Tolerance Interval	0.86	No exceedance of statistically derived historical background concentration.
Boron	Tolerance Interval	1.24	No exceedance of statistically derived historical background concentration.
Bromide	Tolerance Interval	0.00	No exceedance of statistically derived historical background concentration.
Calcium	Tolerance Interval	0.50	Current results exceed statistically derived historical background concentration in MW373.
Chloride	Tolerance Interval	0.22	No exceedance of statistically derived historical background concentration.
cis-1,2-Dichloroethene	Tolerance Interval	0.00	No exceedance of statistically derived historical background concentration.
Cobalt	Tolerance Interval	1.51	No exceedance of statistically derived historical background concentration.
COD	Tolerance Interval	0.04	No exceedance of statistically derived historical background concentration.
Conductivity	Tolerance Interval	0.14	Current results exceed statistically derived historical background concentration in MW373.
Copper	Tolerance Interval	0.47	No exceedance of statistically derived historical background concentration.
Dissolved Oxygen	Tolerance Interval	0.52	No exceedance of statistically derived historical background concentration.
Dissolved Solids	Tolerance Interval	0.16	Current results exceed statistically derived historical background concentration in MW373.
Iron	Tolerance Interval	1.29	No exceedance of statistically derived historical background concentration.
Magnesium	Tolerance Interval	0.51	Current results exceed statistically derived historical background concentration in MW373.
Manganese	Tolerance Interval	1.49	No exceedance of statistically derived historical background concentration.
Methylene Chloride	Tolerance Interval	0.55	No exceedance of statistically derived historical background concentration.
Molybdenum	Tolerance Interval	1.45	No exceedance of statistically derived historical background concentration.
Nickel	Tolerance Interval	1.09	No exceedance of statistically derived historical background concentration.
Oxidation-Reduction Potential ^b	Tolerance Interval	0.33	Current results exceed statistically derived historical background concentration in MW370, MW373, MW385, MW388, MW392, MW395, and MW397.
рН	Tolerance Interval	0.04	No exceedance of statistically derived historical background concentration.
Potassium	Tolerance Interval	0.40	No exceedance of statistically derived historical background concentration.
Radium-226	Tolerance Interval	10.7	Current results exceed statistically derived historical background concentration in MW388 and MW397.

Exhibit D.9. Test Summaries for Qualified Parameters for Historical Background—LRGA (Continued)

Parameter	Performed Test	CV Normality Test ^a	Results of Tolerance Interval Test Conducted
Sodium	Tolerance Interval	0.47	Current results exceed statistically derived historical background concentration in MW373.
Sulfate	Tolerance Interval	0.20	Current results exceed statistically derived historical background concentration in MW370, MW373, MW385, and MW388.
Technetium-99	Tolerance Interval	0.80	Current results exceed statistically derived historical background concentration in MW385.
TOC	Tolerance Interval	0.55	No exceedance of statistically derived historical background concentration.
TOX	Tolerance Interval	0.59	No exceedance of statistically derived historical background concentration.
Trichloroethene ^c	Tolerance Interval	0.78	No exceedance of statistically derived historical background concentration.
Zinc	Tolerance Interval	0.76	No exceedance of statistically derived historical background concentration.

CV: coefficient of variation

a If CV > 1.0, used log-transformed data.

b Oxidation-Reduction Potential calibrated as Eh.

c Tolerance interval was calculated based on an MCL exceedance.

Discussion of Results from Current Background Comparison

For concentrations in wells in the UCRS, URGA, and LRGA that exceeded the TL test using historical background, the concentrations were compared to the one-sided TL calculated using the most recent eight quarters of data and are presented in Attachment D2. For the UCRS, URGA, and LRGA, the test was applied to 3, 10, and 9 parameters, respectively, because these parameter concentrations exceeded the historical background TL.

For downgradient wells only, a summary of instances where concentrations exceeded the TL calculated using current background data is shown in Exhibit D.10.

UCRS

Because gradients in the UCRS are downward (vertical), there are no hydrogeologically downgradient UCRS wells. It should be noted, however, that this quarter's results identified current background exceedances in downgradient UCRS well MW390 for oxidation-reduction potential and technetium-99.

URGA

This quarter's results identified current background exceedances in downgradient wells for calcium, conductivity, dissolved solids, magnesium, sulfate, and technetium-99.

LRGA

This quarter's results identified current background exceedances in downgradient wells for calcium, conductivity, dissolved solids, magnesium, radium-226, sodium, and sulfate.

Statistical Summary

Summaries of the statistical tests conducted on data obtained from wells in the UCRS, the URGA, and the LRGA are presented in Exhibit D.11, Exhibit D.12, and Exhibit D.13, respectively.

Exhibit D.10. Summary of Exceedances (Downgradient Wells) of the TL Calculated Using Current Background Concentrations

URGA	LRGA
MW369: Technetium-99	MW370: Sulfate
MW372: Calcium, conductivity, dissolved solids, magnesium, and sulfate	MW373: Calcium, conductivity, dissolved solids, magnesium, sodium, and sulfate
MW387: Magnesium, sulfate, and technetium-99	MW388: Radium-226 and sulfate

Exhibit D.11. Test Summaries for Qualified Parameters for Current Background—UCRS

Parameter	Performed Test	CV Normality Test ^a	Results of Tolerance Interval Test Conducted
Oxidation-Reduction Potential ^b	Tolerance Interval	0.20	MW390 exceeded the upper TL, which is evidence of elevated concentration with respect to current background data.
Radium-226	Tolerance Interval	0.77	MW396 exceeded the upper TL, which is evidence of elevated concentration with respect to current background data.
Technetium-99	Tolerance Interval	13.5	None of the test wells exceeded the upper TL, which is evidence that concentrations in these wells are not different from current background concentrations to a statistically significant level.

^a If CV > 1.0, used log-transformed data. ^b Oxidation-Reduction Potential calibrated as Eh.

Exhibit D.12. Test Summaries for Qualified Parameters for Current Background—URGA

Parameter	Performed Test	CV Normality Test ^a	Results of Tolerance Interval Test Conducted
Calcium	Tolerance Interval	0.13	MW372 exceeded the upper TL, which is evidence of elevated concentration with respect to current background data.
COD	Tolerance Interval	0.64	None of the test wells exceeded the upper TL, which is evidence that concentrations in these wells are not different from current background concentrations to a statistically significant level.
Conductivity	Tolerance Interval	0.10	MW372 exceeded the upper TL, which is evidence of elevated concentration with respect to current background data.
Dissolved Solids	Tolerance Interval	0.08	MW372 exceeded the upper TL, which is evidence of elevated concentration with respect to current background data.
Magnesium	Tolerance Interval	0.14	MW372 and MW387 exceeded the upper TL, which is evidence of elevated concentration with respect to current background data.
Oxidation-Reduction Potential ^b	Tolerance Interval	0.12	None of the test wells exceeded the upper TL, which is evidence that concentrations in these wells are not different from current background concentrations to a statistically significant level.
Radium-226	Tolerance Interval	0.74	MW221 and MW384 exceeded the upper TL, which is evidence of elevated concentration with respect to current background data.
Sodium	Tolerance Interval	0.14	MW224 exceeded the upper TL, which is evidence of elevated concentration with respect to current background data.
Sulfate	Tolerance Interval	0.20	MW372 and MW387 exceeded the upper TL, which is evidence of elevated concentration with respect to current background data.
Technetium-99	Tolerance Interval	0.55	MW369, MW384, and MW387 exceeded the upper TL, which is evidence of elevated concentration with respect to current background data.

CV: coefficient of variation

a If CV > 1.0, used log-transformed data.
b Oxidation-Reduction Potential calibrated as Eh.

Exhibit D.13. Test Summaries for Qualified Parameters for Current Background—LRGA

Parameter	Performed Test	CV Normality Test ^a	Results of Tolerance Interval Test Conducted
Calcium	Tolerance Interval	0.20	MW373 exceeded the upper TL, which is evidence of elevated concentration with respect to current background data.
Conductivity	Tolerance Interval	0.11	MW373 exceeded the upper TL, which is evidence of elevated concentration with respect to current background data.
Dissolved Solids	Tolerance Interval	0.13	MW373 exceeded the upper TL, which is evidence of elevated concentration with respect to current background data.
Magnesium	Tolerance Interval	0.20	MW373 exceeded the upper TL, which is evidence of elevated concentration with respect to current background data.
Oxidation-Reduction Potential ^b	Tolerance Interval	0.21	None of the test wells exceeded the upper TL, which is evidence that concentrations in these wells are not different from current background concentrations to a statistically significant level.
Radium-226	Tolerance Interval	0.67	MW388 and MW397 exceeded the upper TL, which is evidence of elevated concentration with respect to current background data.
Sodium	Tolerance Interval	0.06	MW373 exceeded the upper TL, which is evidence of elevated concentration with respect to current background data.
Sulfate	Tolerance Interval	0.03	MW370, MW373, MW385, and MW388 exceeded the upper TL, which is evidence of elevated concentration with respect to current background data.
Technetium-99	Tolerance Interval	0.66	MW385 exceeded the upper TL, which is evidence of elevated concentration with respect to current background data.

^a If CV > 1.0, used log-transformed data. ^b Oxidation-Reduction Potential calibrated as Eh.

ATTACHMENT D1

COMPARISON OF CURRENT DATA TO ONE-SIDED UPPER TOLERANCE INTERVAL TEST CALCULATED USING HISTORICAL BACKGROUND DATA



C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Acetone UNITS: ug/L UCRS

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X = 28.375 S = 49.188 CV(1) = 1.733

K factor**= 3.188

TL(1)= 1.85E+02 **LL(1)=**N/A

Statistics-Transformed Background Data

X= 2.712 **S**= 0.943 **CV(2)**= 0.348

K factor**= 3.188

TL(2)= 5.72E+00 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number:	MW396	
Date Collected	Result	LN(Result)
8/13/2002	1.50E+02	5.01E+00
9/30/2002	1.60E+01	2.77E+00
10/16/2002	1.00E+01	2.30E+00
1/13/2003	1.00E+01	2.30E+00
4/8/2003	1.00E+01	2.30E+00
7/16/2003	1.00E+01	2.30E+00
10/14/2003	1.10E+01	2.40E+00
4/12/2004	1.00E+01	2.30E+00

Dry/Partially Dry Wells

Well No. Gradient

MW389 Downgradient

Because CV(1) is greater than 1, the natural logarithm of background and test well results were calculated utilizing TL(2) for comparison.

Cumment	Ouguton	Doto
Current	Quarter	Data

Well No.	Gradient	Detected?	Result	Result >TL(1)? LN(Result)	LN(Result) >TL(2)
MW386	Sidegradient	No	5.00E+00) N/A	1.61E+00	N/A
MW390	Downgradien	t No	5.00E+00) N/A	1.61E+00	N/A
MW393	Downgradien	t Yes	2.39E+00) N/A	8.71E-01	NO
MW396	Upgradient	Yes	1.85E+00) N/A	6.15E-01	NO

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$

TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis **Historical Background Comparison** Aluminum UNITS: mg/L **UCRS**

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X = 0.320

S = 0.182

CV(1)=0.567

K factor=** 3.188

TL(1)= 9.00E-01

Statistics-Transformed Background Data

X = -1.259 S = 0.503

CV(2) = -0.400

K factor=** 3.188

TL(2)=3.45E-01 LL(2)=N/A

Historical Background Data from **Upgradient Wells with Transformed Result**

Well Number:	MW396	
Date Collected	Result	LN(Result)
8/13/2002	3.93E-01	-9.34E-01
9/16/2002	2.00E-01	-1.61E+00
10/16/2002	2.00E-01	-1.61E+00
1/13/2003	5.01E-01	-6.91E-01
4/8/2003	2.00E-01	-1.61E+00
7/16/2003	2.00E-01	-1.61E+00
10/14/2003	2.00E-01	-1.61E+00
1/14/2004	6.68E-01	-4.03E-01

Dry/Partially Dry Wells

Well No. Gradient

MW389 Downgradient

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current	Ouarter	Data
Cullent	Quarter	Data

Well No.	Gradient	Detected?	Result	Result >TL(1)? LN(Result)	LN(Result) >TL
MW386	Sidegradient	No	5.00E-02	N/A	-3.00E+00	N/A
MW390	Downgradien	t Yes	1.00E-01	NO	-2.30E+00	N/A
MW393	Downgradien	t Yes	2.84E-02	NO	-3.56E+00	N/A
MW396	Upgradient	No	5.00E-02	N/A	-3.00E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

CVCoefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5 S

Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009. D1-4

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Boron UNITS: mg/L UCRS

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X = 0.650

S= 0.833 CV

CV(1)=1.282

K factor=** 3.188

TL(1)= 3.31E+00 **LL(1)=**N/A

Statistics-Transformed Background Data

X = -1.034 S = 1.066

CV(2) = -1.031

K factor**= 3.188

TL(2)= 2.36E+00 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number:	MW396	
Date Collected	Result	LN(Result)
8/13/2002	2.00E+00	6.93E-01
9/16/2002	2.00E+00	6.93E-01
10/16/2002	2.00E-01	-1.61E+00
1/13/2003	2.00E-01	-1.61E+00
4/8/2003	2.00E-01	-1.61E+00
7/16/2003	2.00E-01	-1.61E+00
10/14/2003	2.00E-01	-1.61E+00
1/14/2004	2.00E-01	-1.61E+00

Dry/Partially Dry Wells

Well No. Gradient

MW389 Downgradient

Because CV(1) is greater than 1, the natural logarithm of background and test well results were calculated utilizing TL(2) for comparison.

Cumment	Ononton	Doto
Current	Quarter	Data

Well No.	Gradient	Detected?	Result	Result >TL(1))? LN(Result)	LN(Result) >TL(2)
MW386	Sidegradient	Yes	1.86E-02	N/A	-3.98E+00	NO
MW390	Downgradien	t Yes	2.21E-02	N/A	-3.81E+00	NO
MW393	Downgradien	t Yes	1.68E-02	N/A	-4.09E+00	NO
MW396	Upgradient	Yes	5.61E-03	N/A	-5.18E+00	NO

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5

TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis **Historical Background Comparison Bromide** UNITS: mg/L **UCRS**

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

X = 1.388S = 0.327CV(1)=0.236**K factor**=** 3.188 TL(1)= 2.43E+00 LL(1)=N/A**Statistics-Background Data Statistics-Transformed** S = 0.252X = 0.301**K factor**=** 3.188 CV(2) = 0.838TL(2)=1.10E+00 LL(2)=N/A

Background Data

Historical Background Data from **Upgradient Wells with Transformed Result**

Well Number:	MW396	
Date Collected	Result	LN(Result)
8/13/2002	1.50E+00	4.05E-01
9/16/2002	1.60E+00	4.70E-01
10/16/2002	1.60E+00	4.70E-01
1/13/2003	1.00E+00	0.00E+00
4/8/2003	1.00E+00	0.00E+00
7/16/2003	1.00E+00	0.00E+00
10/14/2003	1.70E+00	5.31E-01
1/14/2004	1.70E+00	5.31E-01

Dry/Partially Dry Wells

Well No. Gradient Downgradient MW389

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current	Ouarter	Data
Current	Quarter	Data

Well No.	Gradient	Detected?	Result	Result >TL(1)?	2 LN(Result)	LN(Result) >TL(2)
MW386	Sidegradient	Yes	1.09E-01	NO	-2.22E+00	N/A
MW390	Downgradien	t Yes	2.35E-01	NO	-1.45E+00	N/A
MW393	Downgradien	t No	2.00E-01	N/A	-1.61E+00	N/A
MW396	Upgradient	Yes	1.09E+00) NO	8.62E-02	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

CVCoefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5 S

Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009. D1-6

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Calcium UNITS: mg/L UCRS

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X = 41.825 S = 8.445

CV(1)=0.202

K factor=** 3.188 **T**

TL(1)= 6.87E+01 **LL(1)**=N/A

Statistics-Transformed Background Data

X = 3.711 S = 0.241

CV(2) = 0.065

K factor**= 3.188

TL(2)=4.48E+00 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number:	MW396	
Date Collected	Result	LN(Result)
8/13/2002	3.84E+01	3.65E+00
9/16/2002	4.29E+01	3.76E+00
10/16/2002	4.02E+01	3.69E+00
1/13/2003	4.67E+01	3.84E+00
4/8/2003	4.98E+01	3.91E+00
7/16/2003	4.33E+01	3.77E+00
10/14/2003	4.97E+01	3.91E+00
1/14/2004	2.36E+01	3.16E+00

Dry/Partially Dry Wells

Well No. Gradient

MW389 Downgradient

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current	Quarter	Data
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Well No.	Gradient	Detected?	Result	Result >TL(1)?	LN(Result)	LN(Result) >TL(
MW386	Sidegradient	Yes	2.03E+01	l NO	3.01E+00	N/A
MW390	Downgradien	t Yes	2.77E+01	l NO	3.32E+00	N/A
MW393	Downgradien	t Yes	1.58E+01	l NO	2.76E+00	N/A
MW396	Upgradient	Yes	2.98E+01	l NO	3.39E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$

TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis **Historical Background Comparison Chemical Oxygen Demand (COD)** UNITS: mg/L **UCRS**

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X = 35.375 S = 0.744

CV(1)=0.021

K factor=** 3.188

TL(1)=3.77E+01 LL(1)=N/A

Statistics-Transformed Background Data

X = 3.566S = 0.021 CV(2) = 0.006

K factor=** 3.188

TL(2)=3.63E+00 LL(2)=N/A

Historical Background Data from **Upgradient Wells with Transformed Result**

Well Number:	MW396	
Date Collected	Result	LN(Result)
8/13/2002	3.60E+01	3.58E+00
9/16/2002	3.50E+01	3.56E+00
10/16/2002	3.70E+01	3.61E+00
1/13/2003	3.50E+01	3.56E+00
4/8/2003	3.50E+01	3.56E+00
7/16/2003	3.50E+01	3.56E+00
10/14/2003	3.50E+01	3.56E+00
1/14/2004	3.50E+01	3.56E+00

Dry/Partially Dry Wells

Well No. Gradient

MW389 Downgradient

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current	Quarter	Data
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Well No.	Gradient	Detected?	Result	Result >TL(1)	? LN(Result)	LN(Result) >TL(2
MW386	Sidegradient	Yes	2.24E+01	NO	3.11E+00	N/A
MW390	Downgradien	t Yes	1.08E+01	NO	2.38E+00	N/A
MW393	Downgradien	t Yes	1.57E+01	NO	2.75E+00	N/A
MW396	Upgradient	Yes	1.80E+01	NO	2.89E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

CVCoefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5 S

Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009. D1-8

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Chloride UNITS: mg/L UCRS

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X = 101.725 S = 5.245

CV(1)=0.052

K factor**= 3.188

TL(1)=1.18E+02 LL(1)=N/A

Statistics-Transformed Background Data

X = 4.621 S = 0.053

CV(2)=0.011

K factor**= 3.188

TL(2)=4.79E+00 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number:	MW396	
Date Collected	Result	LN(Result)
8/13/2002	9.16E+01	4.52E+00
9/16/2002	9.83E+01	4.59E+00
10/16/2002	1.01E+02	4.62E+00
1/13/2003	1.08E+02	4.68E+00
4/8/2003	1.01E+02	4.61E+00
7/16/2003	1.03E+02	4.63E+00
10/14/2003	1.07E+02	4.67E+00
1/14/2004	1.04E+02	4.65E±00

Dry/Partially Dry Wells

Well No. Gradient

MW389 Downgradient

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Well No.	Gradient	Detected?	Result	Result >TL(1)? LN(Result)	LN(Result) >TL(2)
MW386	Sidegradient	No	9.94E+00) N/A	2.30E+00	N/A
MW390	Downgradien	t No	2.07E+01	N/A	3.03E+00	N/A
MW393	Downgradien	t Yes	9.43E+00) NO	2.24E+00	N/A
MW396	Upgradient	Yes	5.68E+01	NO	4.04E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5

TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Cobalt UNITS: mg/L UCRS

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X = 0.008

S= 0.011 **CV(1)**=1.340

K factor=** 3.188

TL(1)= 4.18E-02 **LL(1)=**N/A

Statistics-Transformed Background Data

X = -5.645 S = 1.339

CV(2) = -0.237

K factor=** 3.188

TL(2) = -1.38E + 00 LL(2) = N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number:	MW396	
Date Collected	Result	LN(Result)
8/13/2002	2.50E-02	-3.69E+00
9/16/2002	2.50E-02	-3.69E+00
10/16/2002	1.00E-03	-6.91E+00
1/13/2003	3.24E-03	-5.73E+00
4/8/2003	4.36E-03	-5.44E+00
7/16/2003	2.76E-03	-5.89E+00
10/14/2003	1.00E-03	-6.91E+00
1/14/2004	1.00E-03	-6.91E+00

Dry/Partially Dry Wells

Well No. Gradient

MW389 Downgradient

Because CV(1) is greater than 1, the natural logarithm of background and test well results were calculated utilizing TL(2) for comparison.

Cummont	Ouguton	Data
Current	Quarter	Data

Well No.	Gradient	Detected?	Result	Result >TL(1)	? LN(Result)	LN(Result) >TL(2)
MW386	Sidegradient	Yes	4.66E-03	N/A	-5.37E+00	NO
MW390	Downgradien	t No	1.00E-03	N/A	-6.91E+00	N/A
MW393	Downgradien	t No	1.00E-03	N/A	-6.91E+00	N/A
MW396	Upgradient	No	1.00E-03	N/A	-6.91E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5

TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis **Historical Background Comparison Conductivity** UNITS: umho/cm **UCRS**

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X = 922.500 S = 107.616 CV(1) = 0.117

K factor=** 3.188 TL(1)=1.27E+03 LL(1)=N/A

Statistics-Transformed Background Data

S = 0.111X = 6.822CV(2) = 0.016 K factor**= 3.188 TL(2)=7.17E+00 LL(2)=N/A

Historical Background Data from **Upgradient Wells with Transformed Result**

Well Number:	MW396	
Date Collected	Result	LN(Result)
8/13/2002	7.84E+02	6.66E+00
9/30/2002	8.71E+02	6.77E+00
10/16/2002	8.68E+02	6.77E+00
1/13/2003	9.12E+02	6.82E+00
4/8/2003	9.42E+02	6.85E+00
7/16/2003	9.10E+02	6.81E+00
10/14/2003	9.35E+02	6.84E+00
1/14/2004	1.16E±03	$7.05E \pm 00$

Dry/Partially Dry Wells

Well No. Gradient

Downgradient MW389

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current Quarter Data	Current	Quarter	Data
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Well No.	Gradient	Detected?	Result	Result >TL(1)? LN(Result)	LN(Result) >TL(2)
MW386	Sidegradient	Yes	5.86E+02	2 NO	6.37E+00	N/A
MW390	Downgradien	t Yes	6.00E+02	2 NO	6.40E+00	N/A
MW393	Downgradien	t Yes	4.60E+02	NO NO	6.13E+00	N/A
MW396	Upgradient	Yes	6.43E+02	NO NO	6.47E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

CVCoefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5 S

Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009. D1-11

C-746-S/T Third Quarter 2024 Statistical Analysis **Historical Background Comparison** UNITS: mg/L **UCRS** Copper

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X = 0.028

S = 0.014CV(1) = 0.481

K factor**= 3.188

TL(1)= 7.16E-02 **LL(1)=**N/A

Statistics-Transformed Background Data

X = -3.650 S = 0.414

CV(2) = -0.113

K factor=** 3.188

TL(2) = -2.33E+00 LL(2)=N/A

Historical Background Data from **Upgradient Wells with Transformed Result**

Well Number:	MW396	
Date Collected	Result	LN(Result)
8/13/2002	5.00E-02	-3.00E+00
9/16/2002	5.00E-02	-3.00E+00
10/16/2002	2.60E-02	-3.65E+00
1/13/2003	2.00E-02	-3.91E+00
4/8/2003	2.00E-02	-3.91E+00
7/16/2003	2.00E-02	-3.91E+00
10/14/2003	2.00E-02	-3.91E+00
1/14/2004	2.00E-02	-3.91E+00

Dry/Partially Dry Wells

Well No. Gradient

Downgradient MW389

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current	Quarter	Data
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Well No.	Gradient	Detected?	Result	Result >TL(1))? LN(Result)	LN(Result) >TL(2)
MW386	Sidegradient	Yes	1.52E-03	NO	-6.49E+00	N/A
MW390	Downgradien	t Yes	1.73E-03	NO	-6.36E+00	N/A
MW393	Downgradien	t Yes	7.26E-04	NO	-7.23E+00	N/A
MW396	Upgradient	Yes	8.65E-04	NO	-7.05E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

CVCoefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5 S

Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009. D1-12

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Dissolved Oxygen UNITS: mg/L UCRS

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X = 1.395

S= 1.677 **CV(1)**=1.202

K factor**= 3.188

TL(1)= 6.74E+00 **LL(1)=**N/A

Statistics-Transformed Background Data

X = -0.043 S = 0.814

CV(2) = -18.867

K factor=** 3.188

TL(2)= 2.55E+00 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number:	MW396	
Date Collected	Result	LN(Result)
8/13/2002	5.45E+00	1.70E+00
9/16/2002	4.00E-01	-9.16E-01
10/16/2002	5.40E-01	-6.16E-01
1/13/2003	7.20E-01	-3.29E-01
4/8/2003	6.90E-01	-3.71E-01
7/16/2003	1.10E+00	9.53E-02
10/14/2003	7.10E-01	-3.42E-01
1/14/2004	1.55E+00	4.38E-01

Dry/Partially Dry Wells

Well No. Gradient

MW389 Downgradient

Because CV(1) is greater than 1, the natural logarithm of background and test well results were calculated utilizing TL(2) for comparison.

	•	D (
Current	Quarter	Data

Well No.	Gradient	Detected?	Result	Result >TL(1)? LN(Result)	LN(Result) >TL(2)
MW386	Sidegradient	Yes	2.10E+00) N/A	7.42E-01	NO
MW390	Downgradien	t Yes	3.00E+00) N/A	1.10E+00	NO
MW393	Downgradien	t Yes	1.00E+00) N/A	0.00E+00	NO
MW396	Upgradient	Yes	2.61E+00) N/A	9.59E-01	NO

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5

TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Dissolved Solids UNITS: mg/L UCRS

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X = 550.375 S = 104.330 CV(1) = 0.190

K factor**= 3.188 TL(1)= 8.83E+02 LL(1)=N/A

Statistics-Transformed Background Data

X = 6.298 S = 0.162 CV(2) = 0.026

K factor**= 3.188 TL(2)= 6.82E+00 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number:	MW396				
Date Collected	Result	LN(Result)			
8/13/2002	5.02E+02	6.22E+00			
9/16/2002	5.06E+02	6.23E+00			
10/16/2002	5.43E+02	6.30E+00			
1/13/2003	5.21E+02	6.26E+00			
4/8/2003	5.04E+02	6.22E+00			
7/16/2003	5.32E+02	6.28E+00			
10/14/2003	4.90E+02	6.19E+00			
1/14/2004	8.05E+02	6.69E+00			

Dry/Partially Dry Wells

Well No. Gradient

MW389 Downgradient

Current Quarter Date

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current Quarter Data						
Well No.	Gradient	Detected?	Result	Result >TL	(1)? LN(Result)	LN(Result) >TL(2)
MW386	Sidegradient	Yes	3.64E+02	2 NO	5.90E+00	N/A

N/A MW390 Downgradient Yes 5.87E+00 N/A 3.55E+02 NO Downgradient Yes NO N/A MW393 2.72E+025.61E+00 MW396 5.99E+00 Upgradient Yes 3.98E+02 NO N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5

TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Iron UNITS: mg/L UCRS

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 7.796
 S= 3.723
 CV(1)=0.478 K factor**= 3.188
 TL(1)=1.97E+01 LL(1)=N/A

 Statistics-Transformed Background Data
 X= 1.880
 S= 0.723
 CV(2)=0.384 K factor**= 3.188
 TL(2)=4.18E+00 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

	Well Number:	MW396				
Date Collected		Result	LN(Result)			
	8/13/2002	1.80E+00	5.88E-01			
	9/16/2002	9.53E+00	2.25E+00			
	10/16/2002	7.43E+00	2.01E+00			
	1/13/2003	9.93E+00	2.30E+00			
	4/8/2003	1.02E+01	2.32E+00			
	7/16/2003	9.16E+00	2.21E+00			
	10/14/2003	1.19E+01	2.48E+00			
	1/14/2004	2.42E+00	8.84E-01			

Dry/Partially Dry Wells

Well No. Gradient

MW389 Downgradient

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current	Current Quarter Data					
Well No.	Gradient	Detected?	Result	Result >TL(1)? LN(Result)	LN(Result) >TL(2)
MW386	Sidegradient	Yes	1.32E-01	NO	-2.02E+00	N/A
MW390	Downgradien	t Yes	1.01E-01	NO	-2.29E+00	N/A
MW393	Downgradien	t Yes	1.09E+00) NO	8.62E-02	N/A
MW396	Upgradient	Yes	5.39E-02	NO	-2.92E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$

TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis **Historical Background Comparison** Magnesium UNITS: mg/L **UCRS**

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X = 16.876 S = 3.313

CV(1)=0.196 **K factor**=** 3.188

TL(1)= 2.74E+01 **LL(1)=**N/A

Statistics-Transformed Background Data

X = 2.804S = 0.240

CV(2) = 0.086

K factor=** 3.188

TL(2)=3.57E+00 LL(2)=N/A

Historical Background Data from **Upgradient Wells with Transformed Result**

Well Number:	MW396	
Date Collected	Result	LN(Result)
8/13/2002	1.55E+01	2.74E+00
9/16/2002	1.73E+01	2.85E+00
10/16/2002	1.78E+01	2.88E+00
1/13/2003	1.92E+01	2.95E+00
4/8/2003	1.78E+01	2.88E+00
7/16/2003	1.78E+01	2.88E+00
10/14/2003	2.02E+01	3.01E+00
1/14/2004	9.41E+00	2.24E+00

Dry/Partially Dry Wells

Well No. Gradient

MW389 Downgradient

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Commont	Owanton	Data
Current	Quarter	Data

Well No.	Gradient	Detected?	Result	Result >TL(1)? LN(Result)	LN(Result) >TL(2)
MW386	Sidegradient	Yes	8.31E+00) NO	2.12E+00	N/A
MW390	Downgradien	t Yes	1.18E+01	NO	2.47E+00	N/A
MW393	Downgradien	t Yes	4.01E+00) NO	1.39E+00	N/A
MW396	Upgradient	Yes	1.33E+01	NO	2.59E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

CVCoefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5 S

Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009. D1-16

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Manganese UNITS: mg/L UCRS

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X = 0.774 S = 0.353

CV(1)=0.456

K factor**= 3.188

TL(1)= 1.90E+00 **LL(1)=**N/A

Statistics-Transformed Background Data

X = -0.566 S = 1.192

CV(2) = -2.105

K factor**= 3.188

TL(2)=3.23E+00 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number:	MW396	
Date Collected	Result	LN(Result)
8/13/2002	5.70E-01	-5.62E-01
9/16/2002	6.47E-01	-4.35E-01
10/16/2002	8.80E-01	-1.28E-01
1/13/2003	1.13E+00	1.24E-01
4/8/2003	9.65E-01	-3.56E-02
7/16/2003	9.83E-01	-1.71E-02
10/14/2003	9.84E-01	-1.61E-02
1/14/2004	3.14E-02	-3.46E+00

Dry/Partially Dry Wells

Well No. Gradient

MW389 Downgradient

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

	•	D (
Current	Quarter	Data

Well No.	Gradient	Detected?	Result	Result >TL(1)? LN(Result)	LN(Result) >TL(2)
MW386	Sidegradient	Yes	1.17E+00) NO	1.57E-01	N/A
MW390	Downgradien	t Yes	1.50E-03	NO	-6.50E+00	N/A
MW393	Downgradien	t Yes	3.38E-02	NO	-3.39E+00	N/A
MW396	Upgradient	Yes	9.37E-03	NO	-4.67E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$

TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis **Historical Background Comparison** Molybdenum UNITS: mg/L **UCRS**

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X = 0.007

S = 0.011CV(1) = 1.507 **K factor**=** 3.188

TL(1)= 4.22E-02 **LL(1)=**N/A

Statistics-Transformed Background Data

X = -5.928 S = 1.420

CV(2) = -0.240

K factor=** 3.188

TL(2) = -1.40E + 00 LL(2) = N/A

Historical Background Data from **Upgradient Wells with Transformed Result**

Well Number:	MW396	
Date Collected	Result	LN(Result)
8/13/2002	2.50E-02	-3.69E+00
9/16/2002	2.50E-02	-3.69E+00
10/16/2002	1.00E-03	-6.91E+00
1/13/2003	1.28E-03	-6.66E+00
4/8/2003	2.71E-03	-5.91E+00
7/16/2003	1.17E-03	-6.75E+00
10/14/2003	1.00E-03	-6.91E+00
1/14/2004	1.00E-03	-6.91E+00

Dry/Partially Dry Wells

Well No. Gradient

MW389 Downgradient

Because CV(1) is greater than 1, the natural logarithm of background and test well results were calculated utilizing TL(2) for comparison.

Commont	Owanton	Data
Current	Quarter	Data

Well No.	Gradient	Detected?	Result	Result >TL(1)? LN(Result)	LN(Result) >TL(2)
MW386	Sidegradient	Yes	9.17E-04	N/A	-6.99E+00	NO
MW390	Downgradien	t Yes	3.33E-04	N/A	-8.01E+00	NO
MW393	Downgradien	t Yes	4.63E-04	N/A	-7.68E+00	NO
MW396	Upgradient	Yes	3.40E-04	N/A	-7.99E+00	NO

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

CVCoefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5 S

Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009. D1-18

C-746-S/T Third Quarter 2024 Statistical Analysis **Historical Background Comparison Nickel** UNITS: mg/L **UCRS**

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X = 0.016

S = 0.021CV(1)=1.272 **K factor**=** 3.188

TL(1)= 8.26E-02 **LL(1)=**N/A

Statistics-Transformed Background Data

X = -4.706 S = 1.057

CV(2) = -0.225

K factor=** 3.188

TL(2) = -1.34E+00 LL(2) = N/A

Historical Background Data from **Upgradient Wells with Transformed Result**

Well Number:	MW396	
Date Collected	Result	LN(Result)
8/13/2002	5.00E-02	-3.00E+00
9/16/2002	5.00E-02	-3.00E+00
10/16/2002	5.00E-03	-5.30E+00
1/13/2003	5.00E-03	-5.30E+00
4/8/2003	5.71E-03	-5.17E+00
7/16/2003	5.00E-03	-5.30E+00
10/14/2003	5.00E-03	-5.30E+00
1/14/2004	5.00E-03	-5.30E+00

Dry/Partially Dry Wells

Well No. Gradient

Downgradient MW389

Because CV(1) is greater than 1, the natural logarithm of background and test well results were calculated utilizing TL(2) for comparison.

Well No.	Gradient	Detected?	Result	Result >TL(1)?	2 LN(Result)	LN(Result) >TL(2)
MW386	Sidegradient	Yes	3.53E-03	N/A	-5.65E+00	NO
MW390	Downgradien	t Yes	1.50E-03	N/A	-6.50E+00	NO
MW393	Downgradien	t No	2.00E-03	N/A	-6.21E+00	N/A
MW396	Upgradient	No	2.00E-03	N/A	-6.21E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

CVCoefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5 S

Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Oxidation-Reduction Potential UNITS: mV

Historical Background Comparison UCRS

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X = 13.000 S = 61.952 CV(1) = 4.766

K factor**= 3.188

TL(1)= 2.11E+02 **LL(1)=**N/A

Statistics-Transformed Background Data

X = 4.364 S = 0.333

CV(2) = 0.076

K factor=** 3.188

TL(2) = 4.74E + 00 LL(2) = N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number:	MW396	
Date Collected	Result	LN(Result)
8/13/2002	6.00E+01	4.09E+00
4/8/2003	7.10E+01	4.26E+00
7/16/2003	-5.60E+01	#Func!
10/14/2003	-5.40E+01	#Func!
1/14/2004	-2.20E+01	#Func!
4/12/2004	-6.00E+00	#Func!
7/20/2004	-3.00E+00	#Func!
10/12/2004	1.14E+02	4.74E+00

Dry/Partially Dry Wells

Well No. Gradient

MW389 Downgradient

Because CV(1) is greater than 1, the natural logarithm of background and test well results were calculated utilizing TL(2) for comparison.

#Because the natural log was not possible for all background values, the TL was considered equal to the maximum background value.

Current	Quarter	Data
Current	Qual tti	Data

Well No.	Gradient	Detected?	Result	Result >TL(1)? LN(Result)	LN(Result) >TL(2)
MW386	Sidegradient	Yes	3.31E+02	2 N/A	5.80E+00	YES
MW390	Downgradien	t Yes	4.79E+02	2 N/A	6.17E+00	YES
MW393	Downgradien	t Yes	3.83E+02	N/A	5.95E+00	YES
MW396	Upgradient	Yes	3.73E+02	2 N/A	5.92E+00	YES

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to historical background data.

Wells with Exceedances

MW386 MW390 MW393

MW396

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5

TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis **Historical Background Comparison UNITS: Std Unit UCRS** pН

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

X = 6.460S = 0.350CV(1)=0.054K factor**= 3.736 **TL(1)=** 7.77E+00 **LL(1)=**5.15E+00 **Statistics-Background Data Statistics-Transformed CV(2)=**0.029 X = 1.864S = 0.054K factor**= 3.736

Background Data

TL(2)= 2.07E+00 LL(2)=1.66E+00

Historical Background Data from **Upgradient Wells with Transformed Result**

Well Number:	MW396	
Date Collected	Result	LN(Result)
8/13/2002	6.17E+00	1.82E+00
9/16/2002	6.40E+00	1.86E+00
10/16/2002	5.90E+00	1.77E+00
1/13/2003	6.40E+00	1.86E+00
4/8/2003	6.65E+00	1.89E+00
7/16/2003	6.40E+00	1.86E+00
10/14/2003	6.71E+00	1.90E+00
1/14/2004	7.05E+00	1.95E+00

Dry/Partially Dry Wells

Well No. Gradient Downgradient MW389

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current Quarter Data

Well No.	Gradient	Detected?	Result	Result >TL(1 Result <ll(1< th=""><th></th><th>LN(Result) >TL(2)? LN(Result) <ll(2)?< th=""></ll(2)?<></th></ll(1<>		LN(Result) >TL(2)? LN(Result) <ll(2)?< th=""></ll(2)?<>
MW386	Sidegradient	Yes	6.75E+00	NO	1.91E+00	N/A
MW390	Downgradien	t Yes	6.34E+00	NO	1.85E+00	N/A
MW393	Downgradien	t Yes	6.37E+00	NO	1.85E+00	N/A
MW396	Upgradient	Yes	6.58E+00	NO	1.88E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

CVCoefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5

Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009. D1-21

C-746-S/T Third Quarter 2024 Statistical Analysis **Historical Background Comparison Potassium** UNITS: mg/L **UCRS**

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

X = 1.411S = 0.399CV(1)=0.282**K factor**=** 3.188 **TL(1)=** 2.68E+00 **LL(1)=**N/A **Statistics-Background Data Statistics-Transformed** X = 0.311S = 0.271**K factor**=** 3.188 TL(2)=1.18E+00 LL(2)=N/ACV(2) = 0.870

Background Data

Historical Background Data from **Upgradient Wells with Transformed Result**

Well Number:	MW396		
Date Collected	Result	LN(Result)	
8/13/2002	2.00E+00	6.93E-01	
9/16/2002	2.00E+00	6.93E-01	
10/16/2002	9.78E-01	-2.22E-02	
1/13/2003	1.08E+00	7.70E-02	
4/8/2003	1.12E+00	1.13E-01	
7/16/2003	1.38E+00	3.22E-01	
10/14/2003	1.24E+00	2.15E-01	
1/14/2004	1.49E+00	3.99E-01	

Dry/Partially Dry Wells

Well No. Gradient Downgradient MW389

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current Quarter Data							
Well No.	Gradient	Detected?	Result	Result >TI	L(1)? LN(Result)	LN(Result) >TL	(2)
MW386	Sidegradient	Yes	2.81E-01	NO	-1.27E+00	N/A	
MW390	Downgradien	t Yes	3.47E-01	NO	-1.06E+00	N/A	
MW393	Downgradien	t Yes	4.59E-01	NO	-7.79E-01	N/A	
MW396	Upgradient	Yes	7.48E-01	NO	-2.90E-01	N/A	

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

CVCoefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5 S

Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009. D1-22

C-746-S/T Third Quarter 2024 Statistical Analysis **Historical Background Comparison** Radium-226 UNITS: pCi/L **UCRS**

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X = 0.157S = 0.280 CV(1)=1.782

K factor=** 3.188

TL(1)= 1.05E+00 **LL(1)**=N/A

Statistics-Transformed Background Data

X = -1.836 S = 1.229

CV(2) = -0.669

K factor=** 3.188

TL(2) = -3.71E-01 LL(2) = N/A

Historical Background Data from **Upgradient Wells with Transformed Result**

Well Number:	MW396			
Date Collected	Result	LN(Result)		
10/16/2002	6.90E-01	-3.71E-01		
1/13/2003	-6.93E-03	#Func!		
10/14/2003	-5.14E-02	#Func!		
1/14/2004	4.94E-01	-7.05E-01		
4/12/2004	-8.20E-02	#Func!		
7/20/2004	8.79E-02	-2.43E+00		
10/12/2004	4.08E-02	-3.20E+00		
1/18/2005	8.44E-02	-2.47E+00		

Dry/Partially Dry Wells

Well No. Gradient

Downgradient MW389

Because CV(1) is greater than 1, the natural logarithm of background and test well results were calculated utilizing TL(2) for comparison.

#Because the natural log was not possible for all background values, the TL was considered equal to the maximum background value.

Current	Quarter	Data
Cullut	Qual tti	Data

Well No.	Gradient	Detected?	Result	Result >TL(1)	2 LN(Result)	LN(Result) >TL(2)
MW386	Sidegradient	No	4.12E-01	N/A	-8.87E-01	N/A
MW390	Downgradien	t Yes	7.71E-01	N/A	-2.60E-01	YES
MW393	Downgradien	t No	1.78E-01	N/A	-1.73E+00	N/A
MW396	Upgradient	Yes	9.94E-01	N/A	-6.02E-03	YES

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to historical background data.

Wells with Exceedances

MW390 MW396

CVCoefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5 S

Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009. D1-23

C-746-S/T Third Quarter 2024 Statistical Analysis **Historical Background Comparison Sodium** UNITS: mg/L **UCRS**

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X = 106.825 S = 32.041 CV(1) = 0.300

K factor=** 3.188

TL(1)= 2.09E+02 **LL(1)=**N/A

Statistics-Transformed Background Data

X = 4.595S = 0.492

CV(2) = 0.107

K factor**= 3.188

TL(2) = 6.16E + 00 LL(2) = N/A

Historical Background Data from **Upgradient Wells with Transformed Result**

Well Number:	MW396	
Date Collected	Result	LN(Result)
8/13/2002	1.15E+02	4.74E+00
9/16/2002	1.16E+02	4.75E+00
10/16/2002	1.17E+02	4.76E+00
1/13/2003	1.22E+02	4.80E+00
4/8/2003	1.06E+02	4.66E+00
7/16/2003	1.17E+02	4.76E+00
10/14/2003	1.32E+02	4.88E+00
1/14/2004	2.96E+01	3.39E+00

Dry/Partially Dry Wells

Well No. Gradient

MW389 Downgradient

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Well No.	Gradient	Detected?	Result	Result >TL((1)? LN(Result)	LN(Result) >TL(2)
MW386	Sidegradient	Yes	1.10E+02	2 NO	4.70E+00	N/A
MW390	Downgradien	t Yes	9.10E+01	NO	4.51E+00	N/A
MW393	Downgradien	t Yes	7.79E+01	NO	4.36E+00	N/A
MW396	Upgradient	Yes	8.79E+01	NO	4.48E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

CVCoefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5 S

Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009. D1-24

C-746-S/T Third Quarter 2024 Statistical Analysis **Historical Background Comparison Sulfate** UNITS: mg/L **UCRS**

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X = 22.463 S = 8.876

CV(1)=0.395

K factor=** 3.188

TL(1)= 5.08E+01 **LL(1)=**N/A

Statistics-Transformed Background Data

X = 3.054S = 0.351

CV(2) = 0.115

K factor=** 3.188

TL(2) = 4.17E + 00 LL(2) = N/A

Historical Background Data from **Upgradient Wells with Transformed Result**

Well Number:	MW396		
Date Collected	Result	LN(Result)	
8/13/2002	4.19E+01	3.74E+00	
9/16/2002	2.63E+01	3.27E+00	
10/16/2002	2.06E+01	3.03E+00	
1/13/2003	1.66E+01	2.81E+00	
4/8/2003	2.39E+01	3.17E+00	
7/16/2003	1.88E+01	2.93E+00	
10/14/2003	1.29E+01	2.56E+00	
1/14/2004	1.87E+01	2.93E+00	

Dry/Partially Dry Wells

Well No. Gradient

Downgradient MW389

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current	Quarter	Data
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Well No.	Gradient	Detected?	Result	Result >TL(1)?	LN(Result)	LN(Result) >TL(2
MW386	Sidegradient	Yes	3.88E+01	NO	3.66E+00	N/A
MW390	Downgradien	t Yes	3.36E+01	NO	3.51E+00	N/A
MW393	Downgradien	t Yes	2.32E+01	NO	3.14E+00	N/A
MW396	Upgradient	Yes	2.75E+01	NO	3.31E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

CVCoefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5 S

Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009. D1-25

C-746-S/T Third Quarter 2024 Statistical Analysis **Historical Background Comparison Technetium-99** UNITS: pCi/L **UCRS**

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

X = 7.624S = 6.558CV(1)=0.860**K factor**=** 3.188 **TL(1)=** 2.85E+01 **LL(1)=**N/A **Statistics-Background Data Statistics-Transformed S=** 1.321 **K factor**=** 3.188 X = 1.498CV(2) = 0.882TL(2)=5.71E+00 LL(2)=N/A

Background Data

Historical Background Data from **Upgradient Wells with Transformed Result**

Well Number:	MW396	
Date Collected	Result	LN(Result)
8/13/2002	1.67E+01	2.82E+00
9/16/2002	6.39E+00	1.85E+00
10/16/2002	4.55E+00	1.52E+00
1/13/2003	1.65E+01	2.80E+00
4/8/2003	3.04E+00	1.11E+00
7/16/2003	3.54E-01	-1.04E+00
10/14/2003	1.19E+01	2.48E+00
1/14/2004	1.56E+00	4.45E-01

Dry/Partially Dry Wells

Well No. Gradient MW389 Downgradient

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current	Quarter	Data
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Well No.	Gradient	Detected?	Result	Result >TL(1)?	LN(Result)	LN(Result) >TL(2
MW386	Sidegradient	No	-9.74E+00) N/A	#Error	N/A
MW390	Downgradien	t Yes	5.74E+01	YES	4.05E+00	N/A
MW393	Downgradien	t No	-8.36E+00) N/A	#Error	N/A
MW396	Upgradient	No	-8.86E+00) N/A	#Error	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to historical background data.

Wells with Exceedances

MW390

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

CVCoefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5 S

Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009. D1-26

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Total Organic Carbon (TOC) UNITS: mg/L UCRS

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 9.988
 S= 4.696
 CV(1)=0.470
 K factor**= 3.188
 TL(1)= 2.50E+01
 LL(1)=N/A

 Statistics-Transformed
 X= 2.210
 S= 0.454
 CV(2)=0.205
 K factor**= 3.188
 TL(2)= 3.66E+00
 LL(2)=N/A

Background Data

Historical Background Data from Upgradient Wells with Transformed Result

Well Number:	MW396	
Date Collected	Result	LN(Result)
8/13/2002	1.90E+01	2.94E+00
9/16/2002	1.46E+01	2.68E+00
10/16/2002	1.04E+01	2.34E+00
1/13/2003	4.40E+00	1.48E+00
4/8/2003	7.00E+00	1.95E+00
7/16/2003	7.30E+00	1.99E+00
10/14/2003	9.10E+00	2.21E+00
1/14/2004	8.10E+00	2.09E+00

Dry/Partially Dry Wells

Well No. Gradient

MW389 Downgradient

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current Quarter Data							
Well No.	Gradient	Detected?	Result	Result >TL	(1)? LN(Result)	LN(Result) >TL(2)
MW386	Sidegradient	Yes	5.53E+00) NO	1.71E+00	N/A	
MW390	Downgradien	t Yes	1.93E+00) NO	6.58E-01	N/A	
MW393	Downgradien	t Yes	1.91E+00) NO	6.47E-01	N/A	
MW396	Upgradient	Yes	3.51E+00) NO	1.26E+00	N/A	

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$

TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Total Organic Halides (TOX) UNITS: ug/L UCRS

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X = 142.650 S = 53.533 CV(1) = 0.375

K factor**= 3.188

TL(1)=3.13E+02 LL(1)=N/A

Statistics-Transformed Background Data

X = 4.896 S = 0.390 CV(2) = 0.080

K factor=** 3.188 **TL(2)=** 6.14E+00 **LL(2)=**N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number:	MW396	
Date Collected	Result	LN(Result)
8/13/2002	1.93E+02	5.26E+00
9/16/2002	1.90E+02	5.25E+00
10/16/2002	2.21E+02	5.40E+00
1/13/2003	1.06E+02	4.66E+00
4/8/2003	7.78E+01	4.35E+00
7/16/2003	1.22E+02	4.80E+00
10/14/2003	8.64E+01	4.46E+00
1/14/2004	1.45E+02	4.98E+00

Dry/Partially Dry Wells

Well No. Gradient

MW389 Downgradient

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current Q	uarter	Data
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Well	No.	Gradient	Detected?	Result	Result >TL((1)? LN(Result)	LN(Result) >TL(2)
MW.	386	Sidegradient	Yes	1.46E+02	2 NO	4.98E+00	N/A
MW.	390	Downgradien	t Yes	1.20E+01	NO	2.48E+00	N/A
MW.	393	Downgradien	t Yes	2.21E+01	NO	3.10E+00	N/A
MW.	396	Upgradient	Yes	4.26E+01	NO	3.75E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5

TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis **Historical Background Comparison** UNITS: mg/L **UCRS** Zinc

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X = 0.044

S = 0.035CV(1)=0.786 **K factor**=** 3.188

TL(1)= 1.56E-01 **LL(1)**=N/A

Statistics-Transformed Background Data

X = -3.342 S = 0.682

CV(2) = -0.204

K factor=** 3.188

TL(2) = -1.17E + 00 LL(2) = N/A

Historical Background Data from **Upgradient Wells with Transformed Result**

Well Number:	MW396	
Date Collected	Result	LN(Result)
8/13/2002	1.00E-01	-2.30E+00
9/16/2002	1.00E-01	-2.30E+00
10/16/2002	2.50E-02	-3.69E+00
1/13/2003	3.50E-02	-3.35E+00
4/8/2003	3.50E-02	-3.35E+00
7/16/2003	2.00E-02	-3.91E+00
10/14/2003	2.00E-02	-3.91E+00
1/14/2004	2.00E-02	-3.91E+00

Dry/Partially Dry Wells

Well No. Gradient

MW389 Downgradient

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Commont	Owanton	Data
Current	Quarter	Data

Well No.	Gradient	Detected?	Result	Result >TL(1))? LN(Result)	LN(Result) >TL(2)
MW386	Sidegradient	No	2.00E-02	N/A	-3.91E+00	N/A
MW390	Downgradien	t Yes	6.48E-03	NO	-5.04E+00	N/A
MW393	Downgradien	t No	2.00E-02	N/A	-3.91E+00	N/A
MW396	Upgradient	No	2.00E-02	N/A	-3.91E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

CVCoefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5 S

Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009. D1-29

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Acetone UNITS: ug/L URGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 10.250
 S= 1.000
 CV(1)=0.098
 K factor**= 2.523
 TL(1)= 1.28E+01
 LL(1)=N/A

 Statistics-Transformed Background Data
 X= 2.324
 S= 0.084
 CV(2)=0.036
 K factor**= 2.523
 TL(2)= 2.54E+00
 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW220 Date Collected Result LN(Result) 10/14/2002 1.00E+01 2.30E+00 1/15/2003 1.00E+01 2.30E+00 4/10/2003 1.00E+01 2.30E+00 7/14/2003 1.00E+01 2.30E+00 10/13/2003 1.00E+01 2.30E+00 4/13/2004 1.00E+01 2.30E+00 7/21/2004 1.00E+01 2.30E+00 10/11/2004 1.00E+01 2.30E+00 Well Number: MW394 Date Collected Result LN(Result) 8/13/2002 1.00E+01 2.30E+00 9/30/2002 1.00E+01 2.30E+00 10/16/2002 1.00E+01 2.30E+00 1/13/2003 1.00E+01 2.30E+00 4/10/2003 1.00E+01 2.30E+00 7/16/2003 1.00E+01 2.30E+00 10/14/2003 1.40E+01 2.64E+004/12/2004 1.00E+01 2.30E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Well No.	Gradient	Detected?	Result	Result >TL(1)	2 LN(Result)	LN(Result) >TL(2)
MW220	Upgradient	No	5.00E+00	N/A	1.61E+00	N/A
MW221	Sidegradient	Yes	2.45E+00	NO	8.96E-01	N/A
MW222	Sidegradient	No	5.00E+00	N/A	1.61E+00	N/A
MW223	Sidegradient	No	5.00E+00	N/A	1.61E+00	N/A
MW224	Sidegradient	No	5.00E+00	N/A	1.61E+00	N/A
MW369	Downgradient	t No	5.00E+00	N/A	1.61E+00	N/A
MW372	Downgradient	t No	5.00E+00	N/A	1.61E+00	N/A
MW384	Sidegradient	No	5.00E+00	N/A	1.61E+00	N/A
MW387	Downgradient	t No	5.00E+00	N/A	1.61E+00	N/A
MW391	Downgradient	t No	5.00E+00	N/A	1.61E+00	N/A
MW394	Upgradient	No	5.00E+00	N/A	1.61E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Aluminum UNITS: mg/L URGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X = 0.221 S = 0.061 CV(1) = 0.277 K factor**= 2.523
 TL(1) = 3.76E-01 LL(1) = N/A

 Statistics-Transformed Background Data
 X = -1.534 S = 0.212 CV(2) = -0.138 K factor**= 2.523
 TL(2) = -9.99E-01 LL(2) = N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW220 Date Collected Result LN(Result) 10/14/2002 2.00E-01 -1.61E+00 1/15/2003 2.00E-01 -1.61E+00 4/10/2003 2.00E-01 -1.61E+00 7/14/2003 2.00E-01 -1.61E+00 10/13/2003 4.27E-01 -8.51E-01 1/13/2004 3.09E-01 -1.17E+00 4/13/2004 2.00E-01 -1.61E+00 7/21/2004 2.02E-01 -1.60E+00 Well Number: MW394 Date Collected Result LN(Result) 8/13/2002 2.00E-01 -1.61E+00 9/16/2002 2.00E-01 -1.61E+00 10/16/2002 2.00E-01 -1.61E+00 1/13/2003 2.00E-01 -1.61E+00 4/10/2003 2.00E-01 -1.61E+00 7/16/2003 2.00E-01 -1.61E+00 10/14/2003 2.00E-01 -1.61E+00 1/13/2004 2.00E-01 -1.61E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current	Quarter Data					
Well No.	Gradient	Detected?	Result	Result >TL(1)? LN(Result)	LN(Result) >TL(2)
MW220	Upgradient	No	5.00E-02	N/A	-3.00E+00	N/A
MW221	Sidegradient	No	5.00E-02	N/A	-3.00E+00	N/A
MW222	Sidegradient	No	5.00E-02	N/A	-3.00E+00	N/A
MW223	Sidegradient	No	5.00E-02	N/A	-3.00E+00	N/A
MW224	Sidegradient	No	5.00E-02	N/A	-3.00E+00	N/A
MW369	Downgradien	t Yes	2.69E-02	NO	-3.62E+00	N/A
MW372	Downgradien	t No	5.00E-02	N/A	-3.00E+00	N/A
MW384	Sidegradient	Yes	4.02E-02	NO	-3.21E+00	N/A
MW387	Downgradien	t Yes	2.30E-01	NO	-1.47E+00	N/A
MW391	Downgradien	t Yes	2.24E-02	NO	-3.80E+00	N/A
MW394	Upgradient	No	5.00E-02	N/A	-3.00E+00	N/A
N/A - Resu	lts identified as N	Ion-Detects	during lab	oratory analysis	s or data validation	n and were not

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5

TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Boron UNITS: mg/L URGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 0.425
 S= 0.615
 CV(1)=1.447
 K factor**= 2.523
 TL(1)= 1.98E+00
 LL(1)=N/A

 Statistics-Transformed Background Data
 X= -1.322
 S= 0.786
 CV(2)=-0.595
 K factor**= 2.523
 TL(2)= 6.63E-01
 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW220 Date Collected Result LN(Result) 10/14/2002 2.00E-01 -1.61E+00 1/15/2003 2.00E-01 -1.61E+00 4/10/2003 2.00E-01 -1.61E+00 7/14/2003 2.00E-01 -1.61E+00 10/13/2003 2.00E-01 -1.61E+00 1/13/2004 2.00E-01 -1.61E+00 4/13/2004 2.00E-01 -1.61E+00 7/21/2004 2.00E-01 -1.61E+00 Well Number: MW394 Date Collected Result LN(Result) 8/13/2002 2.00E+00 6.93E-01 9/16/2002 2.00E+00 6.93E-01 10/16/2002 2.00E-01 -1.61E+00 1/13/2003 2.00E-01 -1.61E+00 4/10/2003 2.00E-01 -1.61E+00 7/16/2003 2.00E-01 -1.61E+00 10/14/2003 2.00E-01 -1.61E+00 1/13/2004 2.00E-01 -1.61E+00

Because CV(1) is greater than 1, the natural logarithm of background and test well results were calculated utilizing TL(2) for comparison.

Well No.	Gradient	Detected?	Result	Result >TL(1)	? LN(Result)	LN(Result) >TL(2)
MW220	Upgradient	Yes	7.12E-03	N/A	-4.94E+00	NO
MW221	Sidegradient	Yes	2.42E-02	N/A	-3.72E+00	NO
MW222	Sidegradient	Yes	1.29E-02	N/A	-4.35E+00	NO
MW223	Sidegradient	Yes	1.34E-02	N/A	-4.31E+00	NO
MW224	Sidegradient	Yes	3.50E-02	N/A	-3.35E+00	NO
MW369	Downgradien	t Yes	1.37E-02	N/A	-4.29E+00	NO
MW372	Downgradien	t Yes	1.86E+00	N/A	6.21E-01	NO
MW384	Sidegradient	Yes	5.99E-02	N/A	-2.82E+00	NO
MW387	Downgradien	t Yes	4.58E-02	N/A	-3.08E+00	NO
MW391	Downgradien	t Yes	2.41E-02	N/A	-3.73E+00	NO
MW394	Upgradient	Yes	2.06E-02	N/A	-3.88E+00	NO

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Bromide UNITS: mg/L URGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data X=1.000 S= 0.000 CV(1)=0.000 K factor**= 2.523 TL(1)=1.00E+00 LL(1)=N/A Statistics-Transformed Background Data X=0.000 S= 0.000 CV(2)=#Num! K factor**= 2.523 TL(2)=0.00E+00 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW220 Date Collected Result LN(Result) 10/14/2002 1.00E+00 0.00E+001/15/2003 1.00E+00 0.00E+004/10/2003 1.00E+00 0.00E+007/14/2003 1.00E+00 0.00E+0010/13/2003 1.00E+00 0.00E+001/13/2004 1.00E+00 0.00E+004/13/2004 1.00E+00 0.00E+007/21/2004 1.00E+00 0.00E+00Well Number: MW394 Date Collected Result LN(Result) 8/13/2002 1.00E+00 0.00E+009/16/2002 1.00E+00 0.00E+0010/16/2002 1.00E+00 0.00E+001/13/2003 1.00E+00 0.00E+004/10/2003 1.00E+00 0.00E+007/16/2003 1.00E+00 0.00E+0010/14/2003 1.00E+00 0.00E+001/13/2004 1.00E+00 0.00E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Well No.	Gradient	Detected?	Result	Result >TL	(1)? LN(Result)	LN(Result) >TL(2)
MW220	Upgradient	Yes	2.61E-01	NO	-1.34E+00	N/A
MW221	Sidegradient	Yes	6.23E-01	NO	-4.73E-01	N/A
MW222	Sidegradient	Yes	3.98E-01	NO	-9.21E-01	N/A
MW223	Sidegradient	Yes	4.05E-01	NO	-9.04E-01	N/A
MW224	Sidegradient	Yes	3.30E-01	NO	-1.11E+00	N/A
MW369	Downgradien	t Yes	3.25E-01	NO	-1.12E+00	N/A
MW372	Downgradien	t Yes	4.86E-01	NO	-7.22E-01	N/A
MW384	Sidegradient	Yes	2.57E-01	NO	-1.36E+00	N/A
MW387	Downgradien	t Yes	4.75E-01	NO	-7.44E-01	N/A
MW391	Downgradien	t Yes	4.90E-01	NO	-7.13E-01	N/A
MW394	Upgradient	Yes	8.00E-01	NO	-2.23E-01	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Calcium UNITS: mg/L URGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 27.638
 S= 4.743
 CV(1)=0.172 K factor**= 2.523
 TL(1)=3.96E+01 LL(1)=N/A

 Statistics-Transformed Background Data
 X= 3.304
 S= 0.183
 CV(2)=0.055 K factor**= 2.523
 TL(2)=3.76E+00 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW220 Date Collected Result LN(Result) 10/14/2002 2.36E+01 3.16E+00 1/15/2003 2.59E+01 3.25E+00 4/10/2003 3.04E+013.41E+00 7/14/2003 3.39E+01 3.52E+00 10/13/2003 2.13E+01 3.06E+00 1/13/2004 2.03E+01 3.01E+00 4/13/2004 2.38E+01 3.17E+00 7/21/2004 1.90E+01 2.94E+00 Well Number: MW394 Date Collected Result LN(Result) 8/13/2002 2.95E+01 3.38E+00 9/16/2002 2.99E+01 3.40E+00 10/16/2002 3.12E+01 3.44E+00 1/13/2003 3.07E+01 3.42E+00 4/10/2003 3.44E+01 3.54E+00 7/16/2003 2.96E+01 3.39E+00 10/14/2003 3.03E+01 3.41E+00 1/13/2004 2.84E+01 3.35E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current Quarter Data									
Well No.	Gradient	Detected?	Result	Result >TL(1)? LN(Result)	LN(Result) >TL(2)			
MW220	Upgradient	Yes	2.55E+01	l NO	3.24E+00	N/A			
MW221	Sidegradient	Yes	2.13E+01	l NO	3.06E+00	N/A			
MW222	Sidegradient	Yes	2.11E+01	l NO	3.05E+00	N/A			
MW223	Sidegradient	Yes	2.34E+01	l NO	3.15E+00	N/A			
MW224	Sidegradient	Yes	2.59E+01	l NO	3.25E+00	N/A			
MW369	Downgradien	t Yes	1.51E+01	l NO	2.71E+00	N/A			
MW372	Downgradien	t Yes	6.59E+01	I YES	4.19E+00	N/A			
MW384	Sidegradient	Yes	2.33E+01	l NO	3.15E+00	N/A			
MW387	Downgradien	t Yes	3.74E+01	l NO	3.62E+00	N/A			
MW391	Downgradien	t Yes	2.47E+01	l NO	3.21E+00	N/A			
MW394	Upgradient	Yes	2.75E+01	l NO	3.31E+00	N/A			
N/A - Resu			_	oratory analysis	s or data validation	n and were not			

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to historical background data.

Wells with Exceedances

MW372

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Chemical Oxygen Demand (COD) UNITS: mg/L URGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 35.000
 S= 0.000
 CV(1)=0.000 K factor**= 2.523
 TL(1)=3.50E+01 LL(1)=N/A

 Statistics-Transformed Background Data
 X= 3.555
 S= 0.000
 CV(2)=0.000 K factor**= 2.523
 TL(2)=3.56E+00 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW220 Date Collected Result LN(Result) 10/14/2002 3.50E+01 3.56E+00 1/15/2003 3.50E+01 3.56E+00 4/10/2003 3.50E+01 3.56E+00 7/14/2003 3.50E+01 3.56E+00 10/13/2003 3.50E+01 3.56E+00 1/13/2004 3.50E+01 3.56E+00 4/13/2004 3.50E+01 3.56E+00 7/21/2004 3.50E+01 3.56E+00 Well Number: MW394 Date Collected Result LN(Result) 8/13/2002 3.50E+01 3.56E+00 9/16/2002 3.50E+01 3.56E+00 10/16/2002 3.50E+01 3.56E+00 1/13/2003 3.50E+01 3.56E+00 4/10/2003 3.50E+01 3.56E+00 7/16/2003 3.50E+01 3.56E+00 10/14/2003 3.50E+01 3.56E+00 1/13/2004 3.50E+01 3.56E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Well No.	Gradient	Detected?	Result	Result >TL(1)	? LN(Result)	LN(Result) > TL(2)
MW220	Upgradient	Yes	1.33E+01	NO	2.59E+00	N/A
MW221	Sidegradient	No	2.00E+01	N/A	3.00E+00	N/A
MW222	Sidegradient	No	2.00E+01	N/A	3.00E+00	N/A
MW223	Sidegradient	No	2.00E+01	N/A	3.00E+00	N/A
MW224	Sidegradient	Yes	1.33E+01	NO	2.59E+00	N/A
MW369	Downgradient	t No	2.00E+01	N/A	3.00E+00	N/A
MW372	Downgradient	t Yes	2.57E+01	NO	3.25E+00	N/A
MW384	Sidegradient	No	2.00E+01	N/A	3.00E+00	N/A
MW387	Downgradient	t Yes	4.21E+01	YES	3.74E+00	N/A
MW391	Downgradient	t Yes	1.08E+01	NO	2.38E+00	N/A
MW394	Upgradient	Yes	1.10E+01	NO	2.40E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to historical background data.

Wells with Exceedances

MW387

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Chloride UNITS: mg/L URGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 49.044
 S= 11.278
 CV(1)=0.230
 K factor**= 2.523
 TL(1)= 7.75E+01
 LL(1)=N/A

 Statistics-Transformed Background Data
 X= 3.866
 S= 0.244
 CV(2)=0.063
 K factor**= 2.523
 TL(2)= 4.48E+00
 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW220 Date Collected Result LN(Result) 10/14/2002 4.46E+01 3.80E+00 1/15/2003 4.32E+01 3.77E+00 4/10/2003 3.15E+01 3.45E+00 7/14/2003 3.08E+01 3.43E+00 10/13/2003 4.09E+01 3.71E+00 1/13/2004 4.08E+01 3.71E+00 4/13/2004 3.75E+01 3.62E+007/21/2004 4.08E+01 3.71E+00 Well Number: MW394 Date Collected Result LN(Result) 8/13/2002 6.04E+01 4.10E+00 9/16/2002 6.03E+01 4.10E+00 10/16/2002 5.80E+01 4.06E+00 1/13/2003 6.07E+01 4.11E+00 4/10/2003 6.29E+01 4.14E+00 7/16/2003 5.81E+01 4.06E+00 10/14/2003 5.82E+01 4.06E+00 1/13/2004 5.60E+01 4.03E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current Quarter Data									
Well No.	Gradient	Detected?	Result	Result >TL(1))? LN(Result)	LN(Result) >TL(2)			
MW220	Upgradient	Yes	1.81E+01	NO	2.90E+00	N/A			
MW221	Sidegradient	Yes	3.50E+01	NO	3.56E+00	N/A			
MW222	Sidegradient	Yes	3.23E+01	NO	3.48E+00	N/A			
MW223	Sidegradient	Yes	3.59E+01	NO	3.58E+00	N/A			
MW224	Sidegradient	Yes	2.48E+01	NO	3.21E+00	N/A			
MW369	Downgradien	t Yes	2.94E+01	NO	3.38E+00	N/A			
MW372	Downgradien	t Yes	3.52E+01	NO	3.56E+00	N/A			
MW384	Sidegradient	No	2.13E+01	N/A	3.06E+00	N/A			
MW387	Downgradien	t Yes	3.69E+01	NO	3.61E+00	N/A			
MW391	Downgradien	t No	4.20E+01	N/A	3.74E+00	N/A			
MW394	Upgradient	Yes	2.25E+01	NO	3.11E+00	N/A			
	N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not								

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Cobalt UNITS: mg/L URGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 0.016 S= 0.040 CV(1)=2.440 K factor**=2.523 TL(1)=1.16E-01 LL(1)=N/A

 Statistics-Transformed Background Data
 X= -5.582 S= 1.573 CV(2)=-0.282 K factor**=2.523 TL(2)=-1.61E+00 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW220 Date Collected Result LN(Result) 10/14/2002 4.10E-03 -5.50E+00 1/15/2003 4.96E-03 -5.31E+00 4/10/2003 2.89E-03 -5.85E+00 7/14/2003 -1.83E+00 1.61E-01 10/13/2003 2.26E-02 -3.79E+00 1/13/2004 4.64E-03 -5.37E+00 4/13/2004 1.00E-03 -6.91E+00 7/21/2004 2.64E-03 -5.94E+00 Well Number: MW394 Date Collected Result LN(Result) 8/13/2002 2.50E-02 -3.69E+00 9/16/2002 2.50E-02 -3.69E+00 10/16/2002 1.00E-03 -6.91E+00 1/13/2003 1.00E-03 -6.91E+00 4/10/2003 1.00E-03 -6.91E+00 7/16/2003 1.00E-03 -6.91E+00 10/14/2003 1.00E-03 -6.91E+00 1/13/2004 1.00E-03 -6.91E+00

Because CV(1) is greater than 1, the natural logarithm of background and test well results were calculated utilizing TL(2) for comparison.

Well No.	Gradient	Detected?	Result	Result >TL(1)? LN(Result)	LN(Result) >TL(2)
MW220	Upgradient	No	1.00E-03	N/A	-6.91E+00	N/A
MW221	Sidegradient	Yes	1.12E-03	N/A	-6.79E+00	NO
MW222	Sidegradient	Yes	5.16E-04	N/A	-7.57E+00	NO
MW223	Sidegradient	Yes	3.07E-03	N/A	-5.79E+00	NO
MW224	Sidegradient	No	1.00E-03	N/A	-6.91E+00	N/A
MW369	Downgradient	t Yes	4.31E-03	N/A	-5.45E+00	NO
MW372	Downgradient	t Yes	3.87E-04	N/A	-7.86E+00	NO
MW384	Sidegradient	No	1.00E-03	N/A	-6.91E+00	N/A
MW387	Downgradient	t Yes	3.71E-04	N/A	-7.90E+00	NO
MW391	Downgradient	t No	1.00E-03	N/A	-6.91E+00	N/A
MW394	Upgradient	No	1.00E-03	N/A	-6.91E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Conductivity UNITS: umho/cm URGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X = 382.132 S = 107.134 CV(1) = 0.280

K factor**= 2.523

TL(1) = 6.52E + 02 LL(1) = N/A

Statistics-Transformed Background Data

1/13/2004

X = 5.716 S = 1.164 CV(2) = 0.204

K factor**= 2.523 TL(2)

TL(2)= 8.65E+00 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW220 Date Collected Result LN(Result) 10/14/2002 3.68E+02 5.91E+00 1/15/2003 4.33E+02 6.07E+00 4/10/2003 4.89E+02 6.19E+00 7/14/2003 4.30E+02 6.06E+00 10/13/2003 3.46E+02 5.85E+00 1/13/2004 3.65E+02 5.90E+00 4/13/2004 4.16E+02 6.03E+00 7/21/2004 3.53E+02 5.87E+00 Well Number: MW394 Date Collected Result LN(Result) 8/13/2002 4.06E+02 6.01E+00 9/16/2002 4.18E+02 6.04E+00 10/16/2002 4.11E+02 6.02E+00 1/13/2003 4.22E+02 6.05E+00 4/10/2003 4.20E+02 6.04E+00 7/16/2003 4.38E+02 6.08E+00 10/14/2003 3.91E+00 1.36E+00

3.95E+02

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current	Quarter	Data
Current	Quarter	Data

Well No.	Gradient	Detected?	Result	Result >TL(1)? LN(Result)	LN(Result) >TL(2
MW220	Upgradient	Yes	4.17E+02	2 NO	6.03E+00	N/A
MW221	Sidegradient	Yes	3.96E+02	2 NO	5.98E+00	N/A
MW222	Sidegradient	Yes	3.89E+02	2 NO	5.96E+00	N/A
MW223	Sidegradient	Yes	3.96E+02	2 NO	5.98E+00	N/A
MW224	Sidegradient	Yes	4.60E+02	2 NO	6.13E+00	N/A
MW369	Downgradien	t Yes	3.36E+02	2 NO	5.82E+00	N/A
MW372	Downgradien	t Yes	7.49E+02	YES YES	6.62E+00	N/A
MW384	Sidegradient	Yes	4.20E+02	2 NO	6.04E+00	N/A
MW387	Downgradien	t Yes	5.66E+02	2 NO	6.34E+00	N/A
MW391	Downgradien	t Yes	3.84E+02	2 NO	5.95E+00	N/A
MW394	Ungradient	Yes	4.00E+02	2 NO	5.99E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

5.98E+00

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to historical background data.

Wells with Exceedances

MW372

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

- S Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis **Historical Background Comparison** UNITS: mg/L **URGA** Copper

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

X = 0.024S = 0.010CV(1)=0.429**K factor**=** 2.523 **TL(1)=** 4.96E-02 **LL(1)=**N/A **Statistics-Background Data Statistics-Transformed** X = -3.794 S = 0.312CV(2) = -0.082**K factor**=** 2.523 TL(2) = -3.01E+00 LL(2)=N/A

Background Data

Historical Background Data from **Upgradient Wells with Transformed Result**

Well Number: MW220 Date Collected Result LN(Result) 10/14/2002 2.11E-02 -3.86E+00 1/15/2003 2.00E-02 -3.91E+00 4/10/2003 2.00E-02 -3.91E+00 7/14/2003 2.00E-02 -3.91E+00 10/13/2003 2.00E-02 -3.91E+00 1/13/2004 2.00E-02 -3.91E+00 4/13/2004 2.00E-02 -3.91E+00 7/21/2004 2.00E-02 -3.91E+00 Well Number: MW394 Date Collected Result LN(Result) 8/13/2002 5.00E-02 -3.00E+00 9/16/2002 5.00E-02 -3.00E+00 10/16/2002 2.00E-02 -3.91E+00 1/13/2003 2.00E-02 -3.91E+00 4/10/2003 2.00E-02 -3.91E+00 7/16/2003 2.00E-02 -3.91E+00 10/14/2003 2.00E-02 -3.91E+00 1/13/2004 2.00E-02 -3.91E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current Quarter Data									
Well No.	Gradient	Detected?	Result	Result >TL	(1)? LN(Result)	LN(Result) >TL(2)			
MW220	Upgradient	Yes	1.94E-03	NO	-6.25E+00	N/A			
MW221	Sidegradient	Yes	3.29E-03	NO	-5.72E+00	N/A			
MW222	Sidegradient	Yes	1.08E-03	NO	-6.83E+00	N/A			
MW223	Sidegradient	Yes	1.50E-03	NO	-6.50E+00	N/A			
MW224	Sidegradient	Yes	1.10E-03	NO	-6.81E+00	N/A			
MW369	Downgradien	t Yes	2.95E-03	NO	-5.83E+00	N/A			
MW372	Downgradien	t Yes	1.35E-03	NO	-6.61E+00	N/A			
MW384	Sidegradient	Yes	1.39E-03	NO	-6.58E+00	N/A			
MW387	Downgradien	t Yes	1.48E-03	NO	-6.52E+00	N/A			
MW391	Downgradien	t Yes	6.21E-04	NO	-7.38E+00	N/A			
MW394	Upgradient	Yes	1.03E-03	NO	-6.88E+00	N/A			
N/A - Resu	lts identified as N	Ion-Detects	during lab	oratory analys	is or data validation	n and were not			

included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CVCoefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5 S
- Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)
- Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009. D1-39

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Dissolved Oxygen UNITS: mg/L URGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 3.784
 S= 1.887
 CV(1)=0.499
 K factor**= 2.523
 TL(1)= 8.54E+00
 LL(1)=N/A

 Statistics-Transformed Background Data
 X= 1.182
 S= 0.612
 CV(2)=0.518
 K factor**= 2.523
 TL(2)= 2.73E+00
 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW220 Date Collected Result LN(Result) 10/14/2002 6.79E + 001.92E+00 1/15/2003 7.25E+00 1.98E+00 4/10/2003 3.60E+001.28E+00 7/14/2003 9.40E-01 -6.19E-02 10/13/2003 1.65E+00 5.01E-01 1/13/2004 3.48E+00 1.25E+00 4/13/2004 4.88E-02 1.05E+00 7/21/2004 4.46E+00 1.50E+00 Well Number: MW394 Date Collected Result LN(Result) 8/13/2002 6.09E+00 1.81E+00 9/16/2002 3.85E+00 1.35E+00 10/16/2002 5.11E+00 1.63E+00 1/13/2003 3.83E+00 1.34E+00 4/10/2003 4.15E+00 1.42E+00 7/16/2003 1.83E+00 6.04E-01 10/14/2003 3.33E+00 1.20E+00 1/13/2004 3.14E+00 1.14E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Well No.	Gradient	Detected?	Result	Result >TL(1)	2 LN(Result)	LN(Result) > TL(2)
MW220	Upgradient	Yes	3.55E+00	NO	1.27E+00	N/A
MW221	Sidegradient	Yes	4.90E+00	NO	1.59E+00	N/A
MW222	Sidegradient	Yes	4.32E+00	NO	1.46E+00	N/A
MW223	Sidegradient	Yes	2.41E+00	NO	8.80E-01	N/A
MW224	Sidegradient	Yes	4.57E+00	NO	1.52E+00	N/A
MW369	Downgradient	t Yes	3.00E+00	NO	1.10E+00	N/A
MW372	Downgradient	t Yes	1.57E+00	NO	4.51E-01	N/A
MW384	Sidegradient	Yes	4.70E+00	NO	1.55E+00	N/A
MW387	Downgradient	t Yes	4.53E+00	NO	1.51E+00	N/A
MW391	Downgradient	t Yes	5.02E+00	NO	1.61E+00	N/A
MW394	Upgradient	Yes	4.66E+00	NO	1.54E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Dissolved Solids UNITS: mg/L URGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X = 232.688 S = 27.490 CV(1) = 0.118

K factor**= 2.523

TL(1)= 3.02E+02 **LL(1)=**N/A

Statistics-Transformed Background Data

X = 5.443 S = 0.118 CV(2) = 0.022

K factor=** 2.523

TL(2) = 5.74E+00 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW220 Date Collected Result LN(Result) 10/14/2002 2.08E+02 5.34E+00 1/15/2003 2.57E+02 5.55E+00 4/10/2003 2.88E+02 5.66E+00 7/14/2003 2.62E+02 5.57E+00 10/13/2003 1.97E+02 5.28E+00 1/13/2004 1.98E+02 5.29E+00 2.45E+02 4/13/2004 5.50E+00 7/21/2004 2.04E+02 5.32E+00 Well Number: MW394 Date Collected Result LN(Result) 8/13/2002 2.47E+02 5.51E+00 9/16/2002 2.59E+02 5.56E+00 10/16/2002 2.01E+02 5.30E+00 1/13/2003 2.28E+02 5.43E+00 2.49E+02 4/10/2003 5.52E+00 7/16/2003 2.40E+02 5.48E+00 10/14/2003 2.30E+02 5.44E+00 1/13/2004 2.10E+02 5.35E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Well No.	Gradient	Detected?	Result	Result >TL(1)?	LN(Result)	LN(Result) >TL(2
MW220	Upgradient	Yes	2.46E+02	2 NO	5.51E+00	N/A
MW221	Sidegradient	Yes	2.10E+02	2 NO	5.35E+00	N/A
MW222	Sidegradient	Yes	2.18E+02	2 NO	5.38E+00	N/A
MW223	Sidegradient	Yes	2.27E+02	2 NO	5.42E+00	N/A
MW224	Sidegradient	Yes	2.61E+02	2 NO	5.56E+00	N/A
MW369	Downgradien	t Yes	2.13E+02	2 NO	5.36E+00	N/A
MW372	Downgradien	t Yes	4.96E+02	2 YES	6.21E+00	N/A
MW384	Sidegradient	Yes	1.84E+02	2 NO	5.21E+00	N/A
MW387	Downgradien	t Yes	3.00E+02	2 NO	5.70E+00	N/A
MW391	Downgradien	t Yes	1.82E+02	2 NO	5.20E+00	N/A
MW394	Upgradient	Yes	2.17E+02	2 NO	5.38E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to historical background data.

Wells with Exceedances

MW372

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

- S Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Iron UNITS: mg/L URGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 0.897 S= 1.050 CV(1)=1.170 K factor**= 2.523 TL(1)= 3.55E+00 LL(1)=N/A

 Statistics-Transformed Background Data
 X= -0.565 S= 0.951 CV(2)=-1.683 K factor**= 2.523 TL(2)= 1.83E+00 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW220 Date Collected Result LN(Result) 10/14/2002 2.00E-01 -1.61E+00 1/15/2003 2.00E-01 -1.61E+00 4/10/2003 4.29E-01 -8.46E-01 7/14/2003 4.33E+00 1.47E+00 10/13/2003 1.81E+00 5.93E-01 1/13/2004 7.93E-01 -2.32E-01 4/13/2004 1.30E-01 -2.04E+00 7/21/2004 3.82E-01 -9.62E-01 Well Number: MW394 Date Collected Result LN(Result) 8/13/2002 1.34E+00 2.93E-01 9/16/2002 3.28E-01 -1.11E+00 10/16/2002 1.38E+00 3.22E-01 1/13/2003 1.30E+00 2.62E-01 4/10/2003 4.94E-01 -7.05E-01 7/16/2003 6.20E-01 -4.78E-01 10/14/2003 3.70E-01 -9.94E-01 1/13/2004 2.51E-01 -1.38E+00

Because CV(1) is greater than 1, the natural logarithm of background and test well results were calculated utilizing TL(2) for comparison.

Current Quarter Data														
Well No.	Gradient	Detected?	Result	Result >TL(1)? LN(Result)	LN(Result) >TL(2)								
MW220	Upgradient	Yes	3.85E-02	N/A	-3.26E+00	NO								
MW221	Sidegradient	No	1.00E-01	N/A	-2.30E+00	N/A								
MW222	Sidegradient	No	1.00E-01	N/A	-2.30E+00	N/A								
MW223	Sidegradient	Yes	2.77E-01	N/A	-1.28E+00	NO								
MW224	Sidegradient	Yes	5.27E-02	N/A	-2.94E+00	NO								
MW369	Downgradien	t Yes	4.86E-02	N/A	-3.02E+00	NO								
MW372	Downgradien	t Yes	6.80E-02	N/A	-2.69E+00	NO								
MW384	Sidegradient	Yes	5.54E-01	N/A	-5.91E-01	NO								
MW387	Downgradien	t Yes	8.21E-01	N/A	-1.97E-01	NO								
MW391	Downgradien	t Yes	1.25E-01	N/A	-2.08E+00	NO								
MW394	Upgradient	Yes	6.02E-02	N/A	-2.81E+00	NO								
N/A - Resu	lts identified as N	Non-Detects	during lab	oratory analysis	s or data validation	N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not								

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Magnesium UNITS: mg/L URGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 10.796 S= 1.703 CV(1)=0.158 K factor**= 2.523 TL(1)= 1.51E+01 LL(1)=N/A

 Statistics-Transformed Background Data
 X= 2.368 S= 0.158 CV(2)=0.067 K factor**= 2.523 TL(2)= 2.77E+00 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW220 Date Collected Result LN(Result) 10/14/2002 9.16E+00 2.21E+00 1/15/2003 1.00E+01 2.30E+00 4/10/2003 1.08E+01 2.38E+00 7/14/2003 2.69E+00 1.47E+0110/13/2003 9.03E+00 2.20E+00 1/13/2004 8.49E+00 2.14E+00 4/13/2004 9.70E+00 2.27E+00 7/21/2004 8.06E+00 2.09E+00 Well Number: MW394 Date Collected Result LN(Result) 8/13/2002 1.18E+01 2.47E+00 9/16/2002 1.21E+01 2.49E+00 10/16/2002 1.13E+01 2.42E+00 1/13/2003 1.03E+01 2.33E+00 4/10/2003 1.17E+01 2.46E+00 7/16/2003 1.20E+01 2.48E+00 10/14/2003 1.22E+01 2.50E+00 1/13/2004 1.14E+01 2.43E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current	Quarter Data							
Well No.	Gradient	Detected?	Result	Result >TL(1)	? LN(Result)	LN(Result) >TL(2)		
MW220	Upgradient	Yes	1.04E+01	NO	2.34E+00	N/A		
MW221	Sidegradient	Yes	9.39E+00) NO	2.24E+00	N/A		
MW222	Sidegradient	Yes	9.33E+00) NO	2.23E+00	N/A		
MW223	Sidegradient	Yes	9.96E+00) NO	2.30E+00	N/A		
MW224	Sidegradient	Yes	1.14E+01	NO	2.43E+00	N/A		
MW369	Downgradien	t Yes	6.22E+00) NO	1.83E+00	N/A		
MW372	Downgradien	t Yes	2.26E+01	YES	3.12E+00	N/A		
MW384	Sidegradient	Yes	9.62E+00) NO	2.26E+00	N/A		
MW387	Downgradien	t Yes	1.63E+01	YES	2.79E+00	N/A		
MW391	Downgradien	t Yes	1.03E+01	NO	2.33E+00	N/A		
MW394	Upgradient	Yes	1.15E+01	NO	2.44E+00	N/A		
N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not								

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to historical background data.

Wells with Exceedances

MW372 MW387

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Manganese UNITS: mg/L URGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X = 0.287 S = 0.619 CV(1) = 2.156 K factor**= 2.523
 TL(1) = 1.85E + 00 LL(1) = N/A

 Statistics-Transformed Background Data
 X = -2.455 S = 1.619 CV(2) = -0.659 K factor**= 2.523
 TL(2) = 1.63E + 00 LL(2) = N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW220 Date Collected Result LN(Result) 10/14/2002 3.06E-02 -3.49E+00 1/15/2003 2.91E-02 -3.54E+00 4/10/2003 1.37E-02 -4.29E+00 7/14/2003 2.54E+00 9.32E-01 10/13/2003 3.78E-01 -9.73E-01 1/13/2004 1.59E-01 -1.84E+00 4/13/2004 7.07E-03 -4.95E+00 7/21/2004 8.41E-02 -2.48E+00 Well Number: MW394 Date Collected Result LN(Result) 8/13/2002 5.42E-01 -6.12E-01 9/16/2002 1.55E-01 -1.86E+00 10/16/2002 1.03E-01 -2.27E+00 1/13/2003 1.28E-01 -2.06E+00 4/10/2003 5.00E-03 -5.30E+00 2.72E-01 7/16/2003 -1.30E+00 10/14/2003 7.95E-02 -2.53E+00 1/13/2004 6.58E-02 -2.72E+00

Because CV(1) is greater than 1, the natural logarithm of background and test well results were calculated utilizing TL(2) for comparison.

Current Quarter Data									
Well No.	Gradient	Detected?	Result	Result >TL(1	l)? LN(Result)	LN(Result) >TL(2)			
MW220	Upgradient	Yes	2.79E-03	N/A	-5.88E+00	NO			
MW221	Sidegradient	Yes	5.41E-03	N/A	-5.22E+00	NO			
MW222	Sidegradient	Yes	7.69E-03	N/A	-4.87E+00	NO			
MW223	Sidegradient	Yes	2.90E-02	N/A	-3.54E+00	NO			
MW224	Sidegradient	Yes	8.68E-03	N/A	-4.75E+00	NO			
MW369	Downgradien	t Yes	4.23E-03	N/A	-5.47E+00	NO			
MW372	Downgradien	t Yes	4.00E-03	N/A	-5.52E+00	NO			
MW384	Sidegradient	Yes	1.11E-02	N/A	-4.50E+00	NO			
MW387	Downgradien	t Yes	3.33E-02	N/A	-3.40E+00	NO			
MW391	Downgradien	t Yes	2.21E-03	N/A	-6.11E+00	NO			
MW394	Upgradient	Yes	1.56E-03	N/A	-6.46E+00	NO			
N/A - Resu	lts identified as N	Non-Detects	during lab	oratory analysis	or data validation	n and were not			

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Methylene chloride UNITS: ug/L URGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 4.813
 S= 0.750
 CV(1)=0.156
 K factor**= 2.523
 TL(1)= 6.70E+00
 LL(1)=N/A

 Statistics-Transformed Background Data
 X= 1.552
 S= 0.229
 CV(2)=0.148
 K factor**= 2.523
 TL(2)= 2.13E+00
 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW220 Date Collected Result LN(Result) 10/14/2002 5.00E+00 1.61E+00 1/15/2003 5.00E+00 1.61E+00 4/10/2003 5.00E+00 1.61E+00 7/14/2003 5.00E+00 1.61E+00 10/13/2003 5.00E+00 1.61E+00 1/13/2004 5.00E+00 1.61E+00 4/13/2004 5.00E+00 1.61E+00 7/21/2004 5.00E+00 1.61E+00 Well Number: MW394 Date Collected Result LN(Result) 8/13/2002 5.00E+00 1.61E+00 9/30/2002 2.00E+00 6.93E-01 10/16/2002 5.00E+00 1.61E+00 1/13/2003 5.00E+00 1.61E+00 4/10/2003 5.00E+00 1.61E+00 7/16/2003 5.00E+00 1.61E+00 10/14/2003 5.00E+00 1.61E+00 1/13/2004 5.00E+00 1.61E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Well No.	Gradient	Detected?	Result	Result >TL(1)	? LN(Result)	LN(Result) >TL(2)
MW220	Upgradient	No	5.00E+00	N/A	1.61E+00	N/A
MW221	Sidegradient	No	5.00E+00	N/A	1.61E+00	N/A
MW222	Sidegradient	No	5.00E+00	N/A	1.61E+00	N/A
MW223	Sidegradient	No	5.00E+00	N/A	1.61E+00	N/A
MW224	Sidegradient	No	5.00E+00	N/A	1.61E+00	N/A
MW369	Downgradien	t No	5.00E+00	N/A	1.61E+00	N/A
MW372	Downgradien	t No	5.00E+00	N/A	1.61E+00	N/A
MW384	Sidegradient	No	5.00E+00	N/A	1.61E+00	N/A
MW387	Downgradien	t Yes	7.90E-01	NO	-2.36E-01	N/A
MW391	Downgradien	t No	5.00E+00	N/A	1.61E+00	N/A
MW394	Upgradient	No	5.00E+00	N/A	1.61E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Molybdenum UNITS: mg/L URGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 0.006
 S= 0.008
 CV(1)=1.261
 K factor**= 2.523
 TL(1)= 2.64E-02
 LL(1)=N/A

 Statistics-Transformed Background Data
 X= -5.747
 S= 1.205
 CV(2)=-0.210
 K factor**= 2.523
 TL(2)= -2.71E+00
 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW220 Date Collected Result LN(Result) 10/14/2002 5.58E-03 -5.19E+00 1/15/2003 9.83E-03 -4.62E+00 4/10/2003 1.09E-02 -4.52E+00 7/14/2003 2.45E-03 -6.01E+00 10/13/2003 5.66E-03 -5.17E+00 1/13/2004 5.72E-03 -5.16E+00 4/13/2004 1.00E-03 -6.91E+00 7/21/2004 3.92E-03 -5.54E+00 Well Number: MW394 Date Collected Result LN(Result) 8/13/2002 2.50E-02 -3.69E+00 9/16/2002 2.50E-02 -3.69E+00 10/16/2002 1.00E-03 -6.91E+00 1/13/2003 1.00E-03 -6.91E+00 4/10/2003 1.00E-03 -6.91E+00 7/16/2003 1.00E-03 -6.91E+00 10/14/2003 1.00E-03 -6.91E+00 1/13/2004 1.00E-03 -6.91E+00

Because CV(1) is greater than 1, the natural logarithm of background and test well results were calculated utilizing TL(2) for comparison.

Current Quarter Data									
Well No.	Gradient	Detected?	Result	Result >TL(1)? LN(Result)	LN(Result) >TL(2)			
MW220	Upgradient	Yes	1.31E-03	N/A	-6.64E+00	NO			
MW221	Sidegradient	Yes	6.54E-03	N/A	-5.03E+00	NO			
MW222	Sidegradient	Yes	4.84E-03	N/A	-5.33E+00	NO			
MW223	Sidegradient	Yes	3.23E-03	N/A	-5.74E+00	NO			
MW224	Sidegradient	Yes	9.86E-04	N/A	-6.92E+00	NO			
MW369	Downgradien	t No	1.00E-03	N/A	-6.91E+00	N/A			
MW372	Downgradien	t Yes	3.12E-04	N/A	-8.07E+00	NO			
MW384	Sidegradient	No	1.00E-03	N/A	-6.91E+00	N/A			
MW387	Downgradien	t No	1.00E-03	N/A	-6.91E+00	N/A			
MW391	Downgradien	t No	1.00E-03	N/A	-6.91E+00	N/A			
MW394	Upgradient	No	1.00E-03	N/A	-6.91E+00	N/A			
N/A - Resu	lts identified as N	Ion-Detects	during lab	oratory analysis	or data validation	n and were not			

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Nickel UNITS: mg/L URGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X = 0.127 S = 0.228 CV(1) = 1.790 K factor** = 2.523
 TL(1) = 7.01E-01 LL(1) = N/A

 Statistics-Transformed Background Data
 X = -3.617 S = 1.837 CV(2) = -0.508 K factor** = 2.523
 TL(2) = 1.02E+00 LL(2) = N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW220 Date Collected Result LN(Result) 10/14/2002 4.18E-01 -8.72E-01 1/15/2003 7.38E-01 -3.04E-01 4/10/2003 5.44E-01 -6.09E-01 7/14/2003 1.06E-01 -2.24E+00 10/13/2003 5.29E-02 -2.94E+00 1/13/2004 2.09E-02 -3.87E+00 4/13/2004 5.00E-03 -5.30E+00 7/21/2004 1.92E-02 -3.95E+00 Well Number: MW394 Date Collected Result LN(Result) 8/13/2002 5.00E-02 -3.00E+00 9/16/2002 5.00E-02 -3.00E+00 10/16/2002 5.00E-03 -5.30E+00 1/13/2003 5.00E-03 -5.30E+00 4/10/2003 5.00E-03 -5.30E+00 7/16/2003 5.00E-03 -5.30E+00 10/14/2003 5.00E-03 -5.30E+00 1/13/2004 5.00E-03 -5.30E+00

Because CV(1) is greater than 1, the natural logarithm of background and test well results were calculated utilizing TL(2) for comparison.

Current Quarter Data									
Well No.	Gradient	Detected?	Result	Result >TL(1)? LN(Result)	LN(Result) >TL(2)			
MW220	Upgradient	Yes	6.49E-03	N/A	-5.04E+00	NO			
MW221	Sidegradient	Yes	1.20E-01	N/A	-2.12E+00	NO			
MW222	Sidegradient	Yes	4.46E-02	N/A	-3.11E+00	NO			
MW223	Sidegradient	Yes	6.31E-01	N/A	-4.60E-01	NO			
MW224	Sidegradient	Yes	1.03E-02	N/A	-4.58E+00	NO			
MW369	Downgradien	t Yes	4.32E-03	N/A	-5.44E+00	NO			
MW372	Downgradien	t Yes	9.37E-04	N/A	-6.97E+00	NO			
MW384	Sidegradient	Yes	9.12E-04	N/A	-7.00E+00	NO			
MW387	Downgradien	t Yes	1.17E-03	N/A	-6.75E+00	NO			
MW391	Downgradien	t No	2.00E-03	N/A	-6.21E+00	N/A			
MW394	Upgradient	Yes	8.11E-03	N/A	-4.81E+00	NO			
N/A - Resu	lts identified as N	Ion-Detects	during lab	oratory analysis	or data validation	n and were not			

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Oxidation-Reduction Potential UNITS: mV URGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X = 179.872 S = 86.318 CV(1) = 0.480

K factor**= 2.523

TL(1)= 3.98E+02 LL(1)=N/A

Statistics-Transformed Background Data

X = 4.861 S = 1.252 CV(2) = 0.258

K factor**= 2.523

TL(2) = 8.02E + 00 LL(2) = N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW220 Date Collected Result LN(Result) 10/14/2002 2.05E+02 5.32E+00 1/15/2003 1.95E+00 6.68E-01 4/10/2003 2.03E+02 5.31E+00 7/14/2003 3.00E+01 3.40E+00 10/13/2003 1.07E+02 4.67E+00 1/13/2004 2.95E+02 5.69E+00 4/13/2004 1.90E+02 5.25E+00 7/21/2004 3.19E+02 5.77E+00 Well Number: MW394 Date Collected Result LN(Result) 8/13/2002 9.00E+01 4.50E+00 9/16/2002 2.40E+02 5.48E+00 10/16/2002 1.85E+02 5.22E+00 1/13/2003 2.20E+02 5.39E+00 4/10/2003 1.96E+02 5.28E+00 7/16/2003 1.72E+02 5.15E+00 10/14/2003 1.75E+02 5.16E+00 1/13/2004 2.49E+02 5.52E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

C	ırrent	Quarter	Data

D 4

Well No.	Gradient	Detected?	Result	Result >TL(1)	2 LN(Result)	LN(Result) >TL(2)
MW220	Upgradient	Yes	3.92E+02	2 NO	5.97E+00	N/A
MW221	Sidegradient	Yes	4.39E+02	YES	6.08E+00	N/A
MW222	Sidegradient	Yes	3.83E+02	2 NO	5.95E+00	N/A
MW223	Sidegradient	Yes	4.19E+02	YES	6.04E+00	N/A
MW224	Sidegradient	Yes	3.91E+02	2 NO	5.97E+00	N/A
MW369	Downgradien	t Yes	4.62E+02	2 YES	6.14E+00	N/A
MW372	Downgradien	t Yes	4.52E+02	YES	6.11E+00	N/A
MW384	Sidegradient	Yes	4.28E+02	YES	6.06E+00	N/A
MW387	Downgradien	t Yes	4.13E+02	YES	6.02E+00	N/A
MW391	Downgradien	t Yes	3.73E+02	2 NO	5.92E+00	N/A
MW394	Upgradient	Yes	4.04E+02	YES	6.00E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to historical background data.

Wells with Exceed	lances
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MW221 MW223

MW369 MW372

MW384

MW387

MW394

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison pH UNITS: Std Unit URGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 6.138
 S= 0.282
 CV(1)=0.046
 K factor**= 2.904
 TL(1)= 6.96E+00
 LL(1)=5.32E+00

 Statistics-Transformed Background Data
 X= 1.813
 S= 0.047
 CV(2)=0.026
 K factor**= 2.904
 TL(2)= 1.95E+00
 LL(2)=1.68E+00

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW220 Date Collected Result LN(Result) 10/14/2002 6.04E+001.80E+00 1/15/2003 6.31E+00 1.84E+00 4/10/2003 6.50E+00 1.87E+00 7/14/2003 6.30E+00 1.84E+00 10/13/2003 6.34E+00 1.85E+00 1/13/2004 6.33E+00 1.85E+00 4/13/2004 6.30E+00 1.84E+00 7/21/2004 5.90E+00 1.77E+00 Well Number: MW394 Date Collected Result LN(Result) 8/13/2002 5.80E+00 1.76E+00 9/30/2002 5.93E+00 1.78E+00 10/16/2002 5.42E+00 1.69E+00 1/13/2003 6.00E+00 1.79E+00 4/10/2003 6.04E+00 1.80E+00 7/16/2003 6.20E+00 1.82E+00 10/14/2003 6.40E+001.86E+00 1/13/2004 6.39E+00 1.85E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current	Quarter	Data
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Wel	l No.	Gradient	Detected?	Result	Result >T Result <l< th=""><th></th><th>LN(Result) >TL(2)? LN(Result) <ll(2)?< th=""></ll(2)?<></th></l<>		LN(Result) >TL(2)? LN(Result) <ll(2)?< th=""></ll(2)?<>
MV	V220	Upgradient	Yes	6.23E+00	NO	1.83E+00	N/A
MV	V221	Sidegradient	Yes	6.22E+00	NO	1.83E+00	N/A
MV	V222	Sidegradient	Yes	6.10E+00	NO	1.81E+00	N/A
MV	V223	Sidegradient	Yes	6.03E+00	NO	1.80E+00	N/A
MV	V224	Sidegradient	Yes	6.11E+00	NO	1.81E+00	N/A
MV	V369	Downgradien	t Yes	6.06E+00	NO	1.80E+00	N/A
MV	V372	Downgradien	t Yes	6.06E+00	NO	1.80E+00	N/A
MV	V384	Sidegradient	Yes	6.11E+00	NO	1.81E+00	N/A
MV	V387	Downgradien	t Yes	6.19E+00	NO	1.82E+00	N/A
MV	V391	Downgradien	t Yes	6.13E+00	NO	1.81E+00	N/A
MV	V394	Upgradient	Yes	6.03E+00	NO	1.80E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5

TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Potassium UNITS: mg/L URGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 6.654
 S= 9.310
 CV(1)=1.399
 K factor**= 2.523
 TL(1)= 3.01E+01
 LL(1)=N/A

 Statistics-Transformed Background Data
 X= 1.130
 S= 1.208
 CV(2)=1.069
 K factor**= 2.523
 TL(2)= 4.18E+00
 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW220 Date Collected Result LN(Result) 10/14/2002 6.70E + 001.90E+00 1/15/2003 2.97E+01 3.39E+00 4/10/2003 2.49E+01 3.21E+00 7/14/2003 1.13E+00 1.22E-01 10/13/2003 3.43E+00 1.23E+00 1/13/2004 6.71E+00 1.90E+00 1.93E+01 4/13/2004 2.96E+00 7/21/2004 3.97E+00 1.38E+00 Well Number: MW394 Date Collected Result LN(Result) 8/13/2002 2.00E+00 6.93E-01 9/16/2002 2.00E+00 6.93E-01 10/16/2002 1.03E+00 2.96E-02 1/13/2003 1.10E+00 9.53E-02 4/10/2003 1.24E+00 2.15E-01 7/16/2003 1.14E+00 1.31E-01 10/14/2003 1.05E+00 4.88E-02 1/13/2004 1.07E+00 6.77E-02

Because CV(1) is greater than 1, the natural logarithm of background and test well results were calculated utilizing TL(2) for comparison.

Current Quarter Data									
Well No.	Gradient	Detected?	Result	Result >TL(1)	? LN(Result)	LN(Result) >TL(2)			
MW220	Upgradient	Yes	1.10E+01	N/A	2.40E+00	NO			
MW221	Sidegradient	Yes	2.32E+00) N/A	8.42E-01	NO			
MW222	Sidegradient	Yes	8.08E-01	N/A	-2.13E-01	NO			
MW223	Sidegradient	Yes	1.18E+00) N/A	1.66E-01	NO			
MW224	Sidegradient	Yes	1.06E+00) N/A	5.83E-02	NO			
MW369	Downgradien	t Yes	4.99E-01	N/A	-6.95E-01	NO			
MW372	Downgradien	t Yes	2.26E+00) N/A	8.15E-01	NO			
MW384	Sidegradient	Yes	1.33E+00) N/A	2.85E-01	NO			
MW387	Downgradien	t Yes	1.82E+00) N/A	5.99E-01	NO			
MW391	Downgradien	t Yes	1.41E+00) N/A	3.44E-01	NO			
MW394	Upgradient	Yes	1.57E+00) N/A	4.51E-01	NO			
N/A - Resu	lts identified as N	Non-Detects	during lab	oratory analysis c	or data validation	n and were not			

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5

TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Radium-226 UNITS: pCi/L URGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 0.036 S= 0.382 CV(1)=10.588 K factor**= 2.523 TL(1)= 1.00E+00 LL(1)=N/A

 Statistics-Transformed Background Data
 X= -1.873 S= 1.110 CV(2)=-0.592 K factor**= 2.523 TL(2)=-5.38E-01 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW220 Date Collected Result LN(Result) 10/14/2002 -8.04E-01 #Func! 1/15/2003 0.00E+00#Func! -9.44E-01 10/13/2003 3.89E-01 1/13/2004 -1.20E-01 #Func! 4/13/2004 1.59E-01 -1.84E+00 7/21/2004 3.82E-01 -9.62E-01 10/11/2004 2.11E-01 -1.56E+00 1/20/2005 2.29E-01 -1.47E+00 Well Number: MW394 Date Collected Result LN(Result) 5.84E-01 10/16/2002 -5.38E-01 1/13/2003 -8.39E-01 #Func! 10/14/2003 3.25E-02 -3.43E+00 1/13/2004 -4.02E-03 #Func! -3.37E-04 4/12/2004 #Func! 2.90E-01 7/20/2004 -1.24E+00 10/12/2004 3.66E-02 -3.31E+00 1/18/2005 3.19E-02 -3.45E+00

Because CV(1) is greater than 1, the natural logarithm of background and test well results were calculated utilizing TL(2) for comparison.

#Because the natural log was not possible for all background values, the TL was considered equal to the maximum background value.

Current	Quarter Data					
Well No.	Gradient	Detected?	Result	Result >TL(1))? LN(Result)	LN(Result) >TL(2)
MW220	Upgradient	No	6.00E-01	N/A	-5.11E-01	N/A
MW221	Sidegradient	Yes	1.07E+00	N/A	6.77E-02	YES
MW222	Sidegradient	No	1.68E-01	N/A	-1.78E+00	N/A
MW223	Sidegradient	No	2.41E-01	N/A	-1.42E+00	N/A
MW224	Sidegradient	No	1.13E-01	N/A	-2.18E+00	N/A
MW369	Downgradien	t No	3.77E-01	N/A	-9.76E-01	N/A
MW372	Downgradien	t No	1.57E-02	N/A	-4.15E+00	N/A
MW384	Sidegradient	Yes	1.08E+00	N/A	7.70E-02	YES
MW387	Downgradien	t No	8.92E-01	N/A	-1.14E-01	N/A
MW391	Downgradien	t No	4.11E-01	N/A	-8.89E-01	N/A
MW394	Upgradient	No	4.48E-01	N/A	-8.03E-01	N/A
N/A - Resu	lts identified as N	Jon-Detects	during labo	oratory analysis	or data validatio	n and were not

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to historical background data.

Wells with Exceedances

MW221 MW384

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Sodium UNITS: mg/L URGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 36.363
 S= 8.666
 CV(1)=0.238
 K factor**= 2.523
 TL(1)= 5.82E+01
 LL(1)=N/A

 Statistics-Transformed Background Data
 X= 3.570
 S= 0.222
 CV(2)=0.062
 K factor**= 2.523
 TL(2)= 4.13E+00
 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW220 Date Collected Result LN(Result) 10/14/2002 3.54E+01 3.57E+00 1/15/2003 4.06E+01 3.70E+00 4/10/2003 5.10E+01 3.93E+00 7/14/2003 5.82E+01 4.06E+00 10/13/2003 3.81E+01 3.64E+00 1/13/2004 3.70E+01 3.61E+00 4.32E+01 4/13/2004 3.77E+00 7/21/2004 3.38E+01 3.52E+00 Well Number: MW394 Date Collected Result LN(Result) 8/13/2002 3.29E+01 3.49E+00 9/16/2002 2.99E+01 3.40E+00 10/16/2002 2.90E+01 3.37E+00 1/13/2003 2.71E+01 3.30E+00 4/10/2003 2.48E+01 3.21E+00 7/16/2003 3.56E+01 3.57E+00 10/14/2003 3.39E+01 3.52E+00 1/13/2004 3.13E+01 3.44E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current Quarter Data									
Well No.	Gradient	Detected?	Result	Result >TL(1)? LN(Result)	LN(Result) >TL(2)			
MW220	Upgradient	Yes	4.60E+01	NO	3.83E+00	N/A			
MW221	Sidegradient	Yes	4.53E+01	NO	3.81E+00	N/A			
MW222	Sidegradient	Yes	4.63E+01	NO	3.84E+00	N/A			
MW223	Sidegradient	Yes	4.62E+01	NO	3.83E+00	N/A			
MW224	Sidegradient	Yes	5.83E+01	YES	4.07E+00	N/A			
MW369	Downgradien	t Yes	4.84E+01	NO	3.88E+00	N/A			
MW372	Downgradien	t Yes	5.77E+01	NO	4.06E+00	N/A			
MW384	Sidegradient	Yes	4.37E+01	NO	3.78E+00	N/A			
MW387	Downgradien	t Yes	4.86E+01	NO	3.88E+00	N/A			
MW391	Downgradien	t Yes	3.14E+01	NO	3.45E+00	N/A			
MW394	Upgradient	Yes	3.32E+01	NO	3.50E+00	N/A			
N/A - Resu	lts identified as N	Non-Detects	during lab	oratory analysi	s or data validation	n and were not			

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to historical background data.

Wells with Exceedances

MW224

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis **Historical Background Comparison Sulfate** UNITS: mg/L **URGA**

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

X = 10.481 S = 2.648CV(1)=0.253**K factor**=** 2.523 **TL(1)**= 1.72E+01 **LL(1)**=N/A **Statistics-Background Data Statistics-Transformed** X = 2.322CV(2) = 0.103**K factor**=** 2.523 TL(2)= 2.92E+00 LL(2)=N/AS = 0.239**Background Data**

Historical Background Data from **Upgradient Wells with Transformed Result**

Well Number: MW220 Date Collected Result LN(Result) 10/14/2002 1.04E+01 2.34E+00 1/15/2003 9.80E+00 2.28E+00 4/10/2003 1.54E+01 2.73E+00 7/14/2003 1.49E+01 2.70E+00 10/13/2003 1.35E+01 2.60E+00 1/13/2004 1.03E+01 2.33E+00 4/13/2004 1.43E+01 2.66E+00 7/21/2004 1.05E+01 2.35E+00 Well Number: MW394 Date Collected Result LN(Result) 8/13/2002 1.12E+01 2.42E+00 9/16/2002 8.30E+00 2.12E+00 10/16/2002 8.00E+00 2.08E+00 1/13/2003 8.50E+00 2.14E+00 4/10/2003 7.90E+00 2.07E+00 7/16/2003 8.40E+00 2.13E+00 10/14/2003 8.20E+00 2.10E+001/13/2004 8.10E+00 2.09E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current	Quarter Data					
Well No.	Gradient	Detected?	Result	Result >TL(1)? LN(Result)	LN(Result) >TL(2)
MW220	Upgradient	Yes	2.16E+01	YES	3.07E+00	N/A
MW221	Sidegradient	Yes	1.61E+01	NO	2.78E+00	N/A
MW222	Sidegradient	Yes	1.25E+01	NO	2.53E+00	N/A
MW223	Sidegradient	Yes	1.45E+01	NO	2.67E+00	N/A
MW224	Sidegradient	Yes	1.93E+01	YES	2.96E+00	N/A
MW369	Downgradien	t Yes	7.92E+00) NO	2.07E+00	N/A
MW372	Downgradien	t Yes	1.64E+02	YES	5.10E+00	N/A
MW384	Sidegradient	Yes	1.79E+01	YES	2.88E+00	N/A
MW387	Downgradien	t Yes	2.73E+01	YES	3.31E+00	N/A
MW391	Downgradien	t Yes	1.22E+01	NO	2.50E+00	N/A
MW394	Upgradient	Yes	1.17E+01	NO	2.46E+00	N/A
N/A - Resu	lts identified as N	Jon-Detects	during lab	oratory analysis	or data validatio	n and were not

included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to historical background data.

Wells with Exceedances

MW220 MW224

MW372 MW384

MW387

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

- Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5 S
- Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)
- Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009. D1-53

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Technetium-99 UNITS: pCi/L URGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 9.354 S= 9.280 CV(1)=0.992 K factor**= 2.523 TL(1)= 3.28E+01 LL(1)=N/A

 Statistics-Transformed Background Data
 X= 2.270 S= 0.849 CV(2)=0.374 K factor**= 2.523 TL(2)= 3.26E+00 LL(2)=N/A

Dackground Data

Historical Background Data from Upgradient Wells with Transformed Result

Well Number:	MW220	
Date Collected	Result	LN(Result)
10/14/2002	1.97E+01	2.98E+00
1/15/2003	2.61E+01	3.26E+00
4/10/2003	3.56E+00	1.27E+00
7/14/2003	0.00E+00	#Func!
10/13/2003	2.10E+01	3.04E+00
1/13/2004	6.32E+00	1.84E+00
4/13/2004	3.00E+00	1.10E+00
7/21/2004	1.46E+01	2.68E+00
Well Number:	MW394	
Well Number: Date Collected	MW394 Result	LN(Result)
		LN(Result) 2.64E+00
Date Collected	Result	
Date Collected 8/13/2002	Result 1.40E+01	2.64E+00
Date Collected 8/13/2002 9/16/2002	Result 1.40E+01 5.45E+00	2.64E+00 1.70E+00
Date Collected 8/13/2002 9/16/2002 10/16/2002	Result 1.40E+01 5.45E+00 2.49E+00	2.64E+00 1.70E+00 9.12E-01
Date Collected 8/13/2002 9/16/2002 10/16/2002 1/13/2003	Result 1.40E+01 5.45E+00 2.49E+00 1.83E+01	2.64E+00 1.70E+00 9.12E-01 2.91E+00
Date Collected 8/13/2002 9/16/2002 10/16/2002 1/13/2003 4/10/2003	Result 1.40E+01 5.45E+00 2.49E+00 1.83E+01 -1.45E+00	2.64E+00 1.70E+00 9.12E-01 2.91E+00 #Func!

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

#Because the natural log was not possible for all background values, the TL was considered equal to the maximum background value.

Current	Quarter Data					
Well No.	Gradient	Detected?	Result	Result >TL(1)? LN(Result)	LN(Result) >TL(2)
MW220	Upgradient	No	2.79E+00) N/A	1.03E+00	N/A
MW221	Sidegradient	No	1.01E+01	N/A	2.31E+00	N/A
MW222	Sidegradient	No	5.16E+00	N/A	1.64E+00	N/A
MW223	Sidegradient	No	8.67E+00	N/A	2.16E+00	N/A
MW224	Sidegradient	No	5.55E+00	N/A	1.71E+00	N/A
MW369	Downgradien	t Yes	4.27E+01	YES	3.75E+00	N/A
MW372	Downgradien	t No	1.75E+01	N/A	2.86E+00	N/A
MW384	Sidegradient	Yes	4.76E+01	YES	3.86E+00	N/A
MW387	Downgradien	t Yes	3.46E+01	YES	3.54E+00	N/A
MW391	Downgradien	t No	9.87E+00	N/A	2.29E+00	N/A
MW394	Upgradient	No	6.82E+00	N/A	1.92E+00	N/A
N/A - Resu	lts identified as N	lon-Detects	during lab	oratory analysi	s or data validation	n and were not

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to historical background data.

Wells with Exceedances

MW369 MW384 MW387

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

- S Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Total Organic Carbon (TOC) UNITS: mg/L URGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data	X = 1.494	S = 0.737	CV(1)= 0.493	K factor**= 2.523	TL(1)= 3.35E+00 LL(1)=N/A
Statistics-Transformed	X = 0.315	S = 0.402	CV(2)= 1.279	K factor**= 2.523	TL(2)= 1.33E+00 LL(2)= N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW220 Date Collected Result LN(Result) 10/14/2002 1.00E+00 0.00E+001/15/2003 1.10E+00 9.53E-02 4/10/2003 1.00E+00 0.00E+007/14/2003 3.30E+00 1.19E+00 10/13/2003 1.80E+00 5.88E-01 1/13/2004 1.00E+00 0.00E+002.00E+00 4/13/2004 6.93E-01 7/21/2004 3.10E+00 1.13E+00 Well Number: MW394 Date Collected Result LN(Result) 8/13/2002 1.30E+00 2.62E-01 9/16/2002 1.00E+00 0.00E+0010/16/2002 1.00E+00 0.00E+001/13/2003 1.60E+00 4.70E-01 4/10/2003 1.00E+00 0.00E+007/16/2003 1.40E+00 3.36E-01 10/14/2003 1.30E+00 2.62E-01 1/13/2004 1.00E+00 0.00E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current Quarter Data								
Well No.	Gradient	Detected?	Result	Result >TL	(1)? LN(Result)	LN(Result) >TL(2)		
MW220	Upgradient	Yes	7.58E-01	NO	-2.77E-01	N/A		
MW221	Sidegradient	Yes	6.52E-01	NO	-4.28E-01	N/A		
MW222	Sidegradient	Yes	3.95E-01	NO	-9.29E-01	N/A		
MW223	Sidegradient	Yes	4.55E-01	NO	-7.87E-01	N/A		
MW224	Sidegradient	Yes	7.99E-01	NO	-2.24E-01	N/A		
MW369	Downgradien	t Yes	7.57E-01	NO	-2.78E-01	N/A		
MW372	Downgradien	t Yes	7.98E-01	NO	-2.26E-01	N/A		
MW384	Sidegradient	Yes	8.13E-01	NO	-2.07E-01	N/A		
MW387	Downgradien	t Yes	8.87E-01	NO	-1.20E-01	N/A		
MW391	Downgradien	t Yes	4.62E-01	NO	-7.72E-01	N/A		
MW394	Upgradient	Yes	5.90E-01	NO	-5.28E-01	N/A		
	N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCI's where the result for a							

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis **Historical Background Comparison URGA Total Organic Halides (TOX)** UNITS: ug/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

X = 63.475 S = 163.135 CV(1) = 2.570**K factor**=** 2.523 TL(1) = 4.75E + 02 LL(1) = N/A**Statistics-Background Data Statistics-Transformed** X = 3.103 S = 1.145CV(2) = 0.369**K factor**=** 2.523 TL(2) = 5.99E + 00 LL(2) = N/A**Background Data**

Historical Background Data from **Upgradient Wells with Transformed Result**

Well Number: MW220 Date Collected Result LN(Result) 10/14/2002 5.00E+01 3.91E+00 1/15/2003 1.00E+01 2.30E+00 4/10/2003 1.00E+01 2.30E+00 7/14/2003 1.00E+01 2.30E+00 10/13/2003 1.00E+01 2.30E+00 1/13/2004 1.00E+01 2.30E+00 4/13/2004 1.00E+01 2.30E+00 7/21/2004 1.00E+01 2.30E+00 Well Number: MW394 Date Collected Result LN(Result) 8/13/2002 5.00E+01 3.91E+00 9/16/2002 6.72E+02 6.51E+00 10/16/2002 5.00E+01 3.91E+00 1/13/2003 3.61E+01 3.59E+00 4/10/2003 1.00E+01 2.30E+00 7/16/2003 4.27E+01 3.75E+00 10/14/2003 2.20E+01 3.09E+00 1/13/2004 1.28E+01 2.55E+00

Because CV(1) is greater than 1, the natural logarithm of background and test well results were calculated utilizing TL(2) for comparison.

Current	Quarter Data					
Well No.	Gradient	Detected?	Result	Result >TL(1)? LN(Result)	LN(Result) >TL(2)
MW220	Upgradient	Yes	7.16E+00) N/A	1.97E+00	NO
MW221	Sidegradient	Yes	3.64E+00	N/A	1.29E+00	NO
MW222	Sidegradient	Yes	1.71E+01	N/A	2.84E+00	NO
MW223	Sidegradient	Yes	7.18E+00	N/A	1.97E+00	NO
MW224	Sidegradient	Yes	1.31E+01	N/A	2.57E+00	NO
MW369	Downgradien	t Yes	1.83E+01	N/A	2.91E+00	NO
MW372	Downgradien	t Yes	6.46E+00	N/A	1.87E+00	NO
MW384	Sidegradient	Yes	8.58E+00	N/A	2.15E+00	NO
MW387	Downgradien	t Yes	7.58E+00	N/A	2.03E+00	NO
MW391	Downgradien	t Yes	2.10E+01	N/A	3.04E+00	NO
MW394	Upgradient	Yes	8.76E+00	N/A	2.17E+00	NO
			_		s or data validation	n and were not

included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

CVCoefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5 S

Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009. D1-56

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Vanadium UNITS: mg/L URGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X = 0.021 S = 0.002 CV(1) = 0.083 K factor** = 2.523
 TL(1) = 2.49E-02 LL(1) = N/A

 Statistics-Transformed Background Data
 X = -3.884 S = 0.076 CV(2) = -0.020 K factor** = 2.523
 TL(2) = -3.69E+00 LL(2) = N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW220 Date Collected Result LN(Result) 10/14/2002 2.00E-02 -3.91E+00 1/15/2003 2.00E-02 -3.91E+00 4/10/2003 2.00E-02 -3.91E+00 7/14/2003 2.00E-02 -3.91E+00 10/13/2003 2.00E-02 -3.91E+00 1/13/2004 2.00E-02 -3.91E+00 4/13/2004 2.00E-02 -3.91E+00 7/21/2004 2.00E-02 -3.91E+00 Well Number: MW394 Date Collected Result LN(Result) 8/13/2002 2.50E-02 -3.69E+00 9/16/2002 2.50E-02 -3.69E+00 10/16/2002 2.00E-02 -3.91E+00 1/13/2003 2.00E-02 -3.91E+00 2.00E-02 4/10/2003 -3.91E+00 2.00E-02 7/16/2003 -3.91E+00 10/14/2003 2.00E-02 -3.91E+00 1/13/2004 2.00E-02 -3.91E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current	Quarter Data					
Well No.	Gradient	Detected?	Result	Result >TL(1)? LN(Result)	LN(Result) >TL(2)
MW220	Upgradient	No	2.00E-02	N/A	-3.91E+00	N/A
MW221	Sidegradient	No	2.00E-02	N/A	-3.91E+00	N/A
MW222	Sidegradient	Yes	4.74E-03	NO	-5.35E+00	N/A
MW223	Sidegradient	Yes	5.16E-03	NO	-5.27E+00	N/A
MW224	Sidegradient	Yes	3.54E-03	NO	-5.64E+00	N/A
MW369	Downgradien	t No	2.00E-02	N/A	-3.91E+00	N/A
MW372	Downgradien	t No	2.00E-02	N/A	-3.91E+00	N/A
MW384	Sidegradient	No	2.00E-02	N/A	-3.91E+00	N/A
MW387	Downgradien	t No	2.00E-02	N/A	-3.91E+00	N/A
MW391	Downgradien	t No	2.00E-02	N/A	-3.91E+00	N/A
MW394	Upgradient	No	2.00E-02	N/A	-3.91E+00	N/A
N/A - Resu	lts identified as N	Ion-Detects	during lab	oratory analysis	or data validation	n and were not

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis **Historical Background Comparison** UNITS: mg/L **URGA** Zinc

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

X = 0.036S = 0.026CV(1)=0.722**K** factor**= 2.523 **TL(1)**= 1.01E-01 **LL(1)**=N/A **Statistics-Background Data Statistics-Transformed** X = -3.485 S = 0.525CV(2) = -0.151**K factor**=** 2.523 TL(2) = -2.16E+00 LL(2)=N/A

Background Data

Historical Background Data from **Upgradient Wells with Transformed Result**

Well Number: MW220 Date Collected Result LN(Result) 10/14/2002 2.50E-02 -3.69E+00 1/15/2003 3.50E-02 -3.35E+00 4/10/2003 3.50E-02 -3.35E+00 7/14/2003 3.89E-02 -3.25E+00 10/13/2003 2.60E-02 -3.65E+00 1/13/2004 2.00E-02 -3.91E+00 4/13/2004 2.00E-02 -3.91E+00 7/21/2004 2.00E-02 -3.91E+00 Well Number: MW394 Date Collected Result LN(Result) 8/13/2002 1.00E-01 -2.30E+00 9/16/2002 1.00E-01 -2.30E+00 10/16/2002 2.50E-02 -3.69E+00 1/13/2003 3.50E-02 -3.35E+00 4/10/2003 3.50E-02 -3.35E+00 7/16/2003 2.00E-02 -3.91E+00 10/14/2003 2.00E-02 -3.91E+00 1/13/2004 2.00E-02 -3.91E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current	Quarter Data					
Well No.	Gradient	Detected?	Result	Result >TL(1)? LN(Result)	LN(Result) >TL(2)
MW220	Upgradient	Yes	5.43E-03	NO	-5.22E+00	N/A
MW221	Sidegradient	Yes	1.04E-02	NO	-4.57E+00	N/A
MW222	Sidegradient	Yes	8.50E-03	NO	-4.77E+00	N/A
MW223	Sidegradient	Yes	5.03E-03	NO	-5.29E+00	N/A
MW224	Sidegradient	No	2.00E-02	N/A	-3.91E+00	N/A
MW369	Downgradien	t Yes	6.76E-03	NO	-5.00E+00	N/A
MW372	Downgradien	t No	2.00E-02	N/A	-3.91E+00	N/A
MW384	Sidegradient	Yes	4.23E-03	NO	-5.47E+00	N/A
MW387	Downgradien	t Yes	7.30E-03	NO	-4.92E+00	N/A
MW391	Downgradien	t No	2.00E-02	N/A	-3.91E+00	N/A
MW394	Upgradient	Yes	3.57E-03	NO	-5.64E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

CVCoefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5 S

Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009. D1-58

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Aluminum UNITS: mg/L LRGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 0.258
 S= 0.221
 CV(1)=0.856
 K factor**= 2.523
 TL(1)= 8.15E-01
 LL(1)=N/A

 Statistics-Transformed Background Data
 X= -2.266
 S= 2.485
 CV(2)=-1.097
 K factor**= 2.523
 TL(2)= 4.00E+00
 LL(2)=N/A

MW397 Upgradient

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW395 Date Collected Result LN(Result) 8/13/2002 2.00E-01 -1.61E+00 9/16/2002 2.00E-01 -1.61E+00 10/16/2002 2.00E-04 -8.52E+00 1/13/2003 7.37E-01 -3.05E-01 4/10/2003 2.00E-01 -1.61E+00 7/16/2003 2.00E-01 -1.61E+00 10/14/2003 2.00E-01 -1.61E+00 1/13/2004 2.00E-01 -1.61E+00 Well Number: MW397 Date Collected Result LN(Result) 8/13/2002 8.24E-01 -1.94E-01 9/16/2002 2.00E-01 -1.61E+00 10/17/2002 2.00E-04 -8.52E+00 1/13/2003 3.63E-01 -1.01E+00 4/8/2003 2.00E-01 -1.61E+00 7/16/2003 2.00E-01 -1.61E+00 10/14/2003 2.00E-01 -1.61E+00 1/13/2004 2.00E-01 -1.61E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

-1.58E+00

N/A

Current Quarter Data							
Well No.	Gradient	Detected?	Result	Result >TL(1)	? LN(Result)	LN(Result) >TL(2)	
MW370	Downgradien	t Yes	8.14E-01	NO	-2.06E-01	N/A	
MW373	Downgradien	t Yes	1.98E-02	NO	-3.92E+00	N/A	
MW385	Sidegradient	No	5.00E-02	N/A	-3.00E+00	N/A	
MW388	Downgradien	t Yes	5.18E-02	NO	-2.96E+00	N/A	
MW392	Downgradien	t Yes	2.19E-02	NO	-3.82E+00	N/A	
MW395	Upgradient	Yes	3.25E-02	NO	-3.43E+00	N/A	

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

NO

2.05E-01

Yes

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Boron UNITS: mg/L LRGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 0.650 S= 0.805 CV(1)=1.238 K factor**=2.523 TL(1)=2.68E+00 LL(1)=N/A

 Statistics-Transformed Background Data
 X= -1.034 S= 1.030 CV(2)=-0.996 K factor**=2.523 TL(2)=1.56E+00 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW395 Date Collected Result LN(Result) 8/13/2002 2.00E+00 6.93E-01 9/16/2002 2.00E+00 6.93E-01 10/16/2002 2.00E-01 -1.61E+00 1/13/2003 2.00E-01 -1.61E+00 4/10/2003 2.00E-01 -1.61E+00 7/16/2003 2.00E-01 -1.61E+00 10/14/2003 2.00E-01 -1.61E+00 1/13/2004 2.00E-01 -1.61E+00 Well Number: MW397 Date Collected Result LN(Result) 8/13/2002 2.00E+00 6.93E-01 9/16/2002 2.00E+00 6.93E-01 10/17/2002 2.00E-01 -1.61E+00 1/13/2003 2.00E-01 -1.61E+00 4/8/2003 2.00E-01 -1.61E+00 7/16/2003 2.00E-01 -1.61E+00 10/14/2003 2.00E-01 -1.61E+00 1/13/2004 2.00E-01 -1.61E+00

Because CV(1) is greater than 1, the natural logarithm of background and test well results were calculated utilizing TL(2) for comparison.

Current Quarter Data							
Well No.	Gradient	Detected?	Result	Result >TL(1)	? LN(Result)	LN(Result) >TL(2)	
MW370	Downgradient	Yes	9.77E-02	N/A	-2.33E+00	NO	
MW373	Downgradient	Yes	2.81E+00) N/A	1.03E+00	NO	
MW385	Sidegradient	Yes	7.67E-02	N/A	-2.57E+00	NO	
MW388	Downgradient	Yes	3.46E-02	N/A	-3.36E+00	NO	
MW392	Downgradient	Yes	2.11E-02	N/A	-3.86E+00	NO	
MW395	Upgradient	Yes	1.95E-02	N/A	-3.94E+00	NO	
MW397	Upgradient	Yes	7.83E-03	N/A	-4.85E+00	NO	
	lts identified as N		_				

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Bromide UNITS: mg/L LRGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data X=1.000 S= 0.000 CV(1)=0.000 K factor**= 2.523 TL(1)=1.00E+00 LL(1)=N/A Statistics-Transformed Background Data X=0.000 S= 0.000 CV(2)=#Num! K factor**= 2.523 TL(2)=0.00E+00 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW395 Date Collected Result LN(Result) 8/13/2002 1.00E+00 0.00E+009/16/2002 1.00E+00 0.00E+0010/16/2002 1.00E+00 0.00E+001/13/2003 1.00E+00 0.00E+004/10/2003 1.00E+00 0.00E+007/16/2003 1.00E+00 0.00E+0010/14/2003 1.00E+00 0.00E+001/13/2004 1.00E+00 0.00E+00Well Number: MW397 Date Collected Result LN(Result) 8/13/2002 1.00E+00 0.00E+009/16/2002 1.00E+00 0.00E+0010/17/2002 1.00E+00 0.00E+001/13/2003 1.00E+00 0.00E+004/8/2003 1.00E+00 0.00E+007/16/2003 1.00E+00 0.00E+0010/14/2003 1.00E+00 0.00E+001/13/2004 1.00E+00 0.00E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current	Quarter Data					
Well No.	Gradient	Detected?	Result	Result >TL(1))? LN(Result)	LN(Result) >TL(2)
MW370	Downgradien	t Yes	5.46E-01	NO	-6.05E-01	N/A
MW373	Downgradien	t Yes	4.64E-01	NO	-7.68E-01	N/A
MW385	Sidegradient	Yes	2.15E-01	NO	-1.54E+00	N/A
MW388	Downgradien	t Yes	4.29E-01	NO	-8.46E-01	N/A
MW392	Downgradien	t Yes	5.25E-01	NO	-6.44E-01	N/A
MW395	Upgradient	Yes	6.22E-01	NO	-4.75E-01	N/A
MW397	Upgradient	Yes	3.70E-01	NO	-9.94E-01	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Calcium UNITS: mg/L LRGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 23.103
 S= 11.538
 CV(1)=0.499
 K factor**= 2.523
 TL(1)= 5.22E+01
 LL(1)=N/A

 Statistics-Transformed Background Data
 X= 2.357
 S= 2.411
 CV(2)=1.023
 K factor**= 2.523
 TL(2)= 8.44E+00
 LL(2)=N/A

Current Quarter Data

MW397 Upgradient

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW395 Date Collected Result LN(Result) 8/13/2002 3.22E+01 3.47E+00 9/16/2002 3.30E+01 3.50E+00 10/16/2002 2.95E-02 -3.52E+00 3.47E+00 1/13/2003 3.21E+01 4/10/2003 4.02E+01 3.69E+00 7/16/2003 3.24E+01 3.48E+00 10/14/2003 3.39E+01 3.52E+00 1/13/2004 3.12E+01 3.44E+00 Well Number: MW397 Date Collected Result LN(Result) 8/13/2002 1.94E+01 2.97E+00 9/16/2002 1.90E+01 2.94E+00 10/17/2002 1.79E-02 -4.02E+00 1/13/2003 1.78E+01 2.88E+00 4/8/2003 2.03E+01 3.01E+00 7/16/2003 1.94E+01 2.97E+00 10/14/2003 1.99E+01 2.99E+00 1/13/2004 1.88E+01 2.93E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current	Quarter Butu					
Well No.	Gradient	Detected?	Result	Result >TL(1)	2 LN(Result)	LN(Result) >TL(2
MW370	Downgradient	Yes	2.90E+01	l NO	3.37E+00	N/A
MW373	Downgradient	Yes	8.59E+01	l YES	4.45E+00	N/A
MW385	Sidegradient	Yes	2.41E+01	l NO	3.18E+00	N/A
MW388	Downgradient	Yes	2.93E+01	l NO	3.38E+00	N/A
MW392	Downgradient	Yes	2.27E+01	l NO	3.12E+00	N/A
MW395	Upgradient	Yes	2.69E+01	l NO	3.29E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

NO

1.84E+01

Yes

Conclusion of Statistical Analysis on Historical Data

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to historical background data.

Wells with Exceedances

N/A

MW373

2.91E+00

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Chemical Oxygen Demand (COD) UNITS: mg/L LRGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 35.313
 S= 1.250
 CV(1)=0.035 K factor**= 2.523
 TL(1)=3.85E+01 LL(1)=N/A

 Statistics-Transformed Background Data
 X= 3.564
 S= 0.033
 CV(2)=0.009 K factor**= 2.523
 TL(2)=3.65E+00 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW395 Date Collected Result LN(Result) 8/13/2002 3.50E+01 3.56E+00 9/16/2002 3.50E+01 3.56E+00 10/16/2002 3.50E+01 3.56E+00 1/13/2003 3.50E+01 3.56E+00 4/10/2003 3.50E+01 3.56E+00 7/16/2003 3.50E+01 3.56E+00 10/14/2003 3.50E+01 3.56E+00 1/13/2004 3.50E+01 3.56E+00 Well Number: MW397 Date Collected Result LN(Result) 8/13/2002 4.00E+01 3.69E+00 9/16/2002 3.50E+01 3.56E+00 10/17/2002 3.50E+01 3.56E+00 1/13/2003 3.50E+01 3.56E+00 4/8/2003 3.50E+01 3.56E+00 7/16/2003 3.50E+01 3.56E+00 10/14/2003 3.50E+01 3.56E+00 1/13/2004 3.50E+01 3.56E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current	Quarter Data								
Well No.	Gradient	Detected?	Result	Result >TL(l)? LN(Result)	LN(Result) >TL(2)			
MW370	Downgradient	No	2.00E+01	N/A	3.00E+00	N/A			
MW373	Downgradient	Yes	1.29E+01	NO	2.56E+00	N/A			
MW385	Sidegradient	No	2.00E+01	N/A	3.00E+00	N/A			
MW388	Downgradient	No	2.00E+01	N/A	3.00E+00	N/A			
MW392	Downgradient	No	2.00E+01	N/A	3.00E+00	N/A			
MW395	Upgradient	No	2.00E+01	N/A	3.00E+00	N/A			
MW397	Upgradient	No	2.00E+01	N/A	3.00E+00	N/A			
N/A - Resul	N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not								

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Chloride UNITS: mg/L LRGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 51.844
 S= 11.652
 CV(1)=0.225
 K factor**= 2.523
 TL(1)= 8.12E+01
 LL(1)=N/A

 Statistics-Transformed
 X= 3.924
 S= 0.229
 CV(2)=0.058
 K factor**= 2.523
 TL(2)= 4.50E+00
 LL(2)=N/A

Background Data

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW395 Date Collected Result LN(Result) 8/13/2002 6.22E+01 4.13E+00 9/16/2002 6.47E+01 4.17E+00 10/16/2002 6.22E+01 4.13E+00 1/13/2003 6.35E+01 4.15E+00 4/10/2003 6.41E+01 4.16E+00 7/16/2003 6.40E+01 4.16E+00 10/14/2003 6.32E+01 4.15E+00 1/13/2004 6.06E+01 4.10E+00 Well Number: MW397 Date Collected Result LN(Result) 8/13/2002 3.89E+01 3.66E+00 9/16/2002 3.98E+01 3.68E+00 10/17/2002 3.93E+01 3.67E+00 1/13/2003 4.05E+01 3.70E+00 4/8/2003 4.21E+01 3.74E+00 7/16/2003 4.20E+01 3.74E+00 10/14/2003 4.08E+01 3.71E+00 1/13/2004 4.16E+01 3.73E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current	Quarter	Data	

Well No.	Gradient	Detected?	Result	Result >TL(1)	? LN(Result)	LN(Result) >TL(2)
MW370	Downgradient	Yes	4.20E+01	NO	3.74E+00	N/A
MW373	Downgradient	Yes	2.97E+01	NO	3.39E+00	N/A
MW385	Sidegradient	No	2.09E+01	N/A	3.04E+00	N/A
MW388	Downgradient	Yes	3.32E+01	NO	3.50E+00	N/A
MW392	Downgradient	t No	4.16E+01	N/A	3.73E+00	N/A
MW395	Upgradient	Yes	2.28E+01	NO	3.13E+00	N/A
MW397	Upgradient	Yes	3.34E+01	NO	3.51E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison cis-1,2-Dichloroethene UNITS: ug/L LRGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data	X = 5.000	S = 0.000	CV(1)=0.000	K factor**= 2.523	TL(1)= 5.00E+00 LL(1)=N/A
Statistics-Transformed Background Data	X= 1.609	S = 0.000	CV(2)= 0.000	K factor**= 2.523	TL(2)= 1.61E+00 LL(2)= N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW395 Date Collected Result LN(Result) 8/13/2002 5.00E+00 1.61E+00 9/30/2002 5.00E+00 1.61E+00 10/16/2002 5.00E+00 1.61E+00 1/13/2003 5.00E+00 1.61E+00 4/10/2003 5.00E+00 1.61E+00 7/16/2003 5.00E+00 1.61E+00 10/14/2003 5.00E+00 1.61E+00 1/13/2004 5.00E+00 1.61E+00 Well Number: MW397 Date Collected Result LN(Result) 8/13/2002 5.00E+00 1.61E+00 9/30/2002 5.00E+00 1.61E+00 10/17/2002 5.00E+00 1.61E+00 1/13/2003 5.00E+00 1.61E+00 4/8/2003 5.00E+00 1.61E+00 7/16/2003 5.00E+00 1.61E+00 10/14/2003 5.00E+00 1.61E+00 1/13/2004 5.00E+00 1.61E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current	Quarter Data					
Well No.	Gradient	Detected?	Result	Result >TL(1)	? LN(Result)	LN(Result) >TL(2)
MW370	Downgradient	t No	1.00E+00) N/A	0.00E+00	N/A
MW373	Downgradient	t No	1.00E+00) N/A	0.00E+00	N/A
MW385	Sidegradient	No	1.00E+00) N/A	0.00E+00	N/A
MW388	Downgradient	t No	1.00E+00) N/A	0.00E+00	N/A
MW392	Downgradient	Yes	4.40E-01	NO	-8.21E-01	N/A
MW395	Upgradient	No	1.00E+00) N/A	0.00E+00	N/A
MW397	Upgradient	No	1.00E+00) N/A	0.00E+00	N/A
AT/A D	1. 11 1 31	ъ.	1 1 1 1		1 . 111	4 .

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Cobalt UNITS: mg/L LRGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 0.007 S= 0.011 CV(1)=1.515 K factor**= 2.523 TL(1)= 3.41E-02 LL(1)=N/A

 Statistics-Transformed Background Data
 X= -6.053 S= 1.416 CV(2)=-0.234 K factor**= 2.523 TL(2)=-2.48E+00 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW395 Date Collected Result LN(Result) 8/13/2002 2.50E-02 -3.69E+00 9/16/2002 2.50E-02 -3.69E+00 10/16/2002 1.00E-03 -6.91E+00 1/13/2003 1.48E-03 -6.52E+00 4/10/2003 1.51E-03 -6.50E+00 7/16/2003 1.00E-03 -6.91E+00 10/14/2003 1.00E-03 -6.91E+00 1/13/2004 1.00E-03 -6.91E+00 Well Number: MW397 Date Collected Result LN(Result) 8/13/2002 2.50E-02 -3.69E+00 9/16/2002 2.50E-02 -3.69E+00 10/17/2002 1.00E-03 -6.91E+00 1/13/2003 1.00E-03 -6.91E+00 4/8/2003 1.00E-03 -6.91E+00 7/16/2003 1.00E-03 -6.91E+00 10/14/2003 1.00E-03 -6.91E+00 1/13/2004 1.00E-03 -6.91E+00

Because CV(1) is greater than 1, the natural logarithm of background and test well results were calculated utilizing TL(2) for comparison.

Current	Current Quarter Data									
Well No.	Gradient	Detected?	Result	Result >TL((1)? LN(Result)	LN(Result) >TL(2)				
MW370	Downgradient	Yes	3.55E-04	N/A	-7.94E+00	NO				
MW373	Downgradient	t No	1.00E-03	N/A	-6.91E+00	N/A				
MW385	Sidegradient	Yes	4.61E-04	N/A	-7.68E+00	NO				
MW388	Downgradient	t No	1.00E-03	N/A	-6.91E+00	N/A				
MW392	Downgradient	Yes	3.13E-04	N/A	-8.07E+00	NO				
MW395	Upgradient	No	1.00E-03	N/A	-6.91E+00	N/A				
MW397	Upgradient	No	1.00E-03	N/A	-6.91E+00	N/A				
N/A - Resu	lts identified as N	Ion-Detects	during lab	oratory analysi	is or data validation	n and were not				

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis **Historical Background Comparison Conductivity** UNITS: umho/cm **LRGA**

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X = 377.875 S = 52.101 CV(1) = 0.138

K factor=** 2.523

TL(1)= 5.09E+02 **LL(1)=**N/A

Statistics-Transformed Background Data

X = 5.926 S = 0.136CV(2) = 0.023 **K factor**=** 2.523

TL(2) = 6.27E + 00 LL(2) = N/A

Historical Background Data from **Upgradient Wells with Transformed Result**

Well Number: MW395 Date Collected Result LN(Result) 8/13/2002 4.05E+02 6.00E+00 9/16/2002 4.01E+02 5.99E+00 10/16/2002 3.92E+02 5.97E+00 1/13/2003 4.04E+02 6.00E+00 4/10/2003 4.88E+02 6.19E+00 7/16/2003 4.50E+02 6.11E+00 10/14/2003 4.10E+02 6.02E+00 1/13/2004 4.13E+02 6.02E+00 Well Number: MW397 Date Collected Result LN(Result) 8/13/2002 3.22E+02 5.77E+00 9/16/2002 3.15E+02 5.75E+00 10/17/2002 3.17E+02 5.76E+00 1/13/2003 3.20E+02 5.77E+00 3.90E+02 4/8/2003 5.97E+00 7/16/2003 3.54E+02 5.87E+00 10/14/2003 3.31E+02 5.80E+00 1/13/2004 3.34E+02 5.81E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Well No.	Gradient	Detected?	Result	Result >TL(1)?	2 LN(Result)	LN(Result) >TL(2)
MW370	Downgradient	Yes	4.39E+02	2 NO	6.08E+00	N/A
MW373	Downgradient	Yes	9.43E+02	YES	6.85E+00	N/A
MW385	Sidegradient	Yes	4.10E+02	NO NO	6.02E+00	N/A
MW388	Downgradient	Yes	4.66E+02	2 NO	6.14E+00	N/A
MW392	Downgradient	Yes	3.29E+02	NO NO	5.80E+00	N/A
MW395	Upgradient	Yes	3.91E+02	2 NO	5.97E+00	N/A
MW397	Upgradient	Yes	3.18E+02	NO NO	5.76E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to historical background data.

Wells with Exceedances

MW373

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

- Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5 S
- Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)
- Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009. D1-67

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Copper UNITS: mg/L LRGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 0.028 S= 0.013 CV(1)=0.474 K factor**= 2.523 TL(1)=6.15E-02 LL(1)=N/A

 Statistics-Transformed Background Data
 X= -3.662 S= 0.406 CV(2)=-0.111 K factor**= 2.523 TL(2)=-2.64E+00 LL(2)=N/A

MW397 Upgradient

Historical Background Data from

Upgradient Wells with Transformed Result

Well Number: MW395 Date Collected Result LN(Result) 8/13/2002 5.00E-02 -3.00E+00 9/16/2002 5.00E-02 -3.00E+00 10/16/2002 2.81E-02 -3.57E+00 1/13/2003 2.00E-02 -3.91E+00 4/10/2003 2.00E-02 -3.91E+00 7/16/2003 2.00E-02 -3.91E+00 2.00E-02 10/14/2003 -3.91E+00 1/13/2004 2.00E-02 -3.91E+00 Well Number: MW397 Date Collected Result LN(Result) 8/13/2002 5.00E-02 -3.00E+00 9/16/2002 5.00E-02 -3.00E+00 10/17/2002 2.00E-02 -3.91E+00 1/13/2003 2.00E-02 -3.91E+00

2.00E-02

2.00E-02

2.00E-02

2.00E-02

4/8/2003

7/16/2003

10/14/2003

1/13/2004

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

-6.99E+00

N/A

Current	Quarter Data					
Well No.	Gradient	Detected?	Result	Result >TL(1)? LN(Result)	LN(Result) >TL(2)
MW370	Downgradient	Yes	1.11E-03	NO	-6.80E+00	N/A
MW373	Downgradient	Yes	1.19E-03	NO	-6.73E+00	N/A
MW385	Sidegradient	Yes	1.11E-03	NO	-6.80E+00	N/A
MW388	Downgradient	Yes	9.81E-04	NO	-6.93E+00	N/A
MW392	Downgradient	Yes	9.56E-04	NO	-6.95E+00	N/A
MW395	Upgradient	Yes	9.44E-04	NO	-6.97E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

NO

9.20E-04

Yes

Conclusion of Statistical Analysis on Historical Data

-3.91E+00

-3.91E+00

-3.91E+00

-3.91E+00

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Dissolved Oxygen UNITS: mg/L LRGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 4.678
 S= 2.431
 CV(1)=0.520 K factor**= 2.523
 TL(1)=1.08E+01 LL(1)=N/A

 Statistics-Transformed Background Data
 X= 1.414
 S= 0.550
 CV(2)=0.389 K factor**= 2.523
 TL(2)=2.80E+00 LL(2)=N/A

Current Quarter Data

MW395 Upgradient

MW397 Upgradient

Yes

Yes

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW395 Date Collected Result LN(Result) 8/13/2002 7.29E+00 1.99E+00 9/30/2002 4.03E+00 1.39E+00 10/16/2002 3.85E+00 1.35E+00 1/13/2003 2.36E+00 8.59E-01 4/10/2003 1.14E+00 1.31E-01 7/16/2003 1.76E+00 5.65E-01 10/14/2003 4.05E+00 1.40E+00 1/13/2004 4.26E+00 1.45E+00 Well Number: MW397 Date Collected Result LN(Result) 8/13/2002 1.16E+01 2.45E+00 9/16/2002 5.86E+00 1.77E+00 10/17/2002 5.94E+00 1.78E+00 1/13/2003 4.66E+00 1.54E+00 4/8/2003 3.77E+00 1.33E+00 7/16/2003 3.47E+00 1.24E+00 10/14/2003 5.34E+00 1.68E+00 1/13/2004 5.51E+00 1.71E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

1.25E+00

1.82E+00

N/A

N/A

	Ç					
Well No.	Gradient	Detected?	Result	Result >TL(1)? LN(Result)	LN(Result) >TL(2
MW370	Downgradien	t Yes	4.22E+00	NO	1.44E+00	N/A
MW373	Downgradien	t Yes	1.14E+00	NO	1.31E-01	N/A
MW385	Sidegradient	Yes	1.79E+00	NO	5.82E-01	N/A
MW388	Downgradien	t Yes	4.38E+00	NO	1.48E+00	N/A
MW392	Downgradien	t Yes	1.87E+00	NO	6.26E-01	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

NO

NO

3.50E+00

6.17E+00

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Dissolved Solids UNITS: mg/L LRGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 219.250 S= 34.107 CV(1)=0.156
 K factor**= 2.523 TL(1)= 3.05E+02 LL(1)=N/A

 Statistics-Transformed
 X= 5.379 S= 0.152 CV(2)=0.028
 K factor**= 2.523 TL(2)= 5.76E+00 LL(2)=N/A

Background Data

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW395 Date Collected Result LN(Result) 8/13/2002 2.49E+02 5.52E+00 9/16/2002 2.72E+02 5.61E+00 10/16/2002 2.55E+02 5.54E+00 1/13/2003 2.11E+02 5.35E+00 4/10/2003 2.89E+02 5.67E+00 7/16/2003 2.36E+02 5.46E+00 10/14/2003 2.24E+02 5.41E+00 1/13/2004 2.35E+02 5.46E+00 Well Number: MW397 Date Collected Result LN(Result) 8/13/2002 1.87E+02 5.23E+00 9/16/2002 1.97E+02 5.28E+00 10/17/2002 1.83E+02 5.21E+00 1/13/2003 1.82E+02 5.20E+00 4/8/2003 2.17E+02 5.38E+00 7/16/2003 1.96E+02 5.28E+00 10/14/2003 1.98E+02 5.29E+00 1/13/2004 1.77E+02 5.18E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current Quarter Data

Well No.	Gradient	Detected?	Result	Result >TL(1)	? LN(Result)	LN(Result) >TL(2)
MW370	Downgradient	Yes	2.47E+02	. NO	5.51E+00	N/A
MW373	Downgradient	Yes	5.85E+02	YES	6.37E+00	N/A
MW385	Sidegradient	Yes	2.01E+02	NO NO	5.30E+00	N/A
MW388	Downgradient	Yes	2.48E+02	. NO	5.51E+00	N/A
MW392	Downgradient	Yes	1.72E+02	. NO	5.15E+00	N/A
MW395	Upgradient	Yes	2.14E+02	. NO	5.37E+00	N/A
MW397	Upgradient	Yes	1.60E+02	. NO	5.08E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to historical background data.

Wells with Exceedances

MW373

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

- S Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Iron UNITS: mg/L LRGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 0.400
 S= 0.514
 CV(1)=1.286
 K factor**= 2.523
 TL(1)= 1.70E+00
 LL(1)=N/A

 Statistics-Transformed Background Data
 X= -2.197
 S= 2.634
 CV(2)=-1.199
 K factor**= 2.523
 TL(2)= 4.45E+00
 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW395 Date Collected Result LN(Result) 8/13/2002 2.94E-01 -1.22E+00 9/16/2002 2.00E-01 -1.61E+00 10/16/2002 2.00E-04 -8.52E+00 1/13/2003 1.33E+00 2.85E-01 4/10/2003 1.31E+00 2.70E-01 7/16/2003 2.00E-01 -1.61E+00 10/14/2003 1.00E-01 -2.30E+00 1/13/2004 1.00E-01 -2.30E+00 Well Number: MW397 Date Collected Result LN(Result) 8/13/2002 1.58E+00 4.57E-01 9/16/2002 2.32E-01 -1.46E+00 10/17/2002 2.00E-04 -8.52E+00 1/13/2003 4.53E-01 -7.92E-01 4/8/2003 2.00E-01 -1.61E+00 7/16/2003 2.00E-01 -1.61E+00 10/14/2003 1.00E-01 -2.30E+00 1/13/2004 1.00E-01 -2.30E+00

Because CV(1) is greater than 1, the natural logarithm of background and test well results were calculated utilizing TL(2) for comparison.

Current	Quarter Data					
Well No.	Gradient	Detected?	Result	Result >TL(1))? LN(Result)	LN(Result) >TL(2)
MW370	Downgradient	t Yes	1.70E+00	N/A	5.31E-01	NO
MW373	Downgradient	t Yes	8.49E-02	N/A	-2.47E+00	NO
MW385	Sidegradient	Yes	3.81E-02	N/A	-3.27E+00	NO
MW388	Downgradient	t Yes	2.51E-01	N/A	-1.38E+00	NO
MW392	Downgradient	t Yes	2.02E-01	N/A	-1.60E+00	NO
MW395	Upgradient	Yes	9.13E-02	N/A	-2.39E+00	NO
MW397	Upgradient	Yes	5.60E-01	N/A	-5.80E-01	NO

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Magnesium UNITS: mg/L LRGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 9.102 S= 4.685 CV(1)=0.515 K factor**= 2.523 TL(1)= 2.09E+01 LL(1)=N/A

 Statistics-Transformed Background Data
 X= 1.423 S= 2.408 CV(2)=1.692 K factor**= 2.523 TL(2)=7.50E+00 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW395 Date Collected Result LN(Result) 8/13/2002 1.25E+01 2.53E+00 9/16/2002 1.30E+01 2.56E+00 10/16/2002 1.27E-02 -4.37E+00 1/13/2003 1.12E+01 2.42E+00 4/10/2003 1.75E+01 2.86E+00 7/16/2003 1.29E+01 2.56E+00 10/14/2003 1.34E+01 2.60E+00 1/13/2004 1.24E+01 2.52E+00 Well Number: MW397 Date Collected Result LN(Result) 8/13/2002 7.83E+00 2.06E+00 9/16/2002 7.64E+00 2.03E+00 10/17/2002 6.58E-03 -5.02E+00 1/13/2003 6.69E+00 1.90E+00 4/8/2003 7.28E+00 1.99E+00 7/16/2003 7.82E+00 2.06E+00 10/14/2003 7.94E+00 2.07E+001/13/2004 7.51E+00 2.02E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current Quarter Data

Well No.	Gradient	Detected?	Result	Result >TL(1)	2 LN(Result)	LN(Result) >TL(2)
MW370	Downgradient	Yes	1.21E+01	NO	2.49E+00	N/A
MW373	Downgradient	Yes	2.91E+01	YES	3.37E+00	N/A
MW385	Sidegradient	Yes	9.36E+00) NO	2.24E+00	N/A
MW388	Downgradient	Yes	1.32E+01	NO	2.58E+00	N/A
MW392	Downgradient	Yes	9.70E+00) NO	2.27E+00	N/A
MW395	Upgradient	Yes	1.13E+01	NO	2.42E+00	N/A
MW397	Upgradient	Yes	7.52E+00) NO	2.02E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to historical background data.

Wells with Exceedances

MW373

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

- S Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Manganese UNITS: mg/L LRGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 0.131
 S= 0.195
 CV(1)=1.487
 K factor**= 2.523
 TL(1)= 6.24E-01
 LL(1)=N/A

 Statistics-Transformed Background Data
 X= -3.104
 S= 1.529
 CV(2)=-0.493
 K factor**= 2.523
 TL(2)= 7.55E-01
 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW395 Date Collected Result LN(Result) 8/13/2002 3.61E-01 -1.02E+00 9/16/2002 2.80E-02 -3.58E+00 10/16/2002 2.60E-02 -3.65E+00 1/13/2003 7.13E-02 -2.64E+00 4/10/2003 6.29E-01 -4.64E-01 7/16/2003 2.97E-01 -1.21E+00 10/14/2003 1.98E-02 -3.92E+00 1/13/2004 1.26E-02 -4.37E+00 Well Number: MW397 Date Collected Result LN(Result) 8/13/2002 4.66E-01 -7.64E-01 9/16/2002 7.70E-02 -2.56E+00 10/17/2002 2.80E-02 -3.58E+00 1/13/2003 1.64E-02 -4.11E+00 4/8/2003 4.07E-02 -3.20E+00 7/16/2003 1.67E-02 -4.09E+00 10/14/2003 5.55E-03 -5.19E+00 1/13/2004 5.00E-03 -5.30E+00

Because CV(1) is greater than 1, the natural logarithm of background and test well results were calculated utilizing TL(2) for comparison.

Current	Quarter Data					
Well No.	Gradient	Detected?	Result	Result >TL(1)? LN(Result)	LN(Result) >TL(2)
MW370	Downgradient	Yes	5.87E-02	N/A	-2.84E+00	NO
MW373	Downgradient	Yes	3.56E-02	N/A	-3.34E+00	NO
MW385	Sidegradient	Yes	2.91E-03	N/A	-5.84E+00	NO
MW388	Downgradient	Yes	3.73E-03	N/A	-5.59E+00	NO
MW392	Downgradient	Yes	1.98E-01	N/A	-1.62E+00	NO
MW395	Upgradient	Yes	3.61E-03	N/A	-5.62E+00	NO
MW397	Upgradient	Yes	1.02E-02	N/A	-4.59E+00	NO
N/A - Resu	lts identified as N	Ion-Detects	during lab	oratory analysis	or data validation	n and were not

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Methylene chloride UNITS: ug/L LRGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 5.625 S= 3.074 CV(1)=0.547 K factor**= 2.523 TL(1)=1.34E+01 LL(1)=N/A

 Statistics-Transformed Background Data
 X= 1.614 S= 0.483 CV(2)=0.300 K factor**= 2.523 TL(2)=2.83E+00 LL(2)=N/A

Current Quarter Data

MW395 Upgradient

MW397 Upgradient

No

Yes

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW395 Date Collected Result LN(Result) 8/13/2002 1.40E+01 2.64E+00 9/30/2002 2.00E+00 6.93E-01 10/16/2002 5.00E+00 1.61E+00 1/13/2003 5.00E+00 1.61E+00 4/10/2003 5.00E+00 1.61E+00 7/16/2003 5.00E+00 1.61E+00 10/14/2003 5.00E+00 1.61E+00 1/13/2004 5.00E+00 1.61E+00 Well Number: MW397 Date Collected Result LN(Result) 8/13/2002 1.20E+01 2.48E+00 9/30/2002 2.00E+00 6.93E-01 10/17/2002 5.00E+00 1.61E+00 1/13/2003 5.00E+00 1.61E+00 4/8/2003 5.00E+00 1.61E+00 7/16/2003 5.00E+00 1.61E+00 10/14/2003 5.00E+00 1.61E+00 1/13/2004 5.00E+00 1.61E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

1.61E+00

-3.71E-01

N/A

N/A

	C					
Well No.	Gradient	Detected?	Result	Result >TL(1)?	LN(Result)	LN(Result) >TL(2
MW370	Downgradient	No	5.00E+00	N/A	1.61E+00	N/A
MW373	Downgradient	No	5.00E+00	N/A	1.61E+00	N/A
MW385	Sidegradient	No	5.00E+00	N/A	1.61E+00	N/A
MW388	Downgradient	No	5.00E+00	N/A	1.61E+00	N/A
MW392	Downgradient	No	5.00E+00	N/A	1.61E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

N/A

NO

5.00E+00

6.90E-01

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Molybdenum UNITS: mg/L LRGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 0.007
 S= 0.011
 CV(1)=1.451 K factor**= 2.523
 TL(1)=3.41E-02 LL(1)=N/A

 Statistics-Transformed Background Data
 X= -5.990
 S= 1.443
 CV(2)=-0.241 K factor**= 2.523
 TL(2)=-2.35E+00 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW395 Date Collected Result LN(Result) 8/13/2002 2.50E-02 -3.69E+00 9/16/2002 2.50E-02 -3.69E+00 10/16/2002 1.00E-03 -6.91E+00 1/13/2003 6.09E-03 -5.10E+00 4/10/2003 1.00E-03 -6.91E+00 7/16/2003 1.00E-03 -6.91E+00 10/14/2003 1.00E-03 -6.91E+00 1/13/2004 1.00E-03 -6.91E+00 Well Number: MW397 Date Collected Result LN(Result) 8/13/2002 2.50E-02 -3.69E+00 9/16/2002 2.50E-02 -3.69E+00 10/17/2002 1.00E-03 -6.91E+00 1/13/2003 1.00E-03 -6.91E+00 4/8/2003 1.00E-03 -6.91E+00 7/16/2003 1.00E-03 -6.91E+00 10/14/2003 1.00E-03 -6.91E+00 1/13/2004 1.00E-03 -6.91E+00

Because CV(1) is greater than 1, the natural logarithm of background and test well results were calculated utilizing TL(2) for comparison.

Current	Quarter Da	ta
Well No	Gradient	Det

Well No.	Gradient	Detected?	Result	Result >TL(1)?	LN(Result)	LN(Result) >TL(2)
MW370	Downgradien	t No	2.85E-04	N/A	-8.16E+00	N/A
MW373	Downgradien	t Yes	3.83E-04	N/A	-7.87E+00	NO
MW385	Sidegradient	Yes	2.25E-04	N/A	-8.40E+00	NO
MW388	Downgradien	t No	1.00E-03	N/A	-6.91E+00	N/A
MW392	Downgradien	t No	1.00E-03	N/A	-6.91E+00	N/A
MW395	Upgradient	No	1.00E-03	N/A	-6.91E+00	N/A
MW397	Upgradient	No	1.00E-03	N/A	-6.91E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Nickel UNITS: mg/L LRGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 0.018 S= 0.020 CV(1)=1.089 K factor**= 2.523 TL(1)= 6.83E-02 LL(1)=N/A

 Statistics-Transformed Background Data
 X= -4.540
 S= 1.020 CV(2)=-0.225
 K factor**= 2.523 TL(2)= -1.97E+00
 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW395 Date Collected Result LN(Result) 8/13/2002 5.00E-02 -3.00E+00 9/16/2002 5.00E-02 -3.00E+00 10/16/2002 7.02E-03 -4.96E+00 1/13/2003 2.90E-02 -3.54E+00 4/10/2003 9.10E-03 -4.70E+00 7/16/2003 6.27E-03 -5.07E+00 10/14/2003 5.00E-03 -5.30E+00 1/13/2004 5.00E-03 -5.30E+00 Well Number: MW397 Date Collected Result LN(Result) 8/13/2002 5.00E-02 -3.00E+00 9/16/2002 5.00E-02 -3.00E+00 10/17/2002 5.00E-03 -5.30E+00 1/13/2003 5.02E-03 -5.29E+00 4/8/2003 5.00E-03 -5.30E+00 7/16/2003 5.00E-03 -5.30E+00 10/14/2003 5.00E-03 -5.30E+00 1/13/2004 5.00E-03 -5.30E+00

Because CV(1) is greater than 1, the natural logarithm of background and test well results were calculated utilizing TL(2) for comparison.

Current	Quarter Data					
Well No.	Gradient	Detected?	Result	Result >TL(1)? LN(Result)	LN(Result) >TL(2)
MW370	Downgradient	Yes	9.38E-04	N/A	-6.97E+00	NO
MW373	Downgradient	Yes	1.40E-03	N/A	-6.57E+00	NO
MW385	Sidegradient	Yes	1.10E-03	N/A	-6.81E+00	NO
MW388	Downgradient	Yes	7.74E-04	N/A	-7.16E+00	NO
MW392	Downgradient	Yes	2.23E-03	N/A	-6.11E+00	NO
MW395	Upgradient	No	2.00E-03	N/A	-6.21E+00	N/A
MW397	Upgradient	Yes	8.75E-04	N/A	-7.04E+00	NO
N/A - Resu	lts identified as N	Ion-Detects	during lab	oratory analysis	or data validatio	n and were not

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis **Historical Background Comparison UNITS: mV Oxidation-Reduction Potential**

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

X = 157.250 S = 52.376 CV(1) = 0.333**K factor**=** 2.523 **TL(1)=** 2.89E+02 **LL(1)=**N/A **Statistics-Background Data**

Statistics-Transformed Background Data

X = 5.003CV(2) = 0.069S = 0.348

K factor=** 2.523 TL(2) = 5.88E + 00 LL(2) = N/A

Historical Background Data from **Upgradient Wells with Transformed Result**

Well Number: MW395 Date Collected Result LN(Result) 8/13/2002 8.00E+01 4.38E+00 9/16/2002 1.45E+02 4.98E+00 10/16/2002 1.25E+02 4.83E+00 1/13/2003 8.50E+01 4.44E+00 4/10/2003 1.59E+02 5.07E+00 7/16/2003 9.80E+01 4.58E+00 10/14/2003 1.38E+02 4.93E+00 1/13/2004 2.33E+02 5.45E+00 Well Number: MW397 Date Collected Result LN(Result) 8/13/2002 1.15E+02 4.74E+00 9/30/2002 1.40E+02 4.94E+00 10/17/2002 1.85E+02 5.22E+00 1/13/2003 2.30E+02 5.44E+00 4/8/2003 1.55E+02 5.04E+00 7/16/2003 1.88E+02 5.24E+00 10/14/2003 1.87E+02 5.23E+00 1/13/2004 2.53E+02 5.53E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

LRGA

Current	Quarter	Data
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Well No.	Gradient	Detected?	Result	Result >TL(1)? LN(Result)	LN(Result) >TL(2)
MW370	Downgradien	t Yes	4.64E+02	YES	6.14E+00	N/A
MW373	Downgradien	t Yes	4.37E+02	YES	6.08E+00	N/A
MW385	Sidegradient	Yes	3.90E+02	YES	5.97E+00	N/A
MW388	Downgradien	t Yes	3.96E+02	YES	5.98E+00	N/A
MW392	Downgradien	t Yes	3.68E+02	YES	5.91E+00	N/A
MW395	Upgradient	Yes	3.93E+02	YES	5.97E+00	N/A
MW397	Upgradient	Yes	3.97E+02	YES	5.98E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to historical background data.

Wells with Exceedances

MW370 MW373 MW385 MW388 MW392

MW395

MW397

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

- Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5 S
- Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)
- Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009. D1-77

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison pH UNITS: Std Unit LRGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 6.048
 S= 0.248
 CV(1)=0.041
 K factor**= 2.904
 TL(1)= 6.77E+00
 LL(1)=5.33E+00

 Statistics-Transformed Background Data
 X= 1.799
 S= 0.042
 CV(2)=0.023
 K factor**= 2.904
 TL(2)= 1.92E+00
 LL(2)=1.68E+00

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW395 Date Collected Result LN(Result) 8/13/2002 5.80E+00 1.76E+00 9/16/2002 6.00E+00 1.79E+00 10/16/2002 5.47E+00 1.70E+00 1/13/2003 6.00E+00 1.79E+00 4/10/2003 6.18E+00 1.82E+00 7/16/2003 6.00E+00 1.79E+00 10/14/2003 6.31E+00 1.84E+00 1/13/2004 6.24E+00 1.83E+00 Well Number: MW397 Date Collected Result LN(Result) 8/13/2002 5.84E+00 1.76E+00 9/30/2002 6.00E+00 1.79E+00 10/17/2002 5.75E+00 1.75E+00 1/13/2003 6.00E+00 1.79E+00 4/8/2003 6.30E+00 1.84E+00 7/16/2003 6.20E+00 1.82E+00 10/14/2003 6.36E+001.85E+00 1/13/2004 6.32E+00 1.84E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current	Quarter	Data
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Well No.	Gradient	Detected?	? Result	Result $>$ TL(1)?	LN(Result)	LN(Result) > TL(2)?
				Result \leq LL(1)?		LN(Result) <ll(2)?< td=""></ll(2)?<>
MW370	Downgradient	t Yes	6.06E+00	NO NO	1.80E+00	N/A
MW373	Downgradient	Yes	6.04E+00	NO	1.80E+00	N/A
MW385	Sidegradient	Yes	6.32E+00	NO	1.84E+00	N/A
MW388	Downgradient	Yes	5.99E+00	NO	1.79E+00	N/A
MW392	Downgradient	Yes	5.97E+00	NO	1.79E+00	N/A
MW395	Upgradient	Yes	6.09E+00	NO	1.81E+00	N/A
MW397	Upgradient	Yes	5.95E+00	NO NO	1.78E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis **Historical Background Comparison Potassium** UNITS: mg/L **LRGA**

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

X = 1.590S = 0.642CV(1)=0.404**K factor**=** 2.523 **TL(1)=** 3.21E+00 **LL(1)=**N/A **Statistics-Background Data Statistics-Transformed CV(2)=**-8.028 X = -0.306 S = 2.457**K factor**=** 2.523 TL(2)=5.89E+00 LL(2)=N/A**Background Data**

Historical Background Data from **Upgradient Wells with Transformed Result**

Well Number: MW395 Date Collected Result LN(Result) 8/13/2002 2.00E+00 6.93E-01 9/16/2002 2.00E+00 6.93E-01 10/16/2002 1.29E-03 -6.65E+00 1/13/2003 1.51E+00 4.12E-01 4/10/2003 1.67E+00 5.13E-01 7/16/2003 1.73E+00 5.48E-01 10/14/2003 1.70E+00 5.31E-01 1/13/2004 1.58E+00 4.57E-01 Well Number: MW397 Date Collected Result LN(Result) 8/13/2002 2.03E+00 7.08E-01 9/16/2002 2.00E+00 6.93E-01 10/17/2002 1.45E-03 -6.54E+00 1/13/2003 1.69E+00 5.25E-01 4/8/2003 1.73E+00 5.48E-01 7/16/2003 2.00E+00 6.93E-01 10/14/2003 1.92E+00 6.52E-01 1/13/2004 1.87E+00 6.26E-01

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current	Quarter Data					
Well No.	Gradient 1	Detected?	Result	Result >TL(1))? LN(Result)	LN(Result) >TL(2)
MW370	Downgradient	Yes	2.36E+00	NO	8.59E-01	N/A
MW373	Downgradient	Yes	2.67E+00	NO	9.82E-01	N/A
MW385	Sidegradient	Yes	1.52E+00	NO	4.19E-01	N/A
MW388	Downgradient	Yes	1.80E+00	NO	5.88E-01	N/A
MW392	Downgradient	Yes	2.03E+00	NO	7.08E-01	N/A
MW395	Upgradient	Yes	1.55E+00	NO	4.38E-01	N/A
MW397	Upgradient	Yes	1.77E+00	NO	5.71E-01	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CVCoefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5 S
- Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)
- Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Radium-226 UNITS: pCi/L LRGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 0.039 S= 0.419 CV(1)=10.740 K factor**= 2.523 TL(1)=1.10E+00 LL(1)=N/A

 Statistics-Transformed
 X= -1.695 S= 1.043 CV(2)=-0.615 K factor**= 2.523 TL(2)=-4.14E-01 LL(2)=N/A

Background Data

Historical Background Data from Upgradient Wells with Transformed Result

Well Number:	MW395	
Date Collected	Result	LN(Result)
10/16/2002	6.61E-01	-4.14E-01
1/13/2003	-8.39E-01	#Func!
10/14/2003	2.66E-02	-3.63E+00
1/13/2004	-7.77E-02	#Func!
4/12/2004	-1.15E-01	#Func!
7/20/2004	1.05E-01	-2.25E+00
10/12/2004	4.08E-01	-8.96E-01
1/18/2005	5.64E-02	-2.88E+00
Well Number:	MW397	
Well Number: Date Collected	MW397 Result	LN(Result)
		LN(Result) -5.52E-01
Date Collected	Result	
Date Collected 10/17/2002	Result 5.76E-01	-5.52E-01
Date Collected 10/17/2002 1/13/2003	Result 5.76E-01 -8.41E-01	-5.52E-01 #Func!
Date Collected 10/17/2002 1/13/2003 10/14/2003	Result 5.76E-01 -8.41E-01 -1.79E-01	-5.52E-01 #Func! #Func!
Date Collected 10/17/2002 1/13/2003 10/14/2003 1/13/2004	Result 5.76E-01 -8.41E-01 -1.79E-01 -5.64E-02	-5.52E-01 #Func! #Func! #Func!
Date Collected 10/17/2002 1/13/2003 10/14/2003 1/13/2004 4/12/2004	Result 5.76E-01 -8.41E-01 -1.79E-01 -5.64E-02 1.74E-01	-5.52E-01 #Func! #Func! #Func! -1.75E+00

Because CV(1) is greater than 1, the natural logarithm of background and test well results were calculated utilizing TL(2) for comparison.

#Because the natural log was not possible for all background values, the TL was considered equal to the maximum background value.

Current	Quarter Data					
Well No.	Gradient	Detected?	Result	Result >TL(1)	? LN(Result)	LN(Result) >TL(2)
MW370	Downgradient	No	6.83E-01	N/A	-3.81E-01	N/A
MW373	Downgradient	No	5.29E-01	N/A	-6.37E-01	N/A
MW385	Sidegradient	No	4.57E-01	N/A	-7.83E-01	N/A
MW388	Downgradient	Yes	1.85E+00) N/A	6.15E-01	YES
MW392	Downgradient	No	3.13E-01	N/A	-1.16E+00	N/A
MW395	Upgradient	No	4.93E-01	N/A	-7.07E-01	N/A
MW397	Upgradient	Yes	8.86E-01	N/A	-1.21E-01	YES
N/A Decu	Its identified as N	on Detecto	during lab	aratary analysis s	r data validatio	n and were not

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to historical background data.

Wells with Exceedances

MW388 MW397

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

- S Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Sodium UNITS: mg/L LRGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 29.560
 S= 13.894 CV(1)=0.470
 K factor**= 2.523
 TL(1)= 6.46E+01
 LL(1)=N/A

 Statistics-Transformed
 X= 2.615
 S= 2.411 CV(2)=0.922
 K factor**= 2.523
 TL(2)= 8.70E+00
 LL(2)=N/A

Background Data

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW395 Date Collected Result LN(Result) 8/13/2002 2.70E+013.30E+00 9/16/2002 2.72E+01 3.30E+00 10/16/2002 2.53E-02 -3.68E+00 1/13/2003 2.26E+01 3.12E+00 4/10/2003 5.39E+01 3.99E+00 7/16/2003 3.00E+01 3.40E+00 10/14/2003 2.91E+01 3.37E+00 1/13/2004 2.64E+01 3.27E+00 Well Number: MW397 Date Collected Result LN(Result) 8/13/2002 3.52E+01 3.56E+00 9/16/2002 3.43E+01 3.54E+00 10/17/2002 3.36E-02 -3.39E+00 1/13/2003 3.13E+01 3.44E+00 4/8/2003 4.61E+01 3.83E+00 7/16/2003 3.84E+01 3.65E+00 10/14/2003 3.71E+01 3.61E+00 1/13/2004 3.43E+01 3.54E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current	Quarter	Data

Well No.	Gradient	Detected?	Result	Result >TL(1)	? LN(Result)	LN(Result) >TL(2)
MW370	Downgradient	Yes	4.19E+01	NO	3.74E+00	N/A
MW373	Downgradient	Yes	7.14E+01	YES	4.27E+00	N/A
MW385	Sidegradient	Yes	4.19E+01	NO	3.74E+00	N/A
MW388	Downgradient	Yes	4.82E+01	NO	3.88E+00	N/A
MW392	Downgradient	Yes	2.35E+01	NO	3.16E+00	N/A
MW395	Upgradient	Yes	3.08E+01	NO	3.43E+00	N/A
MW397	Upgradient	Yes	3.23E+01	NO	3.48E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to historical background data.

Wells with Exceedances

MW373

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Sulfate UNITS: mg/L LRGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 10.756
 S= 2.147
 CV(1)=0.200
 K factor**= 2.523
 TL(1)= 1.62E+01
 LL(1)=N/A

 Statistics-Transformed Background Data
 X= 2.356
 S= 0.203
 CV(2)=0.086
 K factor**= 2.523
 TL(2)= 2.87E+00
 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW395 Date Collected Result LN(Result) 8/13/2002 1.03E+01 2.33E+00 9/16/2002 9.10E+00 2.21E+00 10/16/2002 8.80E+002.17E+00 1/13/2003 9.00E+00 2.20E+00 4/10/2003 8.30E+00 2.12E+00 7/16/2003 8.20E+00 2.10E+00 10/14/2003 8.30E+00 2.12E+00 1/13/2004 8.20E+00 2.10E+00 Well Number: MW397 Date Collected Result LN(Result) 8/13/2002 1.40E+01 2.64E+00 9/16/2002 1.28E+01 2.55E+00 10/17/2002 1.23E+01 2.51E+00 1/13/2003 1.27E+01 2.54E+00 4/8/2003 1.28E+01 2.55E+00 7/16/2003 1.31E+01 2.57E+00 10/14/2003 1.21E+01 2.49E+001/13/2004 1.21E+01 2.49E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current Quarter Data	a
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Well No.	Gradient	Detected?	Result	Result >TL(1)? LN(Result)	LN(Result) >TL(2)
MW370	Downgradien	t Yes	2.08E+01	YES	3.03E+00	N/A
MW373	Downgradien	t Yes	2.13E+02	YES	5.36E+00	N/A
MW385	Sidegradient	Yes	1.92E+01	YES	2.95E+00	N/A
MW388	Downgradien	t Yes	2.06E+01	YES	3.03E+00	N/A
MW392	Downgradien	t Yes	7.73E+00) NO	2.05E+00	N/A
MW395	Upgradient	Yes	1.11E+01	NO	2.41E+00	N/A
MW397	Upgradient	Yes	1.18E+01	NO	2.47E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to historical background data.

Wells with Exceedances

MW370 MW373 MW385 MW388

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Technetium-99 UNITS: pCi/L LRGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 11.359
 S= 9.138
 CV(1)=0.805
 K factor**= 2.523
 TL(1)= 3.44E+01
 LL(1)=N/A

 Statistics-Transformed Background Data
 X= 2.398
 S= 0.859
 CV(2)=0.358
 K factor**= 2.523
 TL(2)= 3.25E+00
 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW395 Date Collected Result LN(Result) 8/13/2002 2.08E+01 3.03E+00 9/16/2002 1.62E+01 2.79E+00 10/16/2002 8.28E+00 2.11E+00 1/13/2003 1.30E+01 2.56E+00 4/10/2003 -9.37E+00 #Func! 7/16/2003 8.26E-01 -1.91E-01 10/14/2003 1.41E+01 2.65E+00 1/13/2004 0.00E+00#Func! Well Number: MW397 Date Collected Result LN(Result) 8/13/2002 6.06E+00 1.80E+00 9/16/2002 1.73E+01 2.85E+00 10/17/2002 2.57E+01 3.25E+00 1/13/2003 2.09E+01 3.04E+00 4/8/2003 2.01E+01 3.00E+00 9.20E+00 7/16/2003 2.22E+00 10/14/2003 1.01E+01 2.31E+00 1/13/2004 8.54E+00 2.14E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

#Because the natural log was not possible for all background values, the TL was considered equal to the maximum background value.

Current	Quarter Data					
Well No.	Gradient I	Detected?	Result Res	sult >TL(1)	? LN(Result)	LN(Result) >TL(
MW370	Downgradient	No	-4.19E+00	N/A	#Error	N/A
MW373	Downgradient	No	-8.77E+00	N/A	#Error	N/A
MW385	Sidegradient	Yes	4.59E+01	YES	3.83E+00	N/A
MW388	Downgradient	No	2.57E+00	N/A	9.44E-01	N/A
MW392	Downgradient	No	6.64E-01	N/A	-4.09E-01	N/A
MW395	Upgradient	No	3.05E+00	N/A	1.12E+00	N/A
MW397	Upgradient	No	9.13E+00	N/A	2.21E+00	N/A
DI/A D	1. 11 .10 1 31	ъ.,			1 . 111	4

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to historical background data.

Wells with Exceedances

MW385

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Total Organic Carbon (TOC) UNITS: mg/L LRGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data	X = 1.544	S = 0.856	CV(1)=0.554	K factor**= 2.523	TL(1)= 3.70E+00 LL(1)=N/A
Statistics-Transformed Background Data	X = 0.325	S = 0.452	CV(2)= 1.393	K factor**= 2.523	TL(2)= 1.46E+00 LL(2)=N/A

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW395 Date Collected Result LN(Result) 8/13/2002 1.60E+00 4.70E-01 9/16/2002 1.10E+00 9.53E-02 10/16/2002 1.00E+00 0.00E+001/13/2003 2.00E+00 6.93E-01 4/10/2003 3.40E+00 1.22E+00 7/16/2003 2.00E+00 6.93E-01 10/14/2003 1.00E+00 0.00E+001/13/2004 1.00E+00 0.00E+00Well Number: MW397 Date Collected Result LN(Result) 8/13/2002 1.00E+00 0.00E+009/16/2002 1.00E+00 0.00E+0010/17/2002 1.00E+00 0.00E+001/13/2003 3.60E+00 1.28E+00 6.42E-01 4/8/2003 1.90E+00 7/16/2003 1.10E+00 9.53E-02 10/14/2003 1.00E+00 0.00E+001/13/2004 1.00E+00 0.00E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current	Quarter Data					
Well No.	Gradient	Detected?	Result	Result >TL(1)? LN(Result)	LN(Result) >TL(2)
MW370	Downgradien	t Yes	7.98E-01	NO	-2.26E-01	N/A
MW373	Downgradien	t Yes	1.14E+00) NO	1.31E-01	N/A
MW385	Sidegradient	Yes	6.97E-01	NO	-3.61E-01	N/A
MW388	Downgradien	t Yes	9.08E-01	NO	-9.65E-02	N/A
MW392	Downgradien	t Yes	5.10E-01	NO	-6.73E-01	N/A
MW395	Upgradient	Yes	5.73E-01	NO	-5.57E-01	N/A
MW397	Upgradient	Yes	5.36E-01	NO	-6.24E-01	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Total Organic Halides (TOX) UNITS: ug/L LRGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 31.513
 S= 18.609
 CV(1)=0.591
 K factor**= 2.523
 TL(1)= 7.85E+01
 LL(1)=N/A

 Statistics-Transformed Background Data
 X= 3.240
 S= 0.707
 CV(2)=0.218
 K factor**= 2.523
 TL(2)= 5.02E+00
 LL(2)=N/A

Current Quarter Data

MW397 Upgradient

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW395 Date Collected Result LN(Result) 8/13/2002 5.00E+01 3.91E+00 9/16/2002 5.00E+01 3.91E+00 3.91E+00 10/16/2002 5.00E+01 1/13/2003 2.91E+00 1.83E+01 4/10/2003 5.12E+01 3.94E+00 7/16/2003 4.26E+01 3.75E+00 10/14/2003 1.23E+01 2.51E+00 1/13/2004 1.00E+01 2.30E+00 Well Number: MW397 Date Collected Result LN(Result) 8/13/2002 5.00E+01 3.91E+00 9/16/2002 5.00E+01 3.91E+00 10/17/2002 5.00E+01 3.91E+00 1/13/2003 1.20E+01 2.48E+00 4/8/2003 1.99E+01 2.99E+00 7/16/2003 1.79E+01 2.88E+00 10/14/2003 1.00E+01 2.30E+00 1/13/2004 1.00E+01 2.30E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

1.61E+00

N/A

Current	Quarter Data					
Well No.	Gradient	Detected?	Result	Result >TL	(1)? LN(Result)	LN(Result) >TL(2)
MW370	Downgradien	t Yes	1.11E+01	NO	2.41E+00	N/A
MW373	Downgradien	t Yes	3.66E+01	NO	3.60E+00	N/A
MW385	Sidegradient	Yes	1.65E+01	NO	2.80E+00	N/A
MW388	Downgradien	t Yes	1.21E+01	NO	2.49E+00	N/A
MW392	Downgradien	t Yes	8.76E+00) NO	2.17E+00	N/A
MW395	Upgradient	Yes	1.89E+01	NO	2.94E+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

NO

5.00E+00

Yes

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Trichloroethene UNITS: ug/L LRGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X=7.313
 S= 5.701
 CV(1)=0.780
 K factor**= 2.523
 TL(1)= 2.17E+01
 LL(1)=N/A

 Statistics-Transformed Background Data
 X= 1.467
 S= 1.213
 CV(2)=0.827
 K factor**= 2.523
 TL(2)= 4.53E+00
 LL(2)=N/A

Current Quarter Data

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW395 Date Collected Result LN(Result) 8/13/2002 1.10E+01 2.40E+00 9/30/2002 1.40E+01 2.64E+00 10/16/2002 1.20E+01 2.48E+00 1/13/2003 1.40E+01 2.64E+004/10/2003 1.40E+01 2.64E+00 7/16/2003 1.30E+01 2.56E+00 10/14/2003 1.20E+01 2.48E+00 1/13/2004 1.10E+01 2.40E+00 Well Number: MW397 Date Collected Result LN(Result) 8/13/2002 5.00E+00 1.61E+00 9/30/2002 5.00E+00 1.61E+00 10/17/2002 1.00E+00 0.00E+001/13/2003 1.00E+00 0.00E+004/8/2003 1.00E+00 0.00E+007/16/2003 1.00E+00 0.00E+0010/14/2003 1.00E+00 0.00E+001/13/2004 1.00E+00 0.00E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

>TL(2)

Well No.	Gradient	Detected?	Result	Result >TL	(1)? LN(Result)	LN(Result)
MW370	Downgradien	t Yes	2.10E+00) N/A	7.42E-01	N/A
MW373	Downgradien	t Yes	2.54E+00) N/A	9.32E-01	N/A
MW385	Sidegradient	No	1.00E+00) N/A	0.00E+00	N/A

N/A MW388 Downgradient No 1.00E+00N/A 0.00E+00MW392 Downgradient Yes 4.04E+00 N/A 1.40E+00 N/A MW395 Upgradient Yes 5.29E+00 NO 1.67E+00 N/A MW397 Upgradient 1.00E+00 N/A 0.00E+00N/A No

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Historical Background Comparison Zinc UNITS: mg/L LRGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is evidence of an exceedance of the statistically-derived historical background concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 0.044
 S= 0.034
 CV(1)=0.760
 K factor**= 2.523
 TL(1)= 1.29E-01
 LL(1)=N/A

 Statistics-Transformed
 X= -3.342
 S= 0.659
 CV(2)=-0.197
 K factor**= 2.523
 TL(2)= -1.68E+00
 LL(2)=N/A

MW397 Upgradient

Background Data

Historical Background Data from Upgradient Wells with Transformed Result

Well Number: MW395 Date Collected Result LN(Result) 8/13/2002 1.00E-01 -2.30E+00 9/16/2002 1.00E-01 -2.30E+00 10/16/2002 2.50E-02 -3.69E+00 1/13/2003 3.50E-02 -3.35E+00 4/10/2003 3.50E-02 -3.35E+00 7/16/2003 2.00E-02 -3.91E+00 2.00E-02 10/14/2003 -3.91E+00 1/13/2004 2.00E-02 -3.91E+00 Well Number: MW397 Date Collected Result LN(Result) 8/13/2002 1.00E-01 -2.30E+00 9/16/2002 1.00E-01 -2.30E+00 10/17/2002 2.50E-02 -3.69E+00 1/13/2003 3.50E-02 -3.35E+00 4/8/2003 3.50E-02 -3.35E+00 7/16/2003 2.00E-02 -3.91E+00 10/14/2003 2.00E-02 -3.91E+00 1/13/2004 2.00E-02 -3.91E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

-5.55E+00

N/A

Current						
Well No.	Gradient	Detected?	Result	Result >TL(1)	? LN(Result)	LN(Result) >TL(2)
MW370	Downgradient	Yes	3.77E-03	NO	-5.58E+00	N/A
MW373	Downgradient	No	2.00E-02	N/A	-3.91E+00	N/A
MW385	Sidegradient	No	2.00E-02	N/A	-3.91E+00	N/A
MW388	Downgradient	Yes	4.62E-03	NO	-5.38E+00	N/A
MW392	Downgradient	No	2.00E-02	N/A	-3.91E+00	N/A
MW395	Ungradient	No	2.00F-02	N/A	-3 91F+00	N/A

N/A - Results identified as Non-Detects during laboratory analysis or data validation and were not included in the statistical evaluation. Additionally for parameters that have MCLs, where the result for a well did not exceed the MCL value, that well was not included in the statistical evaluation.

NO

3.87E-03

Yes

Conclusion of Statistical Analysis on Historical Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from historical background concentrations to a statistically-significant level.

- CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.



ATTACHMENT D2

COMPARISON OF CURRENT DATA TO ONE-SIDED UPPER TOLERANCE INTERVAL TEST CALCULATED USING CURRENT BACKGROUND DATA



C-746-S/T Third Quarter 2024 Statistical Analysis Oxidation-Reduction Potential UNITS: mV

Current Background Comparison UCRS

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X= 291.000 **S**= 58.275 **CV(1)**=0.200

K factor**= 3.188 TL(1)=

TL(1)= 4.77E+02 **LL(1)**=N/A

Statistics-Transformed Background Data

X = 5.656 S = 0.199 CV(2) = 0.035

K factor**= 3.188 TL

TL(2)= 6.29E+00 **LL(2)**=N/A

Current Background Data from Upgradient Wells with Transformed Result

Well Number: MW396 Date Collected Result LN(Result) 7/20/2022 3.83E+02 5.95E+00 10/17/2022 2.17E+025.38E+00 1/25/2023 2.40E+02 5.48E+00 4/27/2023 2.50E+02 5.52E+00 7/27/2023 3.15E+02 5.75E+00 2.62E+02 5.57E+00 10/18/2023 1/30/2024 3.08E+02 5.73E+00 4/16/2024 3.53E+02 5.87E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current Quarter Data

Well No.	Gradient	Detected?	Result	Result $>$ TL(1)?	LN(Result)	LN(Result) >TL(2)
MW386	Sidegradient	Yes	3.31E+02	. NO	5.80E+00	N/A
MW390	Downgradient	t Yes	4.79E+02	YES	6.17E+00	N/A
MW393	Downgradient	t Yes	3.83E+02	. NO	5.95E+00	N/A
MW396	Upgradient	Yes	3.73E+02	. NO	5.92E+00	N/A

Conclusion of Statistical Analysis on Current Data

Wells with Exceedances

MW390

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to current background data.

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$

TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis

I Analysis Current Background Comparison UNITS: pCi/L UCRS

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data X

X= 0.272 **S**= 0.209 **CV(1)**= 0.767

K factor**= 3.188 TL(1)= 9.38E-01 LL(1)=N/A

Statistics-Transformed Background Data

7/27/2023

10/18/2023

1/30/2024

4/16/2024

Radium-226

X=-1.605 S= 0.896 CV(2)=-0.559

K factor=** 3.188 **TL(2)=** 1.25E+00 **LL(2)=**N/A

Current Background Data from Upgradient Wells with Transformed Result

Well Number: MW396 Date Collected Result LN(Result) 7/20/2022 -1.67E+00 1.89E-01 10/17/2022 3.89E-01 -9.44E-01 1/25/2023 4.09E-01 -8.94E-01 4/27/2023 4.36E-02 -3.13E+00

1.33E-01

8.92E-02

6.73E-01

2.54E-01

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current Quarter Data

Well No. Gradient Detected? Result >TL(1)? LN(Result) LN(Result) >TL(2) MW390 Downgradient Yes 7.71E-01 NO -2.60E-01 N/A MW396 Upgradient Yes 9.94E-01 YES -6.02E-03 N/A

Conclusion of Statistical Analysis on Current Data

-2.02E+00

-2.42E+00

-3.96E-01

-1.37E+00

Wells with Exceedances

MW396

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to current background data.

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$

TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Technetium-99 UNITS: pC

I Analysis Current Background Comparison UNITS: pCi/L UCRS

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 0.498
 S= 6.694
 CV(1)=13.455
 K factor**= 3.188
 TL(1)= 2.18E+01
 LL(1)=N/A

 Statistics-Transformed
 X= 1.761
 S= 0.392
 CV(2)=0.223
 K factor**= 3.188
 TL(2)= 2.22E+00
 LL(2)=N/A

Current Background Data from Upgradient Wells with Transformed Result

Background Data

Well Number: MW396 Date Collected Result LN(Result) 7/20/2022 -1.59E+00 #Func! 10/17/2022 1.95E+00 7.04E+001/25/2023 -1.01E+01 #Func! 4/27/2023 9.19E+00 2.22E+00 7/27/2023 3.97E+00 1.38E+00 1.50E+00 10/18/2023 4.46E+00 1/30/2024 -5.21E+00 #Func! 4/16/2024 -3.78E+00 #Func!

Because CV(1) is greater than 1, the natural logarithm of background and test well results were calculated utilizing TL(2) for comparison.

#Because the natural log was not possible for all background values, the TL was considered equal to the maximum background value.

Current	Quarter	Data
---------	---------	------

Well No.	Gradient	Detected?	Result	Result $>$ TL(1)?	LN(Result)	LN(Result) >TL(2)
MW390	Downgradient	Yes	5.74E+01	N/A	4.05E+00	YES

Conclusion of Statistical Analysis on Current Data

Wells with Exceedances

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to current background data.

MW390

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$

TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis

Current Background Comparison UNITS: mg/L **URGA**

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

CV(1)=0.129

Statistics-Background Data

X = 24.500 S = 3.171

K factor=** 2.523

TL(1)=3.25E+01 LL(1)=N/A

Statistics-Transformed Background Data

10/17/2023

1/30/2024

4/16/2024

Calcium

X = 3.191S = 0.133CV(2) = 0.042

K factor**= 2.523 TL(2)= 3.53E+00 LL(2)=N/A

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current Background Data from Upgradient Wells with Transformed Result

Well Number:	MW220	
Date Collected	Result	LN(Result)
7/18/2022	2.04E+01	3.02E+00
10/18/2022	2.05E+01	3.02E+00
1/23/2023	2.01E+01	3.00E+00
5/1/2023	2.82E+01	3.34E+00
7/28/2023	2.21E+01	3.10E+00
10/16/2023	2.16E+01	3.07E+00
1/29/2024	2.02E+01	3.01E+00
4/11/2024	2.33E+01	3.15E+00
Well Number:	MW394	
Date Collected	Result	LN(Result)
7/20/2022	2.61E+01	3.26E+00
10/17/2022	2.66E+01	3.28E+00
1/25/2023	2.69E+01	3.29E+00
4/27/2023	2.69E+01	3.29E+00
7/27/2023	2.65E+01	3.28E+00

2.79E+01

2.68E+01

2.79E+01

Cumont	Ononton	Data
Current	Quarter	Data

Well No.	Gradient	Detected?	Result	Result >TL(1)?	LN(Result)	LN(Result) >TL(2)
MW372	Downgradien	t Yes	6.59E+01	YES	4.19E+00	N/A

Conclusion of Statistical Analysis on Current Data

3.33E+00

3.29E+00

3.33E+00

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to current background data.

Wells with Exceedances

MW372

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$

TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

Mean, X = (sum of background results)/(count of background results)X

** Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009. D2-6

C-746-S/T Third Quarter 2024 Statistical Analysis

UNITS: mg/L

URGA

Current Background Comparison

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the

Statistics-Background Data

X= 23.481 **S**= 14.944 **CV(1)**= 0.636

LL, that is statistically significant evidence of elevated or lowered concentration in that well.

K factor**= 2.523 TL

TL(1)= 6.12E+01 **LL(1)=**N/A

Statistics-Transformed Background Data

X = 3.065 S = 0.367 CV(2) = 0.120

K factor=** 2.523

TL(2)= 3.99E+00 **LL(2)**=N/A

Current Background Data from Upgradient Wells with Transformed Result

Chemical Oxygen Demand (COD)

Well Number: MW220 Date Collected Result LN(Result) 7/18/2022 3.00E+00 2.00E+01 10/18/2022 1.30E+01 2.56E+00 1/23/2023 2.00E+01 3.00E+00 5/1/2023 2.00E+01 3.00E+00 7/31/2023 2.00E+01 3.00E+00 10/16/2023 2.00E+01 3.00E+00

1/29/2024 2.00E+01 3.00E+00 4/11/2024 2.00E+01 3.00E+00

Well Number: MW394 Date Collected Result LN(Result) 7/20/2022 2.00E+01 3.00E+00 10/17/2022 2.37E+01 3.17E+00 1/25/2023 2.00E+01 3.00E+00 4/27/2023 2.00E+01 3.00E+00 7/27/2023 2.00E+01 3.00E+00 10/17/2023 2.00E+01 3.00E+00 1/30/2024 2.00E+01 3.00E+00 7.90E+01 4/16/2024 4.37E+00

1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Because CV(1) is less than or equal to

Current Quarter Data

Well No.	Gradient	Detected?	Result	Result $>$ TL(1)?	LN(Result)	LN(Result) > TL(2)
MW387	Downgradient	Yes	4.21E+01	l NO	3.74E+00	N/A

Conclusion of Statistical Analysis on Current Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from current background concentrations to a statistically-significant level.

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis **Current Background Comparison** UNITS: umho/cm **URGA Conductivity**

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X = 379.875 S = 36.262 CV(1) = 0.095

K factor**= 2.523

TL(1)=4.71E+02 LL(1)=N/A

Statistics-Transformed Background Data

1/30/2024

4/16/2024

X = 5.935 S = 0.098 CV(2) = 0.016

K factor**= 2.523 TL(2)= 6.18E+00 LL(2)=N/A

Current Background Data from Upgradient Wells with Transformed Result

Well Number: MW220

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

well Number:	M W 220	
Date Collected	Result	LN(Result)
7/18/2022	3.50E+02	5.86E+00
10/18/2022	3.32E+02	5.81E+00
1/23/2023	3.34E+02	5.81E+00
5/1/2023	4.20E+02	6.04E+00
7/31/2023	3.54E+02	5.87E+00
10/16/2023	3.23E+02	5.78E+00
1/29/2024	3.31E+02	5.80E+00
4/11/2024	3.78E+02	5.93E+00
Wall Number	MW204	

7/18/2022	3.50E+02	5.86E+00
10/18/2022	3.32E+02	5.81E+00
1/23/2023	3.34E+02	5.81E+00
5/1/2023	4.20E+02	6.04E+00
7/31/2023	3.54E+02	5.87E+00
10/16/2023	3.23E+02	5.78E+00
1/29/2024	3.31E+02	5.80E+00
4/11/2024	3.78E+02	5.93E+00
Well Number:	MW394	
Well Number: Date Collected	MW394 Result	LN(Result)
		LN(Result) 5.96E+00
Date Collected	Result	` /
Date Collected 7/20/2022	Result 3.87E+02	5.96E+00
Date Collected 7/20/2022 10/17/2022	Result 3.87E+02 4.17E+02	5.96E+00 6.03E+00
Date Collected 7/20/2022 10/17/2022 1/25/2023	Result 3.87E+02 4.17E+02 4.04E+02	5.96E+00 6.03E+00 6.00E+00

4.07E+02

4.14E+02

Current	Quarter	Data
Current	Z umi tei	Dutte

Well No.	Gradient	Detected?	Result	Result $>$ TL(1)?	LN(Result)	LN(Result) >TL(2)
MW372	Downgradien	t Yes	7.49E+02	YES	6.62E+00	N/A

Conclusion of Statistical Analysis on Current Data

6.01E+00

6.03E+00

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to current background data.

Wells with Exceedances

MW372

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from

Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$

TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009. D2-8

C-746-S/T Third Quarter 2024 Statistical Analysis **Dissolved Solids** UNITS: mg/L

Current Background Comparison URGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X = 185.813 S = 14.232 CV(1) = 0.077

K factor=** 2.523

TL(1)=2.22E+02 LL(1)=N/A

Statistics-Transformed Background Data

1/29/2024

X = 5.222 S = 0.079CV(2) = 0.015 **K factor**=** 2.523

TL(2)=5.42E+00 LL(2)=N/A

Current Background Data from Upgradient Wells with Transformed Result

Well Number: MW220 Date Collected Result LN(Result) 7/18/2022 5.10E+00 1.64E+02 10/18/2022 1.79E+025.19E+00 1/23/2023 1.72E+02 5.15E+00 5/1/2023 2.02E+02 5.31E+00 7/31/2023 1.76E+02 5.17E+00 10/16/2023 1.58E+02 5.06E+00

4/11/2024 1.98E+02 5.29E+00 Well Number: MW394 Date Collected Result

1.90E+02

5.25E+00

LN(Result) 7/20/2022 1.93E+02 5.26E+00 10/17/2022 5.29E+00 1.98E+02 1/25/2023 1.84E+02 5.21E+00 4/27/2023 1.96E+02 5.28E+00 7/27/2023 2.01E+02 5.30E+00 10/17/2023 1.70E+02 5.14E+00 2.00E+02 1/30/2024 5.30E+00 4/16/2024 1.92E+02 5.26E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current Quarter Data

Well No. Gradient Detected? Result >TL(1)? LN(Result) LN(Result) >TL(2) MW372 Downgradient Yes 4.96E+02 YES 6.21E+00 N/A

Conclusion of Statistical Analysis on Current Data

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to current background data.

Wells with Exceedances

MW372

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5 S

TLUpper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

Mean, X = (sum of background results)/(count of background results)X

Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009. D2-9

C-746-S/T Third Quarter 2024 Statistical Analysis

I Analysis Current Background Comparison UNITS: mg/L URGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 10.233
 S= 1.421
 CV(1)=0.139
 K factor**= 2.523
 TL(1)= 1.38E+01
 LL(1)=N/A

 Statistics-Transformed
 X= 2.316
 S= 0.143
 CV(2)=0.062
 K factor**= 2.523
 TL(2)= 2.68E+00
 LL(2)=N/A

Current Background Data from Upgradient Wells with Transformed Result

Magnesium

Background Data

10/17/2022

1/25/2023

4/27/2023

7/27/2023

10/17/2023

1/30/2024

4/16/2024

Well Number: MW220 Date Collected Result LN(Result) 7/18/2022 2.16E+00 8.67E+00 10/18/2022 8.36E+00 2.12E+00 1/23/2023 8.28E+00 2.11E+00 5/1/2023 1.19E+01 2.48E+00 7/28/2023 8.97E+00 2.19E+00 10/16/2023 8.85E+00 2.18E+00 1/29/2024 8.23E+00 2.11E+00 4/11/2024 9.96E+00 2.30E+00 Well Number: MW394 Date Collected Result LN(Result) 7/20/2022 2.46E+00 1.17E+01

1.12E+01

1.14E+01

1.13E+01

1.07E+01

1.16E+01

1.10E+01

1.16E+01

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current	Quarter	Data
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Well No.	Gradient	Detected?	Result	Result $>TL(1)$?	LN(Result)	LN(Result) >TL(2)
MW372	Downgradien	t Yes	2.26E+01	YES	3.12E+00	N/A
MW387	Downgradien	t Yes	1.63E+01	YES	2.79E+00	N/A

Conclusion of Statistical Analysis on Current Data

2.42E+00

2.43E+00

2.42E+00

2.37E+00

2.45E+00

2.40E+00

2.45E+00

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to current background data.

Wells with Exceedances

MW372 MW387

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$

TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

Current Background Comparison URGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

UNITS: mV

Statistics-Background Data

X = 431.375 S = 52.676 CV(1) = 0.122

K factor**= 2.523 TL(1)=5.64E+02 LL(1)=N/A

Statistics-Transformed Background Data

X = 6.060 S = 0.124 CV(2) = 0.020

K factor**= 2.523 TL(2)= 6.37E+00 LL(2)=N/A

Current Background Data from Upgradient

Oxidation-Reduction Potential

Wells with Transformed Result

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Well Number:	MW220	
Date Collected	Result	LN(Result)
7/18/2022	4.11E+02	6.02E+00
10/18/2022	3.98E+02	5.99E+00
1/23/2023	3.66E+02	5.90E+00
5/1/2023	4.77E+02	6.17E+00
7/31/2023	3.77E+02	5.93E+00
10/16/2023	4.06E+02	6.01E+00
1/29/2024	4.63E+02	6.14E+00
4/11/2024	3.66E+02	5.90E+00
Well Number:	MW394	
Well Number: Date Collected	MW394 Result	LN(Result)
	111 0 , .	LN(Result) 6.19E+00
Date Collected	Result	,
Date Collected 7/20/2022	Result 4.87E+02	6.19E+00
Date Collected 7/20/2022 10/17/2022	Result 4.87E+02 3.46E+02	6.19E+00 5.85E+00
Date Collected 7/20/2022 10/17/2022 1/25/2023	Result 4.87E+02 3.46E+02 4.69E+02	6.19E+00 5.85E+00 6.15E+00
Date Collected 7/20/2022 10/17/2022 1/25/2023 4/27/2023	Result 4.87E+02 3.46E+02 4.69E+02 4.51E+02	6.19E+00 5.85E+00 6.15E+00 6.11E+00
Date Collected 7/20/2022 10/17/2022 1/25/2023 4/27/2023 7/27/2023	Result 4.87E+02 3.46E+02 4.69E+02 4.51E+02 4.94E+02	6.19E+00 5.85E+00 6.15E+00 6.11E+00 6.20E+00

Current	Quarter Data					
Well No.	Gradient	Detected?	Result	Result >TL(1)?	LN(Result)	LN(Result) >TL(2)
MW221	Sidegradient	Yes	4.39E+02	NO	6.08E+00	N/A
MW223	Sidegradient	Yes	4.19E+02	NO	6.04E+00	N/A
MW369	Downgradient	Yes	4.62E+02	NO	6.14E+00	N/A
MW372	Downgradient	Yes	4.52E+02	NO	6.11E+00	N/A
MW384	Sidegradient	Yes	4.28E+02	NO	6.06E+00	N/A
MW387	Downgradient	Yes	4.13E+02	NO	6.02E+00	N/A
MW394	Upgradient	Yes	4.04E+02	NO	6.00E+00	N/A

Conclusion of Statistical Analysis on Current Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from current background concentrations to a statistically-significant level.

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from

- Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)
- Mean, X = (sum of background results)/(count of background results)X

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009. D2-11

C-746-S/T Third Quarter 2024 Statistical Analysis Radium-226 UNITS: pCi/L

Current Background Comparison L URGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 0.266
 S= 0.197
 CV(1)=0.740
 K factor**= 2.523
 TL(1)= 7.62E-01
 LL(1)=N/A

 Statistics-Transformed
 X= -1.316
 S= 0.646
 CV(2)=-0.491
 K factor**= 2.523
 TL(2)= -4.88E-01
 LL(2)=N/A

Background Data

Current Background Data from Upgradient Wells with Transformed Result

Well Number:	MW220	
Date Collected	Result	LN(Result)
7/18/2022	3.34E-01	-1.10E+00
10/18/2022	2.70E-01	-1.31E+00
1/23/2023	2.40E-01	-1.43E+00
5/1/2023	3.24E-01	-1.13E+00
7/28/2023	5.51E-01	-5.96E-01
10/16/2023	5.31E-01	-6.33E-01
1/29/2024	1.75E-01	-1.74E+00
4/11/2024	3.34E-01	-1.10E+00
Well Number:	MW394	
Date Collected	Result	LN(Result)
7/20/2022	1.77E-01	-1.73E+00
10/17/2022	1.79E-01	-1.72E+00
1/25/2023	6.14E-01	-4.88E-01
4/27/2023	4.67E-02	-3.06E+00
7/27/2023	-1.02E-01	#Func!
10/17/2023	2.82E-01	-1.27E+00
1/30/2024	3.24E-01	-1.13E+00
4/16/2024	-2.39E-02	#Func!

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

#Because the natural log was not possible for all background values, the TL was considered equal to the maximum background value.

Current	Quarter	Data
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Well No.	Gradient	Detected?	Result	Result >TL(1)?	LN(Result)	LN(Result) >TL(2)
MW221	Sidegradient	Yes	1.07E+00	YES	6.77E-02	N/A
MW384	Sidegradient	Yes	1.08E+00	YES	7.70E-02	N/A

Conclusion of Statistical Analysis on Current Data

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to current background data.

Wells with Exceedances

MW221 MW384

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$

TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

Current Background Comparison UNITS: mg/L **URGA**

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X = 36.744 S = 5.260CV(1)=0.143 **K factor**=** 2.523

TL(1)=5.00E+01 LL(1)=N/A

Statistics-Transformed **Background Data**

Sodium

CV(2)=0.036 X = 3.596 S = 0.129

K factor**= 2.523 TL(2)= 3.92E+00 LL(2)=N/A

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current Background Data from Upgradient Wells with Transformed Result

Well Number:	MW220	
Date Collected	Result	LN(Result)
7/18/2022	3.81E+01	3.64E+00
10/18/2022	3.72E+01	3.62E+00
1/23/2023	3.77E+01	3.63E+00
5/1/2023	5.30E+01	3.97E+00
7/28/2023	3.85E+01	3.65E+00
10/16/2023	3.72E+01	3.62E+00
1/29/2024	3.58E+01	3.58E+00
4/11/2024	4.34E+01	3.77E+00
Well Number:	MW394	
Well Number: Date Collected	MW394 Result	LN(Result)
		LN(Result) 3.53E+00
Date Collected	Result	, ,
Date Collected 7/20/2022	Result 3.41E+01	3.53E+00
Date Collected 7/20/2022 10/17/2022	Result 3.41E+01 3.37E+01	3.53E+00 3.52E+00
Date Collected 7/20/2022 10/17/2022 1/25/2023	Result 3.41E+01 3.37E+01 3.40E+01	3.53E+00 3.52E+00 3.53E+00
Date Collected 7/20/2022 10/17/2022 1/25/2023 4/27/2023	Result 3.41E+01 3.37E+01 3.40E+01 3.32E+01	3.53E+00 3.52E+00 3.53E+00 3.50E+00
Date Collected 7/20/2022 10/17/2022 1/25/2023 4/27/2023 7/27/2023	Result 3.41E+01 3.37E+01 3.40E+01 3.32E+01 3.18E+01	3.53E+00 3.52E+00 3.53E+00 3.50E+00 3.46E+00

Current Quarter Data

Well No.	Gradient	Detected?	Result	Result >TL(1)?	LN(Result)	LN(Result) >TL(2)
MW224	Sideoradient	Ves 4	5.83F+01	VES	4.07F+00	N/A

Conclusion of Statistical Analysis on Current Data

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to current background data.

Wells with Exceedances

MW224

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$

TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009. D2-13

C-746-S/T Third Quarter 2024 Statistical Analysis Sulfate UNITS: n

I Analysis Current Background Comparison UNITS: mg/L URGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 14.550
 S= 2.971
 CV(1)=0.204
 K factor**= 2.523
 TL(1)= 2.20E+01
 LL(1)=N/A

 Statistics-Transformed
 X= 2.659
 S= 0.199
 CV(2)=0.075
 K factor**= 2.523
 TL(2)= 3.16E+00
 LL(2)=N/A

Current Background Data from Upgradient Wells with Transformed Result

Background Data

4/16/2024

Well Number: MW220 Date Collected Result LN(Result) 7/18/2022 2.92E+00 1.85E+01 10/18/2022 1.57E+01 2.75E+001/23/2023 1.64E+01 2.80E+00 5/1/2023 2.00E+01 3.00E+00 7/31/2023 1.78E+01 2.88E+00 10/16/2023 1.55E+01 2.74E+00 1/29/2024 1.47E+01 2.69E+00 4/11/2024 1.86E+01 2.92E+00 Well Number: MW394 Date Collected Result LN(Result) 7/20/2022 2.50E+00 1.22E+01 10/17/2022 2.49E+00 1.21E+01 1/25/2023 1.21E+01 2.49E+00 4/27/2023 1.17E+01 2.46E+00 7/27/2023 1.22E+01 2.50E+00 10/17/2023 1.17E+01 2.46E+00 1/30/2024 1.16E+01 2.45E+00

1.20E+01

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current Q	uarter	Data
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Well No.	Gradient	Detected?	Result	Result >TL(1)?	LN(Result)	LN(Result) >TL(2)
MW220	Upgradient	Yes	2.16E+01	NO	3.07E+00	N/A
MW224	Sidegradient	Yes	1.93E+01	NO	2.96E+00	N/A
MW372	Downgradien	t Yes	1.64E+02	YES	5.10E+00	N/A
MW384	Sidegradient	Yes	1.79E+01	NO	2.88E+00	N/A
MW387	Downgradien	t Yes	2.73E+01	YES	3.31E+00	N/A

Conclusion of Statistical Analysis on Current Data

2.48E+00

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to current background data.

Wells with Exceedances

MW372 MW387

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5

TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis **Current Background Comparison Technetium-99** UNITS: pCi/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data K factor=** 2.523 X = 12.023 S = 6.651CV(1)=0.553TL(1)=2.88E+01 LL(1)=N/A**Statistics-Transformed** X = 2.262S = 0.791CV(2) = 0.350**K factor**=** 2.523 TL(2)= 4.26E+00 LL(2)=N/A **Background Data**

Current Background Data from Upgradient Wells with Transformed Result

Well Number: MW220 Date Collected Result LN(Result) 7/18/2022 2.95E+00 1.92E+01 10/18/2022 2.13E+01 3.06E+001/23/2023 1.42E+01 2.65E+00 5/1/2023 1.13E+01 2.42E+00 7/28/2023 1.91E+01 2.95E+00 10/16/2023 1.58E+01 2.76E+00 1/29/2024 2.00E+01 3.00E+00 4/11/2024 1.64E+01 2.80E+00 Well Number: MW394 Date Collected Result LN(Result) 7/20/2022 1.91E+00 6.73E+00 10/17/2022 2.41E+00 1.11E+01 1/25/2023 1.64E+00 4.95E-01 6.79E+00 4/27/2023 1.92E+00 7/27/2023 4.32E+00 1.46E+00 10/17/2023 1.63E+01 2.79E+00 1/30/2024 2.34E+00 8.50E-01 4/16/2024 5.85E+00 1.77E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

URGA

Current	Quarter	Data
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Well No.	Gradient	Detected?	Result	Result >TL(1)?	LN(Result)	LN(Result) >TL
MW369	Downgradient	Yes	4.27E+01	YES	3.75E+00	N/A
MW384	Sidegradient	Yes	4.76E+01	YES	3.86E+00	N/A
MW387	Downgradient	Yes	3.46E+01	YES	3.54E+00	N/A

Conclusion of Statistical Analysis on Current Data

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to current background data.

Wells with Exceedances

(2)

MW369 MW384

MW387

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$

TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

Mean, X = (sum of background results)/(count of background results)X

Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009. D2-15

Current Background Comparison UNITS: mg/L **LRGA**

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X= 22.538 **S**= 4.440 CV(1)=0.197 **K factor**=** 2.523 TL(1)=3.37E+01 LL(1)=N/A

Statistics-Transformed Background Data

Calcium

X = 3.097**S**= 0.199 CV(2) = 0.064 **K** factor**= 2.523

TL(2)=3.60E+00 LL(2)=N/A

Current Background Data from Upgradient Wells with Transformed Result

Well Number: MW395 Date Collected Result LN(Result) 7/20/2022 3.21E+00 2.49E+01 10/17/2022 2.69E+01 3.29E+001/25/2023 2.69E+01 3.29E+00

4/27/2023 2.71E+01 3.30E+00 7/27/2023 2.62E+01 3.27E+00 10/18/2023 2.78E+01 3.33E+00 1/30/2024 2.66E+01 3.28E+00

4/16/2024 2.78E+01 3.33E+00

Well Number: MW397 Date Collected Result LN(Result) 7/18/2022 2.92E+00 1.85E+01 10/18/2022 2.93E+00 1.87E+01 1/23/2023 1.81E+01 2.90E+00 5/1/2023 1.87E+01 2.93E+00 7/27/2023 1.76E+01 2.87E+00 10/16/2023 1.86E+01 2.92E+00 1/30/2024 1.73E+01 2.85E+00 4/15/2024 1.89E+01 2.94E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current Quarter Data

Well No. Gradient Detected? Result >TL(1)? LN(Result) LN(Result) >TL(2) MW373 Downgradient Yes 8.59E+01 YES 4.45E+00 N/A

Conclusion of Statistical Analysis on Current Data

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to current background data.

Wells with Exceedances

MW373

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

Standard Deviation, S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5 S

TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009. D2-16

C-746-S/T Third Quarter 2024 Statistical Analysis Current Background Comparison Conductivity UNITS: umho/cm LRGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X= 354.250 **S**= 37.925 **CV(1)**=0.107

K factor=** 2.523 **TL(1)=** 4.50E+02 **LL(1)=**N/A

Statistics-Transformed Background Data

1/30/2024

4/15/2024

X = 5.865 S = 0.107 CV(2) = 0.018

K factor=** 2.523 **TL(2)=** 6.14E+00 **LL(2)=**N/A

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current Background Data from Upgradient Wells with Transformed Result

Well Number:	MW395	
Date Collected	Result	LN(Result)
7/20/2022	3.80E+02	5.94E+00
10/17/2022	3.88E+02	5.96E+00
1/25/2023	3.93E+02	5.97E+00
4/27/2023	4.05E+02	6.00E+00
7/27/2023	3.85E+02	5.95E+00
10/18/2023	3.83E+02	5.95E+00
1/30/2024	3.88E+02	5.96E+00
4/16/2024	4.01E+02	5.99E+00
Well Number:	MW397	
Date Collected	Result	LN(Result)
7/18/2022	3.20E+02	5.77E+00
10/18/2022	3.24E+02	5.78E+00
1/23/2023	3.22E+02	5.77E+00
5/1/2023	3.20E+02	5.77E+00
7/27/2023	3.19E+02	5.77E+00
10/16/2023	3.09E+02	5.73E+00

3.17E+02

3.14E+02

Current Quarter Data

Well No.	Gradient	Detected?	Result	Result >TL(1)?	LN(Result)	LN(Result) >TL(2)
MW373	Downgradien	t Yes	9.43E+02	YES	6.85E+00	N/A

Conclusion of Statistical Analysis on Current Data

5.76E+00

5.75E+00

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to current background data.

Wells with Exceedances

MW373

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Dissolved Solids UNITS: mg/L

Current Background Comparison L LRGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X = 173.438 S = 22.885 CV(1) = 0.132

K factor**= 2.523

TL(1)=2.31E+02 LL(1)=N/A

Statistics-Transformed Background Data

X = 5.147 S = 0.136 CV(2) = 0.026

K factor**= 2.523

TL(2)= 5.49E+00 LL(2)=N/A

Current Background Data from Upgradient Wells with Transformed Result

Well Number: MW395 Date Collected Result LN(Result) 7/20/2022 1.99E+02 5.29E+00 10/17/2022 1.96E+02 5.28E+00 1/25/2023 1.80E+02 5.19E+00 4/27/2023 1.94E+02 5.27E+00 7/27/2023 1.88E+02 5.24E+00 10/18/2023 1.76E+02 5.17E+00 1/30/2024 2.07E+02 5.33E+00 4/16/2024 2.02E+02 5.31E+00

Well Number: MW397 Date Collected Result LN(Result) 7/18/2022 4.98E+00 1.46E+02 10/18/2022 1.57E+02 5.06E+00 1/23/2023 1.58E+02 5.06E+00 1.28E+02 5/1/2023 4.85E+00 7/27/2023 1.52E+02 5.02E+00 10/16/2023 1.65E+02 5.11E+00 1.61E+02 1/30/2024 5.08E+00 4/15/2024 1.66E+02 5.11E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current Quarter Data

Well No.	Gradient	Detected?	Result	Result >TL(1)?	LN(Result)	LN(Result) >TL(2)
MW373	Downgradien	t Ves	5.85E+02	VES	6.37E+00	N/A

Conclusion of Statistical Analysis on Current Data

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to current background data.

Wells with Exceedances

MW373

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$

TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

I Analysis Current Background Comparison UNITS: mg/L LRGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 9.436
 S= 1.862
 CV(1)=0.197
 K factor**= 2.523
 TL(1)= 1.41E+01
 LL(1)=N/A

 Statistics-Transformed
 X= 2.226
 S= 0.200
 CV(2)=0.090
 K factor**= 2.523
 TL(2)= 2.73E+00
 LL(2)=N/A

Current Background Data from Upgradient Wells with Transformed Result

Magnesium

Background Data

1/23/2023

5/1/2023

7/27/2023

10/16/2023

1/30/2024

4/15/2024

Well Number: MW395 Date Collected Result LN(Result) 7/20/2022 1.12E+01 2.42E+00 10/17/2022 1.13E+01 2.42E+00 1/25/2023 1.14E+01 2.43E+00 4/27/2023 1.14E+01 2.43E+00 7/27/2023 1.05E+01 2.35E+00 10/18/2023 1.15E+01 2.44E+00 1/30/2024 1.08E+01 2.38E+00 4/16/2024 1.16E+01 2.45E+00 Well Number: MW397 Date Collected Result LN(Result) 7/18/2022 2.04E+00 7.71E+00 10/18/2022 7.84E+00 2.06E+00

7.66E+00

7.95E+00

7.07E+00

7.83E+00

7.49E+00

7.73E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current	Quarter	Data
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Well No.	Gradient	Detected?	Result	Result >TL(1)?	LN(Result)	LN(Result) >TL(2)
MW373	Downgradien	t Yes	2.91E+01	YES	3.37E±00	N/A

Conclusion of Statistical Analysis on Current Data

2.04E+00

2.07E+00

1.96E+00

2.06E+00

2.01E+00

2.05E+00

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to current background data.

Wells with Exceedances

MW373

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$

TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

Current Background Comparison LRGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

UNITS: mV

Statistics-Background Data

X = 401.875 S = 84.687 CV(1) = 0.211

K factor**= 2.523

TL(1)=6.16E+02 LL(1)=N/A

Statistics-Transformed Background Data

X = 5.971 S = 0.246 CV(2) = 0.041

K factor**= 2.523 TL(2)= 6.59E+00 LL(2)=N/A

Current Background Data from Upgradient Wells with Transformed Result

Oxidation-Reduction Potential

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Well Number:	MW395	
Date Collected	Result	LN(Result)
7/20/2022	4.25E+02	6.05E+00
10/17/2022	3.26E+02	5.79E+00
1/25/2023	4.25E+02	6.05E+00
4/27/2023	1.90E+02	5.25E+00
7/27/2023	3.02E+02	5.71E+00
10/18/2023	4.09E+02	6.01E+00
1/30/2024	5.09E+02	6.23E+00
4/16/2024	3.99E+02	5.99E+00
Well Number:	MW397	
Well Number: Date Collected	MW397 Result	LN(Result)
	111 11007	LN(Result) 6.03E+00
Date Collected	Result	
Date Collected 7/18/2022	Result 4.15E+02	6.03E+00
Date Collected 7/18/2022 10/18/2022	Result 4.15E+02 3.71E+02	6.03E+00 5.92E+00
Date Collected 7/18/2022 10/18/2022 1/23/2023	Result 4.15E+02 3.71E+02 3.77E+02	6.03E+00 5.92E+00 5.93E+00
Date Collected 7/18/2022 10/18/2022 1/23/2023 5/1/2023	Result 4.15E+02 3.71E+02 3.77E+02 4.76E+02	6.03E+00 5.92E+00 5.93E+00 6.17E+00
Date Collected 7/18/2022 10/18/2022 1/23/2023 5/1/2023 7/27/2023	Result 4.15E+02 3.71E+02 3.77E+02 4.76E+02 4.05E+02	6.03E+00 5.92E+00 5.93E+00 6.17E+00 6.00E+00

Current	Quarter Data					
Well No.	Gradient	Detected?	Result	Result >TL(1)?	LN(Result)	LN(Result) >TL(2)
MW370	Downgradien	t Yes	4.64E+02	NO	6.14E+00	N/A
MW373	Downgradien	t Yes	4.37E+02	NO	6.08E+00	N/A
MW385	Sidegradient	Yes	3.90E+02	NO	5.97E+00	N/A
MW388	Downgradien	t Yes	3.96E+02	NO	5.98E+00	N/A
MW392	Downgradien	t Yes	3.68E+02	NO	5.91E+00	N/A
MW395	Upgradient	Yes	3.93E+02	NO	5.97E+00	N/A
MW397	Upgradient	Yes	3.97E+02	NO	5.98E+00	N/A

Conclusion of Statistical Analysis on Current Data

None of the test wells exceeded the Upper Tolerance Limit, which is evidence that concentrations in these wells are not different from current background concentrations to a statistically-significant level.

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from

- Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.
- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)
- Mean, X = (sum of background results)/(count of background results)X

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009. D2-20

C-746-S/T Third Quarter 2024 Statistical Analysis Radium-226 UNITS: pCi/L

Current Background Comparison /L LRGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X= 0.308 **S**= 0.207 **CV(1)**= 0.674

K factor=** 2.523

TL(1) = 8.31E-01 LL(1) = N/A

Statistics-Transformed Background Data

4/15/2024

X=-1.150 S= 0.544 CV(2)=-0.473

K factor**= 2.523

TL(2) = -3.05E-01 LL(2) = N/A

12(2) 3.032 01 22(2) 1011

Current Background Data from Upgradient Wells with Transformed Result

Well Number: MW395 Date Collected Result LN(Result) 7/20/2022 -8.63E-01 4.22E-01 10/17/2022 3.06E-01 -1.18E+00 -1.05E+00 1/25/2023 3.49E-01 4/27/2023 2.36E-01 -1.44E+00 7/27/2023 3.24E-01 -1.13E+00 10/18/2023 3.33E-01 -1.10E+00 1/30/2024 3.26E-01 -1.12E+00 4/16/2024 7.37E-01 -3.05E-01 Well Number: MW397 Date Collected Result LN(Result) 7/18/2022 8.05E-02 -2.52E+00 10/18/2022 -3.26E-02 #Func! 1/23/2023 1.88E-01 -1.67E+00 5/1/2023 -1.56E+00 2.11E-01 7/27/2023 -4.09E-02 #Func! 10/16/2023 4.02E-01 -9.11E-01 -7.59E-01 1/30/2024 4.68E-01

6.11E-01

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

#Because the natural log was not possible for all background values, the TL was considered equal to the maximum background value.

Current	Quarter	Data
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Well No.	Gradient	Detected?	Result	Result >TL(1)?	LN(Result)	LN(Result) >TL(2)
MW388	Downgradien	t Yes	1.85E+00	YES	6.15E-01	N/A
MW397	Upgradient	Yes	8.86E-01	YES	-1.21E-01	N/A

Conclusion of Statistical Analysis on Current Data

-4.93E-01

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to current background data.

Wells with Exceedances

MW388 MW397

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$

TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

Current Background Comparison LRGA UNITS: mg/L

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

Statistics-Background Data

X = 31.550 S = 1.791CV(1) = 0.057 K factor**= 2.523

TL(1)=3.61E+01 LL(1)=N/A

Statistics-Transformed **Background Data**

Sodium

X = 3.450 S = 0.056CV(2) = 0.016

K factor**= 2.523 TL(2)= 3.59E+00 LL(2)=N/A

Because CV(1) is less than or equal to 1, assume normal distribution and

continue with statistical analysis utilizing TL(1).

Current Background Data from Upgradient Wells with Transformed Result

Well Number:	MW395	
Date Collected	Result	LN(Result)
7/20/2022	3.09E+01	3.43E+00
10/17/2022	3.20E+01	3.47E+00
1/25/2023	3.24E+01	3.48E+00
4/27/2023	3.10E+01	3.43E+00
7/27/2023	2.85E+01	3.35E+00
10/18/2023	3.06E+01	3.42E+00
1/30/2024	2.92E+01	3.37E+00
4/16/2024	3.14E+01	3.45E+00
Well Number:	MW397	
Date Collected	Result	LN(Result)
7/18/2022	3.34E+01	3.51E+00
10/18/2022	3.32E+01	3.50E+00
1/23/2023	3.31E+01	3.50E+00
5/1/2023	3.57E+01	3.58E+00
7/27/2023	3.00E+01	3.40E+00
10/16/2023	3.15E+01	3.45E+00
1/30/2024	3.00E+01	3.40E+00

3.19E+01

4/15/2024

Current Quarter Data

Well No.	Gradient	Detected?	Result	Result >TL(1)?	LN(Result)	LN(Result) > TL(2)
MW373	Downgradien	t Ves	7 14F+01	VES	4 27F+00	N/A

Conclusion of Statistical Analysis on Current Data

3.46E+00

Wells with Exceedances MW373

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to current background data.

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$

TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009. D2-22

C-746-S/T Third Quarter 2024 Statistical Analysis Sulfate UNITS: n

I Analysis Current Background Comparison UNITS: mg/L LRGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 11.600
 S= 0.356
 CV(1)=0.031
 K factor**= 2.523
 TL(1)= 1.25E+01
 LL(1)=N/A

 Statistics-Transformed
 X= 2.451
 S= 0.031
 CV(2)=0.013
 K factor**= 2.523
 TL(2)= 2.53E+00
 LL(2)=N/A

Current Background Data from Upgradient Wells with Transformed Result

Background Data

Well Number: MW395 Date Collected Result LN(Result) 7/20/2022 2.48E+00 1.19E+01 10/17/2022 1.17E+01 2.46E+00 1/25/2023 1.17E+01 2.46E+00 4/27/2023 1.10E+01 2.40E+00 7/27/2023 1.15E+01 2.44E+00 10/18/2023 1.10E+01 2.40E+00 1/30/2024 1.12E+01 2.42E+00 4/16/2024 1.13E+01 2.42E+00 Well Number: MW397 Date Collected Result LN(Result) 7/18/2022 1.19E+01 2.48E+00 10/18/2022 1.14E+012.43E+00 1/23/2023 1.20E+01 2.48E+00 5/1/2023 1.21E+01 2.49E+00 7/27/2023 1.21E+01 2.49E+00 10/16/2023 1.15E+01 2.44E+00 1/30/2024 1.16E+01 2.45E+00 4/15/2024 1.17E+01 2.46E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Current	Quarter	Data
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Well No.	Gradient	Detected?	Result	Result $>$ TL(1)?	LN(Result)	LN(Result) >TL(2)
MW370	Downgradient	t Yes 2	2.08E+01	YES	3.03E+00	N/A
MW373	Downgradient	Yes 2	2.13E+02	YES	5.36E+00	N/A
MW385	Sidegradient	Yes	1.92E+01	YES	2.95E+00	N/A
MW388	Downgradient	t Yes 2	2.06E+01	YES	3.03E+00	N/A

Conclusion of Statistical Analysis on Current Data

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to current background data.

Wells with Exceedances

MW370 MW373 MW385 MW388

NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$

TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X - (K * S)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

C-746-S/T Third Quarter 2024 Statistical Analysis Current Bac Technetium-99 UNITS: pCi/L

Current Background Comparison
L LRGA

The CV is calculated to determine if background data are normally distributed. If so, the current test well results are compared to the TL. If not, a transformation is performed on the background and test well results, then each transformed test well result is compared to the transformed TL. If the test well result exceeds the TL, that is statistically significant evidence of elevated concentration in that well. For pH only, the current test well results are compared to the TL and LL. If the test well result for pH exceeds the TL or is less than the LL, that is statistically significant evidence of elevated or lowered concentration in that well.

 Statistics-Background Data
 X= 11.576
 S= 7.648
 CV(1)=0.661
 K factor**= 2.523
 TL(1)= 3.09E+01
 LL(1)=N/A

 Statistics-Transformed
 X= 2.211
 S= 0.762
 CV(2)=0.345
 K factor**= 2.523
 TL(2)= 4.13E+00
 LL(2)=N/A

Current Background Data from Upgradient Wells with Transformed Result

Background Data

5/1/2023

7/27/2023

10/16/2023

1/30/2024

4/15/2024

Well Number: MW395 Date Collected Result LN(Result) 7/20/2022 1.11E+01 2.41E+00 10/17/2022 8.43E+00 2.13E+001/25/2023 1.25E+01 2.53E+00 4/27/2023 2.51E+00 9.20E-01 7/27/2023 3.76E+00 1.32E+00 10/18/2023 1.64E+01 2.80E+00 1/30/2024 5.75E+00 1.75E+00 4/16/2024 2.17E+00 7.75E-01 Well Number: MW397 Date Collected Result LN(Result) 7/18/2022 2.34E+00 1.04E+01 10/18/2022 2.30E+01 3.14E+00 1/23/2023 8.51E+00 2.14E+00

1.41E+01

2.77E+01

2.29E+01

1.08E+01

5.18E+00

Because CV(1) is less than or equal to 1, assume normal distribution and continue with statistical analysis utilizing TL(1).

Well No.	Gradient	Detected?	Result	Result $>$ TL(1)?	LN(Result)	LN(Result) >TL(2)
MW385	Sidegradient	Yes	4.59E+01	YES	3.83E+00	N/A

Conclusion of Statistical Analysis on Current Data

2.65E+00

3.32E+00

3.13E+00

2.38E+00

1.64E+00

The test well(s) listed exceeded the Upper Tolerance Limit, which is evidence of elevated concentration with respect to current background data.

Wells with Exceedances

MW385

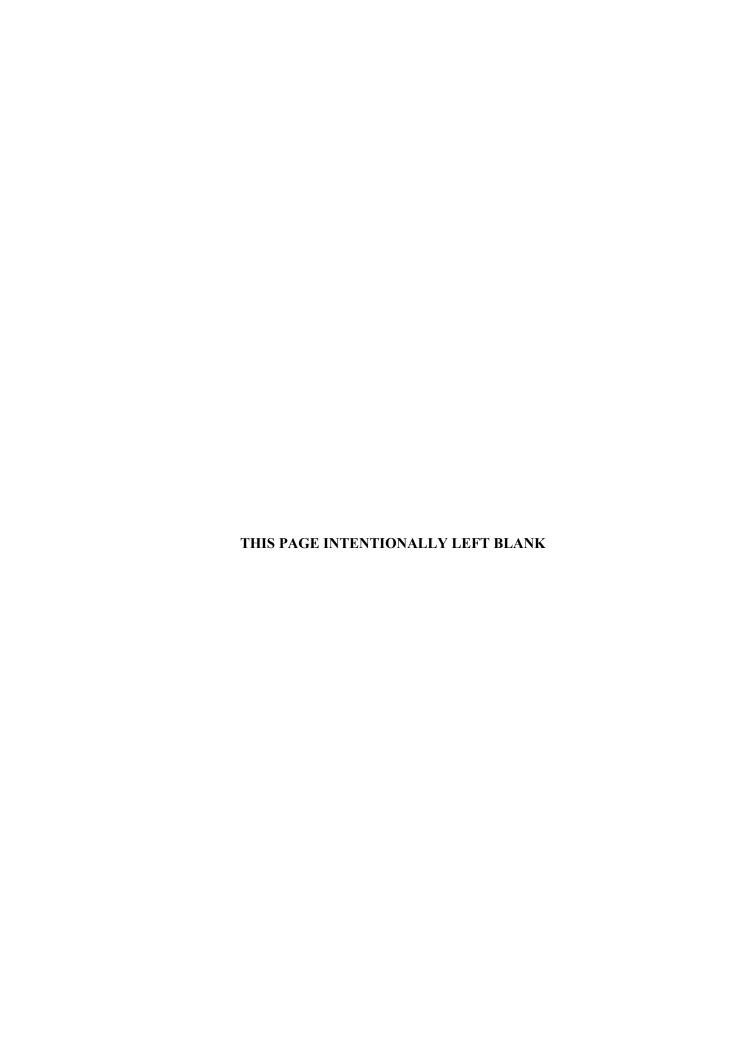
NOTE: For UCRS wells, background ("upgradient") wells are those located in the same direction as RGA wells located upgradient from the landfill.

CV Coefficient-of-Variation, CV = S/X If CV is less than or equal to 1 assume normal distribution.

- S Standard Deviation, $S = [Sum ([(background result-X)^2]/[count of background results -1])]^0.5$
- TL Upper Tolerance Limit, TL = X + (K * S), LL Lower Tolerance Limit, LL = X (K * S)
- X Mean, X = (sum of background results)/(count of background results)

^{**} Read from Table 5, Appendix B of Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Guidance, EPA, 1989, based on total number of background results - The K-factor for pH to account for a two-sided tolerance interval instead of a one-sided tolerance limit. The K-factor for pH was computed using a formula from NIST/SEMATECH e-Handbook of Statistical Methods, http://www.itl.nist.gov/div898/handbook/,2009.

ATTACHMENT D3 STATISTICIAN QUALIFICATION STATEMENT





Four Rivers Nuclear Partnership, LLC 5511 Hobbs Road Kevil, KY 42053 www.fourriversnuclearpartnership.com

October 28, 2024

Mr. Dennis Greene Four Rivers Nuclear Partnership, LLC 5511 Hobbs Road Kevil, KY 42053

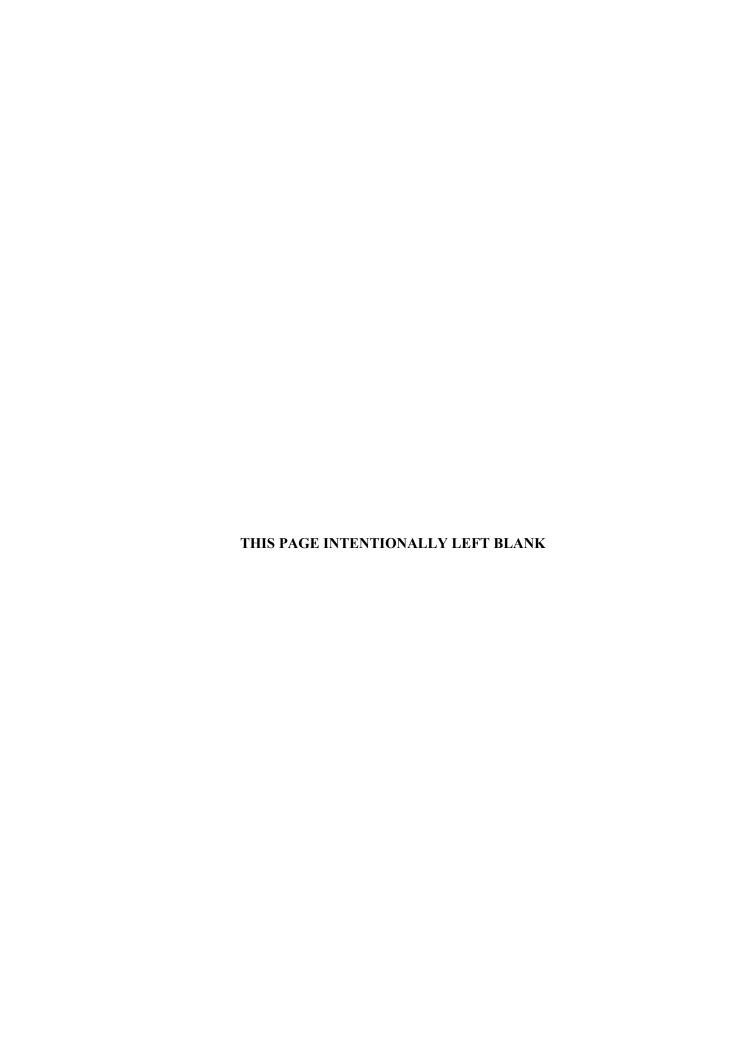
Dear Mr. Greene:

As an Environmental Scientist, with a bachelor's degree in Earth Sciences/Geology, I have over 30 years of experience in reviewing and assessing laboratory analytical results associated with environmental sampling and investigation activities. For the generation of these statistical analyses, my work was reviewed by a qualified independent technical reviewer with Four Rivers Nuclear Partnership, LLC.

For this project, the statistical analyses conducted on the third quarter 2024 monitoring well data collected from the C-746-S&T and C-746-U Landfills were performed in accordance with guidance provided in the U.S. Environmental Protection Agency guidance document, *EPA Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Interim Final Guidance* (1989).

Sincerely,

Bryan Smith



APPENDIX E GROUNDWATER FLOW RATE AND DIRECTION



Permit Numbers: SW07300014, SW07300015, SW07300045

Finds/Unit: <u>KY8-890-008-982/1</u>

LAB ID: None

GROUNDWATER FLOW RATE AND DIRECTION

Whenever monitoring wells (MWs) are sampled, 401 KAR 48:300, Section 11, requires determination of groundwater flow rate and direction of flow in the uppermost aquifer. The uppermost aquifer below the C-746-S&T Landfills is the Regional Gravel Aquifer (RGA). Water level measurements currently are recorded in several wells at the landfill on a quarterly basis. These measurements were used to plot the potentiometric surface of the RGA for the third quarter 2024 and to determine the groundwater flow rate and direction.

Water levels during this reporting period were measured on July 23, 2024. As shown on Figure E.1, MW389, screened in the Upper Continental Recharge System (UCRS), is usually dry, while other UCRS wells have recordable water levels. During this reporting period, MW389 had sufficient water for a water level measurement.

The UCRS has a strong vertical hydraulic gradient; therefore, the limited number of available UCRS wells, screened over different elevations, is not sufficient for mapping the potentiometric surface. Figure E.1 shows the location of UCRS MWs. The Upper Regional Gravel Aquifer (URGA) and Lower Regional Gravel Aquifer (LRGA) data were corrected for barometric pressure, if necessary, and converted to elevations to plot the potentiometric surface of the RGA, as a whole, as shown on Table E.1. Figure E.2 is a composite or average map of the URGA and LRGA elevations where well clusters exist. The contour lines are placed based on the average water level elevations of the clusters. During July, RGA groundwater flow was directed inward and then northeast towards the Ohio River. Based on the site potentiometric map (Figure E.2), the hydraulic gradient beneath the landfill, as measured along the defined groundwater flow directions, is 1.99×10^{-4} ft/ft. Additional water level measurements in July (Figure E.3) document the vicinity groundwater hydraulic gradient for the RGA to be 3.13×10^{-4} ft/ft, northeastward. The hydraulic gradients are shown in Table E.2.

The average linear groundwater flow velocity (v) is determined by multiplying the hydraulic gradient (i) by the hydraulic conductivity (K) [resulting in the specific discharge (q)] and dividing by the effective porosity (n_e). The RGA hydraulic conductivity values used are reported in the administrative application for the New Solid Waste Landfill Permit No. 073-00045NWC1 and range from 4.25×10^2 to 7.25×10^2 ft/day (1.50×10^{-1} to 2.56×10^{-1} cm/s). RGA effective porosity is assumed to be 25%. Vicinity and site flow velocities were calculated using the low and high values for hydraulic conductivity, as shown in Table E.3.

Regional groundwater flow near the C-746-S&T Landfills typically trends northeastward toward the Ohio River. As demonstrated on the potentiometric map for July 2024, RGA groundwater flow from the landfill area was directed to the north.

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¹ Additional water level measurements, in wells at the C-746-U Landfill and in wells of the surrounding region (MW98, MW100, MW125, MW139, MW165A, MW173, MW193, MW197, and MW200), were used to contour the RGA potentiometric surface.

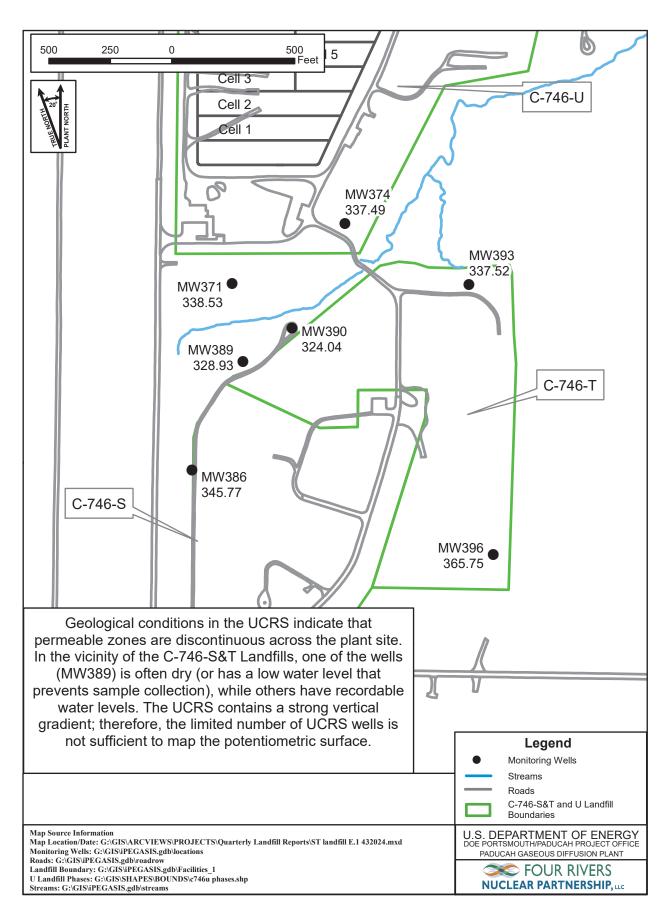


Figure E.1. Potentiometric Measurements of the Upper Continental Recharge System at the C-746-S&T Landfills, July 23, 2024

Table E.1. C-746-S&T Landfills Third Quarter 2024 (July) Water Levels

			C-746-S&T	Landfills (Jul	y 2024) V	Water Leve	els			
				•			Rav	w Data	*Corre	ected Data
Date	Time	Well	Formation	Datum Elev	BP	Delta BP	DTW	Elev	DTW	Elev
				(ft amsl)	(in Hg)	(ft H20)	(ft)	(ft amsl)	(ft)	(ft amsl)
7/23/2024	8:31	MW220	URGA	382.01	30.05	0.00	57.84	324.17	57.84	324.17
7/23/2024	8:21	MW221	URGA	391.38	30.05	0.00	67.32	324.06	67.32	324.06
7/23/2024	8:25	MW222	URGA	395.27	30.05	0.00	71.26	324.01	71.26	324.01
7/23/2024	8:23	MW223	URGA	394.38	30.05	0.00	70.37	324.01	70.37	324.01
7/23/2024	8:28	MW224	URGA	395.69	30.05	0.00	71.60	324.09	71.60	324.09
7/23/2024	8:35	MW225	URGA	385.73	30.05	0.00	61.71	324.02	61.71	324.02
7/23/2024	10:07	MW353	LRGA	375.05	30.08	-0.03	50.90	324.15	50.87	324.18
7/23/2024	7:55	MW369	URGA	364.23	30.05	0.00	40.06	324.17	40.06	324.17
7/23/2024	7:57	MW370	LRGA	365.12	30.05	0.00	40.95	324.17	40.95	324.17
7/23/2024	7:56	MW371	UCRS	364.64	30.05	0.00	26.11	338.53	26.11	338.53
7/23/2024	7:43	MW372	URGA	359.42	30.04	0.01	35.26	324.16	35.27	324.15
7/23/2024	7:41	MW373	LRGA	359.73	30.04	0.01	35.58	324.15	35.59	324.14
7/23/2024	7:42	MW374	UCRS	359.44	30.04	0.01	21.94	337.50	21.95	337.49
7/23/2024	8:54	MW384	URGA	365.29	30.06	-0.01	41.15	324.14	41.14	324.15
7/23/2024	8:52	MW385	LRGA	365.74	30.05	0.00	41.54	324.20	41.54	324.20
7/23/2024	8:53	MW386	UCRS	365.32	30.06	-0.01	19.56	345.76	19.55	345.77
7/23/2024	8:49	MW387	URGA	363.48	30.05	0.00	39.37	324.11	39.37	324.11
7/23/2024	8:48	MW388	LRGA	363.45	30.05	0.00	39.34	324.11	39.34	324.11
7/23/2024	8:44	MW389	UCRS	364.11	30.05	0.00	35.18	328.93	35.18	328.93
7/23/2024	8:42	MW390	UCRS	360.39	30.05	0.00	36.35	324.04	36.35	324.04
7/23/2024	8:00	MW391	URGA	366.67	30.05	0.00	42.62	324.05	42.62	324.05
7/23/2024	8:03	MW392	LRGA	365.85	30.05	0.00	41.81	324.04	41.81	324.04
7/23/2024	8:02	MW393	UCRS	366.62	30.05	0.00	29.10	337.52	29.10	337.52
7/23/2024	8:10	MW394	URGA	378.46	30.05	0.00	54.29	324.17	54.29	324.17
7/23/2024	8:08	MW395	LRGA	379.12	30.05	0.00	54.98	324.14	54.98	324.14
7/23/2024	8:09	MW396	UCRS	378.75	30.05	0.00	13.00	365.75	13.00	365.75
7/23/2024	9:21	MW397	LRGA	387.00	30.06	-0.01	62.88	324.12	62.87	324.13
7/23/2024	8:17	MW418	URGA	367.21	30.05	0.00	43.07	324.14	43.07	324.14
7/23/2024	8:16	MW419	LRGA	367.05	30.05	0.00	42.91	324.14	42.91	324.14
Reference Baro	metric Pro	essure			30.05					

Elev = elevation

amsl = above mean sea level

BP = barometric pressure

DTW = depth to water in feet below datum

URGA = Upper Regional Gravel Aquifer

LRGA = Lower Regional Gravel Aquifer

UCRS = Upper Continental Recharge System

*Assumes a barometric efficiency of 1.0

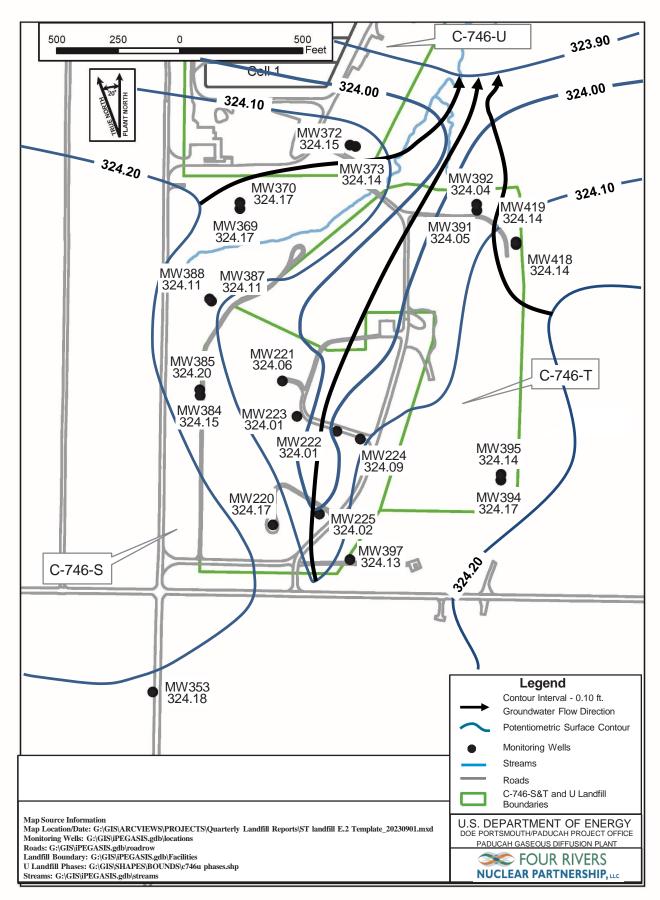


Figure E.2. Composite Potentiometric Surface of the Regional Gravel Aquifer at the C-746-S&T Landfills, July 23, 2024

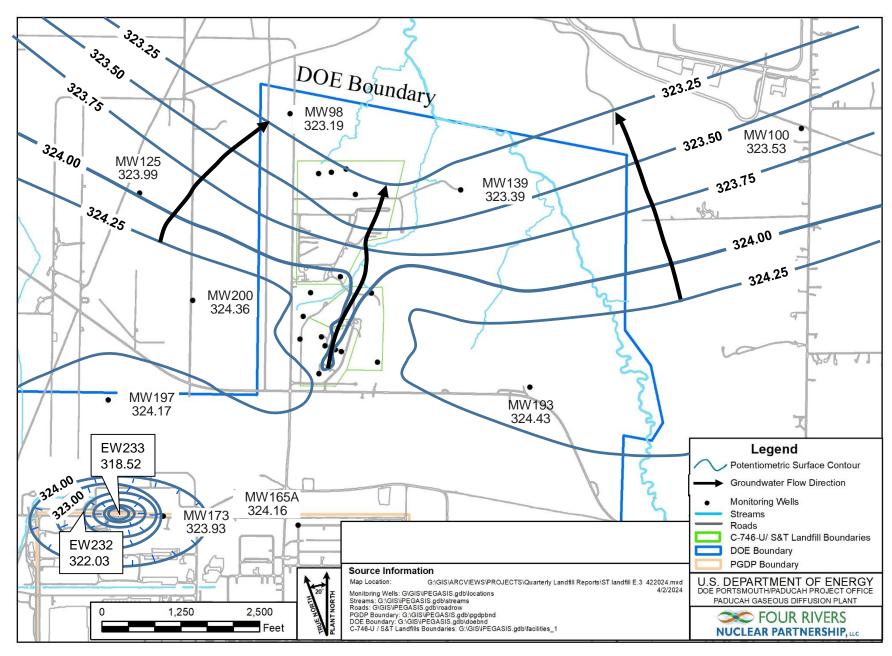


Figure E.3. Vicinity Potentiometric Surface of the Regional Gravel Aquifer, July 23, 2024

Table E.2. C-746-S&T Landfills Hydraulic Gradients

	ft/ft
Beneath Landfill Mound	1.99×10^{-4}
Vicinity	3.13 × 10 ⁻⁴

Table E.3. C-746-S&T Landfills Groundwater Flow Rate

Hydraulic Co	onductivity (K)	Specific I	Discharge (q)	Average Linear	Velocity (v)
ft/day	cm/s	ft/day	cm/s	ft/day	cm/s
Beneath Landfi	<u>ll Mound</u>				
7.25×10^2	2.56×10^{-1}	1.44×10^{-1}	5.09×10^{-5}	5.77×10^{-1}	2.04×10^{-4}
4.25×10^{2}	1.50×10^{-1}	8.46× 10 ⁻²	2.98×10^{-5}	3.38×10^{-1}	1.19×10^{-4}
<u>Vicinity</u>					
7.25×10^{2}	2.56×10^{-1}	2.27 × 10 ⁻¹	8.01 × 10 ⁻⁵	9.07×10^{-1}	3.20×10^{-4}
4.25×10^2	1.50×10^{-1}	1.33×10^{-1}	4.69×10^{-5}	5.32×10^{-1}	1.88×10^{-4}

APPENDIX F NOTIFICATIONS



NOTIFICATIONS

In accordance with 401 KAR 48:300 § 7, the notification for parameters that exceed the maximum contaminant level (MCL) has been submitted to the Kentucky Division of Waste Management. The parameters are listed on page F-4. The notification for parameters that do not have MCLs but had statistically significant increased concentrations relative to historical background concentrations is provided below.

STATISTICAL ANALYSIS OF PARAMETERS NOTIFICATION

The statistical analyses conducted on the third quarter 2024 groundwater data collected from the C-746-S&T Landfills monitoring wells were performed in accordance with *Groundwater Monitoring Plan for the Solid Waste Permitted Landfills (C-746-S Residential Landfill, C-746-T Inert Landfill, and C-746-U Contained Landfill) at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky* (LATA Kentucky 2014).

The following are the permit required parameters in 40 CFR § 302.4, Appendix A, which had statistically significant, increased concentrations relative to historical background concentrations.

	<u>Parameter</u>	Monitoring Well
Upper Continental Recharge System	Radium-226 Technetium-99	MW390, MW396 MW390
Upper Regional Gravel Aquifer	Radium-226 Sodium Technetium-99	MW221, MW384 MW224 MW369, MW384, MW387
Lower Regional Gravel Aquifer	Radium-226 Sodium Technetium-99	MW388, MW397 MW373 MW385

NOTE: Although technetium-99 is not cited in 40 CFR § 302.4, Appendix A, this radionuclide is being reported along with the parameters of this regulation.

8/28/2024

Four Rivers Nuclear Partnership, LLC PROJECT ENVIRONMENTAL MEASUREMENTS SYSTEM C-746-S&T LANDFILLS

SOLID WASTE PERMIT NUMBER SW07300014, SW07300015, SW07300045 MAXIMUM CONTAMINANT LEVEL (MCL) EXCEEDANCE REPORT Quarterly Groundwater Sampling

AKGWA	Station	Analysis	Method	Results	Units	MCL
8004-4801	MW395	Trichloroethene	8260D	5.29	ug/L	5

NOTE 1: MCLs are defined in 401 KAR 47:030.

NOTE 2: MW369, MW370, MW372, and MW373 are down-gradient wells for the C-746-S and C-746-T Landfills and upgradient for the C-746-U Landfill. These wells are sampled with the C-746-U Landfill monitoring well network. These wells are reported on the exceedance reports for C-746-S, C-746-T, and C-746-U.

APPENDIX G CHART OF MCL AND UTL EXCEEDANCES



Chart of MCL and Historical UTL Exceedances for the C-746-S&T Landfills

Groundwater Flow System			UCRS	S						1	URGA	4								LRGA	١		
Gradient	S	D	D	D	U	S	S	S	S	S	D	D	D	D	U	U	S	D	D	D	D	U	U
Monitoring Well	386	389	390	393	396	221	222	223	224	384	369	372	387	391	220	394	385	370	373	388	392	395	397
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Quarter 4, 2003											*								*				
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Quarter 4, 2010																							
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Chart of MCL and Historical UTL Exceedances for the C-746-S&T Landfills (Continued)

Groundwater Flow System Gradient				3						(JRGA	A.								LRGA	1		
··········	S	D	D	D	U	S	S	S	S	S	D	D	D	D	U	U	S	D	D	D	D	U	U
Monitoring Well	386	389	390	393	396	221	222	223	224	384	369	372	387	391	220	394	385	370	373	388	392	395	397
BETA ACTIVITY																							
Quarter 2, 2003			•																				
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Chart of MCL and Historical UTL Exceedances for the C-746-S&T Landfills (Continued)

Groundwater Flow System			UCRS	S						1	URGA	A								LRGA	A		
Gradient	S	D	D	D	U	S	S	S	S	S	D	D	D	D	U	U	S	D	D	D	D	U	U
Monitoring Well	386	389	390	393	396	221	222	223	224	384	369	372	387	391	220	394	385	370	373	388	392	395	397
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Quarter 4, 2018																							
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Chart of MCL and Historical UTL Exceedances for the C-746-S&T Landfills (Continued)

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Groundwater Flow System Gradient	S	D	UCRS D	D	U	S	S	S	S	S	JRGA D	D	D	D	U	U	S	D	D	LRGA D	D	U	U
Monitoring Well	386	389	390	393	396			223	224	384	369	372	387	391	220	394	385	370	373	388	392	395	397
CALCIUM	500	307	370	373	370	221	222	223	227	504	307	312	307	371	220	374	363	370	313	300	372	373	371
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Chart of MCL and Historical UTL Exceedances for the C-746-S&T Landfills (Continued)

Groundwater Flow System			UCRS	S						1	URGA	١								LRGA	١		
Gradient	S	D	D	D	U	S	S	S	S	S	D	D	D	D	U	U	S	D	D	D	D	U	U
Monitoring Well	386	389	390	393	396	221	222	223	224	384	369	372	387	391	220	394	385	370	373	388	392	395	397
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Chart of MCL and Historical UTL Exceedances for the C-746-S&T Landfills (Continued)

Groundwater Flow System			UCRS	S						1	URGA	A								LRGA	A		
Gradient	S	D	D	D	U	S	S	S	S	S	D	D	D	D	U	U	S	D	D	D	D	U	U
Monitoring Well	386	389	390	393	396	221	222	223	224	384	369	372	387	391	220	394	385	370		388		395	397
CHLORIDE																							
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Chart of MCL and Historical UTL Exceedances for the C-746-S&T Landfills (Continued)

Groundwater Flow System			UCR	S						1	URGA	A								LRGA	A		
Gradient	S	D	D	D	U	S	S	S	S	S	D	D	D	D	U	U	S	D	D	D	D	U	U
Monitoring Well	386	389	390	393	396	221	222	223	224	384	369	372	387	391	220	394	385	370	373	388	392	395	397
CONDUCTIVITY																							
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Chart of MCL and Historical UTL Exceedances for the C-746-S&T Landfills (Continued)

Groundwater Flow System			UCRS	S						1	URG	4								LRGA	1		
Gradient	S	D	D	D	U	S	S	S	S	S	D	D	D	D	U	U	S	D	D	D	D	U	U
Monitoring Well	386	389	390	393	396	221	222	223	224	384	369	372	387	391	220	394	385	370	373	388	392	395	397
DISSOLVED SOLIDS																							
Quarter 1, 2008												*							*				
Quarter 2, 2008												*							*				
Quarter 3, 2008												*							*				
Quarter 4, 2008										*		*							*				
Quarter 1, 2009												*							*				
Quarter 2, 2009												*	*						*				
Quarter 3, 2009												*	*						*				
Quarter 4, 2009												*	*						*				
Quarter 1, 2010												*	*						*				
Quarter 2, 2010										*		*	*						*				
Quarter 3, 2010										*		*							*				
Quarter 4, 2010										*		*							*				
Quarter 1, 2011										*		*							*				
Quarter 2, 2011												*	*						*				
Quarter 3, 2011												*							*				
Quarter 4, 2011												*							*				
Quarter 1, 2012											*	*	*						*				
Quarter 2, 2012	1											*							*				
Quarter 3, 2012	1									*		*	*						*				
Quarter 4, 2012	1											*	*						*				
Quarter 1, 2013	1									*		*							*				
Quarter 2, 2013	1	t	t									*							*				
Quarter 3, 2013	T											*							*				
Quarter 4, 2013	T											*							*				
Quarter 1, 2014	+	 	 									*	*						*	l -			
Quarter 2, 2014	1	 	 									*							*				
Quarter 3, 2014	1	t	t						*			*	*						*				
Quarter 4, 2014	1			\vdash	\vdash		\vdash			\vdash		*	*	\vdash			Н		*			\vdash	H
Quarter 1, 2015	+											*							*				
Quarter 2, 2015	+											*							*				
Quarter 3, 2015	+											*							*				
Quarter 4, 2015	+								*			*						*	*				
Quarter 1, 2016	-								-			*						-	*				
Quarter 2, 2016	-											*	*	*					*				
Quarter 3, 2016	+											*							*				
Quarter 4, 2016	-											*							*				
Quarter 1, 2017	-											*							*				
	-											*							*				
Quarter 2, 2017	+											*		*	*				*				
Quarter 3, 2017	-											*		*	*				*				
Quarter 4, 2017	-											*							*				
Quarter 1, 2018												*							*				<u> </u>
Quarter 2, 2018	-											*		*					*				
Quarter 3, 2018												*		不					*				<u> </u>
Quarter 4, 2018																							<u> </u>
Quarter 1, 2019	4—											*							*				
Quarter 2, 2019													- JE										<u> </u>
Quarter 3, 2019	4—											*	*						*				
Quarter 4, 2019	+	-	-			_						*	- ME						*				<u> </u>
Quarter 1, 2020	1					—		-	-			*	*		<u> </u>	<u> </u>	-				_		<u> </u>
Quarter 2, 2020	+	-	-			_				*		*	*				*		*				<u> </u>
Quarter 3, 2020	1					—		-	-	*	_	*	*		<u> </u>	<u> </u>	*	_	*		_	-	<u> </u>
Quarter 4, 2020	_					<u> </u>						*	*						*				—
Quarter 1, 2021	1	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>			<u> </u>		*	46	<u> </u>			<u> </u>		*			<u> </u>	<u> </u>
Quarter 2, 2021	1			-	-	—	-	-	-	-		*	*	-	<u> </u>	<u> </u>	-		*			-	<u> </u>
Quarter 3, 2021	_					<u> </u>						*	*						*				—
Quarter 4, 2021	1	-	-			<u> </u>						*	*						*	<u> </u>			<u> </u>
Quarter 2, 2022	1					_						*	*						*	ļ			<u> </u>
Quarter 2, 2022	1	<u> </u>	<u> </u>			<u> </u>						*	*						*				<u> </u>
Quarter 3, 2022	1					_						*							*	ļ			<u> </u>
Quarter 4, 2022	1					_						*							*	ļ			<u> </u>
Quarter 1, 2023	1					<u> </u>						*			lacksquare				*				Ц.
Quarter 2, 2023	1	<u> </u>	<u> </u>			_						*							*				<u> </u>
Quarter 3, 2023	1	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>			<u> </u>		*	<u> </u>	<u> </u>			<u> </u>		*			<u> </u>	<u> </u>
Quarter 4, 2023	1											*							*				L_
Quarter 1, 2024												*							*				
Quarter 2, 2024												*							*				
Quarter 3, 2024												*							*				匚
IODIDE																							
Quarter 4, 2002	L																				*		L
Quarter 2, 2003	1					*																	
Quarter 3, 2003	1												*										
Quarter 1, 2004				*																			
Quarter 3, 2010																					*		
Quarter 2, 2013										*													
Quarter 2, 2015																							

Chart of MCL and Historical UTL Exceedances for the C-746-S&T Landfills (Continued)

Groundwater Flow System		-	UCRS	S		I				1	URGA	A								LRGA			
Gradient	S	D	D	D	U	S	S	S	S	S	D	D	D	D	U	U	S	D	D	D	D	U	U
Monitoring Well	386	389	390	393	396	221	222	223	224	384	369	372	387	391	220	394	385	370	373	388	392	395	397
IRON																							
Quarter 1, 2003							*			*	*			*									
Quarter 2, 2003										*	*	*	*										
Quarter 3, 2003							*	*	*	*	*	*											
Quarter 4, 2003											*												
Quarter 1, 2004											*												
Quarter 2, 2004										*	*												
Quarter 3, 2004										*													
Quarter 4, 2004										*													
Quarter 1, 2005												*											
Quarter 2, 2005											*	*											
Quarter 1, 2006							*																
Quarter 2, 2006												*											
Quarter 3, 2006											*												
Quarter 1, 2007											*	*											
Quarter 2, 2007											*	-											
Quarter 2, 2007 Quarter 2, 2008						1					H	*											
Quarter 3, 2008						1						*											
MAGNESIUM Quarter 1, 2003			*																				
Quarter 1, 2003 Quarter 2, 2003	_		*			 					-	*							*				
. /	_		*			 	*				-	*							*				
Quarter 3, 2003 Quarter 4, 2003	_		*			 	*				-	*							*				
Quarter 1, 2004	_		*			 					-	*		*					*				
Quarter 1, 2004 Quarter 2, 2004			*									*		•					*				
			*									*							*				
Quarter 3, 2004 Quarter 4, 2004			*									*							*				
			Ψ.									*							*				
Quarter 1, 2005												*							*				
Quarter 2, 2005												*							*				
Quarter 3, 2005																							
Quarter 4, 2005												*							*				
Quarter 1, 2006												*							*				
Quarter 2, 2006												*							*				
Quarter 3, 2006												*							*				
Quarter 4, 2006												*							*				
Quarter 1, 2007												*							*				
Quarter 2, 2007												*							*				
Quarter 3, 2007												*							*				
Quarter 4, 2007												*							*				
Quarter 1, 2008												*							*				
Quarter 2, 2008												*							*				
Quarter 3, 2008												*							*				
Quarter 4, 2008												*							*				
Quarter 1, 2009												*							*				
Quarter 2, 2009												*							*				
Quarter 3, 2009												*	*						*				
Quarter 4, 2009												*							*				
Quarter 1, 2010												*							*				
Quarter 2, 2010												*	*						*				
Quarter 3, 2010												*							*				
Quarter 4, 2010						l					l	*							*				
Quarter 1, 2011						l					l	*							*				
Quarter 2, 2011						1						*	*						*				
Quarter 3, 2011						 					l -	*							*				
Quarter 4, 2011						 					l -	*							*				
Quarter 1, 2012	\vdash					 						*							*				
Quarter 2, 2012	 					1						*			\vdash				*				
Quarter 3, 2012	 			-	-	Ͱ	-	-	-		-	*	*	-				-	*	-		-	
Quarter 4, 2012	 					┢					-	*	*						*				-
	_					 					-	*	<u> </u>						*				
Quarter 1, 2013						 						*							*				
Quarter 2, 2013	<u> </u>																						<u> </u>
Quarter 3, 2013						<u> </u>					ļ	*							*				
Quarter 4, 2013												*						L_	*				<u> </u>
Quarter 1, 2014																		*	*				<u> </u>

Chart of MCL and Historical UTL Exceedances for the C-746-S&T Landfills (Continued)

Groundwater Flow System			UCRS							_	URG									LRGA			
Gradient	S	D	D	D	U	S	S	S	S	S	D	D	D	D	U	U	S	D	D	D	D	U	U
Monitoring Well	386	389	390	393	396	221	222	223	224	384	369	372	387	391	220	394	385	370	373	388	392	395	397
MAGNESIUM Quarter 2, 2014												*	*						*				
Quarter 3, 2014												*	-						*				
Quarter 4, 2014												*	*						*				
Quarter 1, 2015												*	*						*				
Quarter 2, 2015												*							*				
Quarter 3, 2015												*							*				
Quarter 4, 2015												*							*				
Quarter 1, 2016												*							*				
Quarter 2, 2016												*		*					*				
Quarter 3, 2016												*							*				<u> </u>
Quarter 4, 2016												*		*					*				
Quarter 1, 2017 Quarter 2, 2017												*		不					*				
Quarter 3, 2017 Quarter 3, 2017												*		*									
Quarter 4, 2017												*							*				
Quarter 1, 2018												*	*						*				
Quarter 2, 2018												*	-										
Quarter 3, 2018												*											
Quarter 4, 2018												*	*	*					*				
Quarter 1, 2019												*		*					*				
Quarter 2, 2019	l					l						*							*				
Quarter 3, 2019												*	*						*				
Quarter 4, 2019												*	*						*				
Quarter 1, 2020												*	*						*				
Quarter 2, 2020												*	*						*				
Quarter 3, 2020												*	*						*				
Quarter 4, 2020												*	*						*				
Quarter 1, 2021												*	*						*				
Quarter 2, 2021												*	*						*				
Quarter 3, 2021												*	*						*				
Quarter 4, 2021												*	*						*				
Quarter 1, 2022												*	*						*				
Quarter 2, 2022												*	*						*				
Quarter 3, 2022	-	-										*	*		-	-			*				
Quarter 4, 2022 Quarter 1, 2023												*	*						*				
Quarter 1, 2023 Quarter 2, 2023												*	*						*				
Quarter 3, 2023												*	*						*				┢
Quarter 4, 2023												*	*						*				
Quarter 1, 2024												*	*						*				
Quarter 2, 2024												*	*						*				
Quarter 3, 2024												*	*						*				
MANGANESE																							
Quarter 4, 2002																					*		
Quarter 3, 2003							*	*															
Quarter 4, 2003							*	*															
Quarter 1, 2004							*																
Quarter 2, 2004							*	ـــــــــــــــــــــــــــــــــــــــ															
Quarter 4, 2004							*	*															
Quarter 1, 2005			_		_		*																
Quarter 3, 2005																					*		
Quarter 3, 2009	*																						L
Quarter 1, 2022	*																						
OXIDATION-REDUCTION POT	ENT	IAL																					
Quarter 4, 2003	<u> </u>	<u> </u>	*		<u> </u>		<u> </u>				<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>				<u> </u>	<u> </u>		
Quarter 2, 2004			*															*					
Quarter 3, 2004			*			*												ボ					
Quarter 4, 2004 Quarter 1, 2005			*			*												*					
Quarter 1, 2005 Quarter 2, 2005	*	-	*		_	<u> </u>	_			_	_	_	_	_	-	-		*	_	_	_		
Quarter 3, 2005	*	-	*		-		-				-	-	-	-	-	-				-	-		
Quarter 4, 2005	Ë	\vdash	*		 	\vdash	<u> </u>				 	<u> </u>	 	<u> </u>	\vdash	\vdash				 	<u> </u>		\vdash
Quarter 2, 2006	1		*		 	\vdash	<u> </u>				 	<u> </u>	 	<u> </u>						 	<u> </u>		
Quarter 3, 2006	1		*				\vdash					\vdash		\vdash				*			\vdash		
Quarter 4, 2006	1		*		\vdash		\vdash				\vdash	\vdash	\vdash	\vdash						\vdash	\vdash		
Quarter 1, 2007	1		*		\vdash		\vdash				\vdash	\vdash	\vdash	\vdash						\vdash	\vdash		
Quarter 2, 2007	1		*		\vdash		*				\vdash	\vdash	\vdash	\vdash							\vdash		
Quarter 3, 2007	1		*			l	*																
Quarter 4, 2007			*																				
Quarter 1, 2008			*			*			*														
Quarter 2, 2008	*		*	*		*							*				*		*	*			
Quarter 3, 2008			*	*		*							*				*		*	*			
Quarter 4, 2008			*	*		*	*	*	*				*				*	*		*			
						_																	

Chart of MCL and Historical UTL Exceedances for the C-746-S&T Landfills (Continued)

Groundwater Flow System			UCRS	S						1	URGA	A								LRGA	1		
Gradient	S	D	D	D	U	S	S	S	S	S	D	D	D	D	U	U	S	D	D	D	D	U	U
Monitoring Well	386	389	390	393	396	221	222	223	224	384	369	372	387	391	220	394	385	370	373	388	392	395	397
OXIDATION-REDUCTION POT	ENT	IAL																					
Quarter 1, 2009			*				*	*	*				*	*				*		*			
Quarter 3, 2009			*	*		*			- 14								*	*	*	*			
Quarter 4, 2009	L.,		*			*			*									*		*			
Quarter 1, 2010	*		*	<u>.</u>					J				<u>.</u>				*	*		*			
Quarter 2, 2010			*	*		- Jan			*				*				*		- JL				
Quarter 3, 2010	*		*	*		*		*			*			*			*	*	*	*			
Quarter 4, 2010	*	-	不	*		*	*	*	*		*		*	*			*	*	不	*	*		
Quarter 1, 2011	*		*	*		*	*	*	*	*	*		*	*			*	*	*	*	*		
Quarter 2, 2011 Ouarter 3, 2011	*		*	*			*	*	т.	*	т.		*	~	*		*	*	*	*	-		
Quarter 4, 2011	*		*	*			*	-		-	*		-		-		*	*	-	*			
Quarter 1, 2012	*		*	*		*	*	*	*	*	т.		*	*			*	*	*	*	*		
Quarter 2, 2012	*		*			-	*		*		*		*	*			*	*	*	*	*		
Quarter 3, 2012	*		*			*	*	*	*	*			*	*			*	*	*	*	*		
Quarter 4, 2012	<u> </u>		-	*		*	Ť	*	*	*	*		*	*			*	*	*	*	*		
Quarter 1, 2013	1			*		*		*	*		*		*	*				*		*	*		
Quarter 2, 2013	*			*		-	*		*		*		*				*	*	*	*	*		
Quarter 3, 2013	*		*	*		*	*	*	*	*			*				*	*	*	*			
Quarter 4, 2013	Η.		*	*		*	*	*	*	*	*	*	*	*			*	*	*	*	*		
Quarter 1, 2014	*	\vdash	*	*	\vdash	*	*	<u> </u>	*	۳	*	*	*	*	 	H	*	*	*	*	*		\vdash
Quarter 2, 2014	*	1	*	*		*	*		*		*	<u> </u>	*	Ë			*	*	*	*	*	\vdash	
Quarter 3, 2014 Quarter 3, 2014	*	1	*	*	 	*	-"		-	 	-		<u> </u>	 			*	*	*	*	Ë		
Quarter 4, 2014 Quarter 4, 2014	*	1	*	*		H	-	-		-	*		*	<u> </u>	-		*	*	*	*	*		
Quarter 1, 2015	*		*	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*
Quarter 1, 2015 Quarter 2, 2015	*	1	*	*	*	*	*		-	 	*	Ë	<u> </u>	*	*	*	*	*	*	*	*	*	*
Quarter 3, 2015	*	1	*	*	*	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*
Quarter 4, 2015	*	-	*	*	*	*	*	*	*	*	-	_	*	<u> </u>	*	*	*	*	*	*	*	*	*
Quarter 1, 2016	*		*	*	*	*	*	*	*	*	*		*		*	-	*	*	-	*	*	*	*
Quarter 2, 2016	*		*	*	*	*	-	*	*	*	-		*	*	*	*	*	*		*	*	*	*
Quarter 3, 2016	*		*	*	*	*	*	*	*	*			*	*	*	т —	*	*	*	*	*	*	*
Quarter 4, 2016	*		*	*	*	т.	*	*	Ψ	*			*	~	*		*	*	*	*	*	*	*
Quarter 1, 2017	*		*	*	*		-	*	*						*		-	*	-	*	-	*	*
Quarter 1, 2017 Quarter 2, 2017	*		*	*	*			т.	Ψ						т.		*	т.		*	*	Ψ	~
	*		*	*	*												*	*	*	*	*	*	*
Quarter 3, 2017	*		*	*	*	*	*	*	*	*	*		*	*	*		*	*	*	*	*	*	*
Quarter 4, 2017	*		*	*	*	*	т.	Ψ.	•	~	Ψ.		т.	~	Ψ.		Ψ.	*	*	*	*	Ψ.	*
Quarter 1, 2018 Quarter 2, 2018	*		*	*	*	*											*	*	*	*	*	*	*
	*		*	*	*	*	*	*	*								*	*	*	*	*	*	*
Quarter 3, 2018	*	-	*	*	*	*	不	不	不	*			*		*		*	*	*	*	*	不	*
Quarter 4, 2018	*		*	*	*	*	*	*		т.	*		*		*		*	*	*	*	*	*	*
Quarter 1, 2019	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Quarter 2, 2019											- Ju	*	*	*		*							
Quarter 3, 2019	*		*	*	*	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*
Quarter 4, 2019	*		*	*	*	*	*	*	*	*			*		*	*	*	*	*	*	*	*	*
Quarter 1, 2020	*		*	*	*	*	*	*	*	*			*	*	*	*	*	*	*	*	*	*	*
Quarter 2, 2020 Ouarter 3, 2020	*		*	*	*	*	*	*	*	*			*	*	*	*	*	*	*	*	*	*	*
Quarter 4, 2020	*		*	*	*	*		*						*			*	*	*	*	*	*	- 7
Quarter 1, 2021	*		*	*		*	*	*	*	*			*		*		*	*	*	*		*	*
Ouarter 2, 2021	*		*	*	*	*	*	*	*	*	*	*	*	*	*		*	*	*	*	*	*	*
Quarter 3, 2021	*		*	*	*	*	*	*	*	Ė	Ė	Ė	*	*	*	*	*	*	*	*	*	*	*
Quarter 4, 2021	*		*	*	*	*	*	*	*						*		*	*	*	*	*	*	*
Quarter 1, 2022	*		*	*	*	*				*			*	*	*		*	*	*	*	*	*	*
Quarter 2, 2022	*		*	*	*		*		*	*		*	*		*	*	*	*	*	*	*	*	*
Quarter 3, 2022	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Quarter 4, 2022	*		*	*	*	*	*	*			*	*					*	*	*		*	*	*
Quarter 1, 2023	*			*	*	*					*	*	*			*	*	*	*	*	*	*	*
Quarter 2, 2023	*		*	*	*	*	*	*	*	*	*	*	*		*	*	*	*	*	*	*		*
Quarter 3, 2023	*		*	*	*		*	*		*	*		*	*		*	*	*	*	*	*	*	*
Quarter 4, 2023	*			*	*	*	*	*	*	*			*	*	*	*	*	*	*	*	*	*	*
Quarter 1, 2024	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Quarter 2, 2024	*			*	*											*	*	*	*	*	*	*	*
Quarter 3, 2024	*		*	*	*	*		*		*	*	*	*			*	*	*	*	*	*	*	*
PCB-1016																							
Quarter 4, 2003							*	*	*		*							*					
Quarter 3, 2004											*												
Quarter 3, 2005	匸	匸				L	*	L		L	*			L	L				L				
Quarter 1, 2006											*												
Quarter 2, 2006	L	匸				L	L	L		L	*			L	L				L				
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Chart of MCL and Historical UTL Exceedances for the C-746-S&T Landfills (Continued)

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Quarter 3, 2006		 	 				 					—				—			—				\vdash	\vdash
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Quarter 3, 2012 * * Quarter 1, 2013 * * Quarter 2, 2013 * * Quarter 3, 2013 * * RADIUM-226 * * Quarter 4, 2002 * * Quarter 2, 2004 * * Quarter 2, 2005 * * Quarter 1, 2009 * * Quarter 4, 2014 * * Quarter 4, 2014 * * Quarter 2, 2015 * *		<u> </u>	<u> </u>				<u> </u>																$\vdash \vdash$	ш
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RADIUM-226 # # # # Quarter 4, 2002 # # # # Quarter 2, 2004 # # # # Poly and the control of the control																							ш	ш
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Chart of MCL and Historical UTL Exceedances for the C-746-S&T Landfills (Continued)

Groundwater Flow System Gradient Monitoring Well RADIUM-226	S 386	D	UCRS D	D	U	S	S	C		_	URGA									LRGA			
	386					ی	3	S	S	S	D	D	D	D	U	U	S	D	D	D	D	U	U
		389	390	393	396	221	222	223	224	384	369	372	387	391	220	394	385	370	373	388	392	395	397
Quarter 4, 2015					*	*									*		*				*	*	
Quarter 2, 2016			*						*		*	*	*	*	*	*		*					
Quarter 3, 2016																		*					
Quarter 4, 2016	*		*			*			*				*		*					*		*	
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Quarter 3, 2017					*				*	*	*									*			
Quarter 4, 2017																		*		*			
Quarter 1, 2018												*						*		*			
Quarter 4, 2018													*				*						
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Quarter 2, 2024																	*			*	*		
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RADIUM-228																							
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Quarter 4, 2003							*		*	*				*									-
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Quarter 3, 2005									*	*									*				₩
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Quarter 3, 2006									*	*		*							*				
Quarter 4, 2006									*	*							*						
Quarter 1, 2007									*			*											لــــــــــــــــــــــــــــــــــــــ
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Chart of MCL and Historical UTL Exceedances for the C-746-S&T Landfills (Continued)

Groundwater Flow System			UCR			_	_		_		URG			_				_	_	LRG			
Gradient	S	D	D	D	U	S	S	S	S	S	D	D	D	D	U	U	S	D	D	D	D	U	U
Monitoring Well	386	389	390	393	396	221	222	223	224	384	369	372	387	391	220	394	385	370	373	388	392	395	397
SODIUM Overtee 1, 2012										*		*							*				
Quarter 1, 2013 Quarter 2, 2013		<u> </u>								~		*			<u> </u>				Ψ.		-		
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Quarter 3, 2013 Quarter 4, 2013	-	-						-				*	-		-	-			*			-	
	-	-						-				*	-		-	-			Ψ.			-	
Quarter 1, 2014 Quarter 2, 2014									*		*	*							*				
	_								*		*	*			-				*				
Quarter 3, 2014		<u> </u>							*	*		*	*		<u> </u>				*				
Quarter 4, 2014 Quarter 1, 2015		<u> </u>							*	*		*	*		<u> </u>						-		
Quarter 2, 2015		<u> </u>										*	*		<u> </u>						-		
Quarter 3, 2015		<u> </u>								*		*			<u> </u>						-		
Quarter 4, 2015		<u> </u>							*	*		*			<u> </u>						-		
Quarter 2, 2016	-										*												
Quarter 3, 2016	-										*												*
Quarter 1, 2017										*	*		*					*					
Quarter 2, 2017	-								*	*	*		-					-					
Quarter 2, 2017 Quarter 2, 2018													*										
Quarter 3, 2018	_	<u> </u>											<u> </u>	*	 								
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Quarter 2, 2019	+	 	\vdash	\vdash	\vdash	\vdash	\vdash	\vdash	<u> </u>	\vdash	\vdash	\vdash	*	\vdash	\vdash	\vdash	\vdash		\vdash	\vdash	\vdash	\vdash	\vdash
Quarter 4, 2019	+	 	\vdash	\vdash	\vdash	\vdash	\vdash	\vdash	<u> </u>	\vdash	\vdash	*	Ť	\vdash	\vdash	\vdash	\vdash		\vdash	\vdash	\vdash	\vdash	\vdash
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Quarter 2, 2020	+	1	1	 	1	1	 	1		 	*	H	*	1	1	1			*	1	 	1	1
Quarter 3, 2020	+	 		 		\vdash	<u> </u>			<u> </u>	*	*	Ė		\vdash		Н		H		H		H
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Quarter 1, 2021	+	t -					\vdash			\vdash	\vdash	*	*										
Quarter 2, 2021	\top	t	1		1	1						*			1								
Quarter 3, 2021	-											*											
Quarter 4, 2021	-											*											
Quarter 1, 2022												*	*										
Quarter 2, 2022													*										
Quarter 3, 2022												*	*										
Quarter 4, 2022												*											
Quarter 2, 2023									*			*											
Quarter 4, 2023										*		*											
Quarter 1, 2024												*											
Quarter 2, 2024									*			*							*				
Quarter 3, 2024									*										*				
STRONTIUM-90																							
Quarter 2, 2003																							
Quarter 1, 2004										•													
SULFATE																							
Quarter 4, 2002																			*				
Quarter 1, 2003												*	*				*		*				
Quarter 2, 2003										*		*	*					*	*				
Quarter 3, 2003										*		*	*						*				
Quarter 4, 2003										*		*	*						*				
Quarter 1, 2004										*		*	*					*	*				
Quarter 2, 2004		<u> </u>							Ļ	*		*	*		<u> </u>		*	*	*	*			
Quarter 3, 2004		<u> </u>	L		L		<u> </u>		*	*		*	*		<u> </u>			*	*		<u> </u>		<u> </u>
Quarter 4, 2004		<u> </u>								*		*	*		<u> </u>		L.	*	*		<u> </u>		<u> </u>
Quarter 1, 2005		<u> </u>								*		*	*		<u> </u>		*	*	*				
Quarter 2, 2005										*		*	*					*	*				
Quarter 3, 2005			$oxed{oxed}$		$oxed{oxed}$			oxdot		*		*	*	匚		oxdot	*	*	*	匚	oxdot	oxdot	匚
Quarter 4, 2005										*		*	*					*	*	*			
Quarter 1, 2006										*		*	*				*	*	*	*			
Quarter 2, 2006									*	*		*	*				*	*	*	*			
Quarter 3, 2006									*	*		*	*				*		*	*			
Quarter 4, 2006									*	*		*	*				*		*				
Quarter 1, 2007									*	*		*	*				*		*	*			
Quarter 2, 2007									*	*		*	*				*		*	*			
Quarter 3, 2007									*	*		*	*				*		*	*			
Quarter 4, 2007	1					l				*		*	*				*	*	*	*			
Quarter 1, 2008	1	1								*		*	*				*	*	*	*			
Quarter 2, 2008	1	1						*		*	*	*	*	*			*	*	*	*			
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Quarter 1, 2009	+	1		\vdash		 	\vdash	1		*	\vdash	*	*	-	1	1	*	*	*	-	 	1	1
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Quarter 4, 2009	*	 							Ė	*		*	*		1		*	*	*	Ė	<u> </u>		
Z		 	1	-	1	1	-	1	*	*		*	*	-	1	 	*	_	*	1	1	 	\vdash
Quarter 1, 2010	*																						

Chart of MCL and Historical UTL Exceedances for the C-746-S&T Landfills (Continued)

Groundwater Flow System			UCR	S						1	URGA	4							_	LRG	Α.		
Gradient	S	D	D	D	U	S	S	S	S	S	D	D	D	D	U	U	S	D	D	D	D	U	U
Monitoring Well SULFATE	386	389	390	393	396	221	222	223	224	384	369	372	387	391	220	394	385	370	373	388	392	395	397
Quarter 2, 2010									*	*		*	*				*	*	*	*			
Quarter 3, 2010	-									*		*	*				*	*	*	*			
Quarter 4, 2010	*									*		*	*				*	*	*				_
Ouarter 1, 2011	*									*		*	*				*	*	*				_
Quarter 2, 2011	*									*		*	*	*			*	*	*	*			
Quarter 3, 2011	*									*		*	*	*			*	*	*	*			
Quarter 4, 2011	*									*		*	*				*	*	*	*			t
Quarter 1, 2012	*									*		*	*				*	*	*	*			
Quarter 2, 2012	*									*		*	*				*	*	*	*			
Quarter 3, 2012	*									*		*	*				*	*	*	*			
Quarter 4, 2012										*		*	*				*	*	*	*			
Quarter 1, 2013										*		*	*				*	*	*	*			
Quarter 2, 2013										*		*	*	*			*	*	*	*			
Quarter 3, 2013										*		*	*	*			*	*	*	*			
Quarter 4, 2013										*		*	*				*	*	*	*			
Quarter 1, 2014								*		*		*	*				*	*	*	*			
Quarter 2, 2014										*		*	*	*			*	*	*	*			
Quarter 3, 2014										*		*	*	*			*	*	*	*			
Quarter 4, 2014										*		*	*				*	*	*	*			
Quarter 1, 2015										*		*	*				*	*	*	*			
Quarter 2, 2015										*	*	*	*	*	*		*	*	*	*			匚
Quarter 3, 2015								*		*		*	*	*	*		*	*	*	*			oxdot
Quarter 4, 2015										*		*	*	*			*		*	*			<u> </u>
Quarter 1, 2016		<u> </u>						*		*		*	*	*			*	*	*	*			lacksquare
Quarter 2, 2016		<u> </u>			<u> </u>		<u> </u>	*		*	<u> </u>	*	*	*	*	<u> </u>	*	*	*	*	<u> </u>	<u> </u>	L
Quarter 3, 2016	_	<u> </u>						不									*		*	*			<u> </u>
Quarter 4, 2016		-								*		*	*	*	*		*	*	*	*		-	-
Quarter 1, 2017 Quarter 2, 2017	-	<u> </u>						*		*		*	*	*	*		*	*	*	*			<u> </u>
Quarter 3, 2017	-	-						*		*		*	*	*	*		*	*	*	*			-
Quarter 4, 2017	-									*		*	*	*	*		*	*	*	*			-
Quarter 1, 2018										*		*	*	*			*	*	*	*			
Quarter 2, 2018	-							*		*	*	*	*	*	*		*	*	*	*			
Quarter 3, 2018	-							*		*		*		*	*		*	*	*	*			
Quarter 4, 2018	-									*		*	*	*			*	*	*	*			
Quarter 1, 2019								*		*		*	*	*	*		*	*	*	*			t
Quarter 2, 2019								*		*		*	*	*	*		*	*	*	*			
Quarter 3, 2019			*					*		*		*	*	*	*		*	*	*	*	*		
Quarter 4, 2019			*							*		*	*	*			*	*	*	*	*		
Quarter 1, 2020								*		*		*	*	*	*		*	*	*	*	*		
Quarter 2, 2020								*		*		*	*	*	*		*	*	*	*	*		
Quarter 3, 2020			*							*		*	*				*	*	*	*	*		<u> </u>
Quarter 4, 2020										*		*	*				*	*	*	*			<u> </u>
Quarter 1, 2021										*		*	*				*	*	*	*			<u> </u>
Quarter 2, 2021	_							*		*		*	*		*		*	*	*	*	*		
Quarter 3, 2021	_	<u> </u>								*		*	*		<u> </u>		*	*	*	*			<u> </u>
Quarter 4, 2021		-								*		*	*		*		*	*	*	*		-	-
Quarter 1, 2022 Quarter 2, 2022	-	-							*	*		*	*		*		*	*	*	*			-
Quarter 3, 2022		1	*		-		-		_	*	-	*	*		*	-	*	*	*	*	-	_	\vdash
Quarter 4, 2022	-	 	-		<u> </u>	\vdash	 			*	 	*	*	\vdash	+~	 	*	*	*	*	<u> </u>	\vdash	\vdash
Quarter 1, 2023	+									*		*	*				*	*	*	*			\vdash
Quarter 2, 2023	\top		1			1				*		*	*	1	*		*	*	*	*		1	\vdash
Quarter 3, 2023										*		*	*		*		*	*	*	*			Г
Quarter 4, 2023										*		*	*				*	*	*	*			
Quarter 1, 2024										*		*	*				*	*	*	*			
Quarter 2, 2024									*	*		*	*		*		*	*	*	*			
Quarter 3, 2024									*	*		*	*	L	*		*	*	*	*			oxdot
TECHNETIUM-99																							
Quarter 4, 2002		<u> </u>											<u></u>		<u> </u>		بيا		* :				Щ
Quarter 1, 2003		<u> </u>	-	<u> </u>	<u> </u>		<u> </u>	<u> </u>			<u> </u>	<u> </u>	*	_	<u> </u>	<u> </u>	*		*	_	<u> </u>		₩
Quarter 2, 2003	*	<u> </u>	*		<u> </u>		<u> </u>			*	<u> </u>	<u> </u>	*	-	<u> </u>	<u> </u>	*		<u> </u>	طو	<u> </u>	<u> </u>	—
Quarter 3, 2003		<u> </u>	*		_		_			*	_	*	*		<u> </u>	_	*		*	*	_		\vdash
Quarter 4, 2003	-	<u> </u>	*			_				*		*	*	-	<u> </u>		*		*	不		-	\vdash
Quarter 1, 2004 Quarter 2, 2004	-	 	*		_	<u> </u>	_		_	_	_	*	*	-	 	_	*		*	*	_	-	₩
Quarter 3, 2004 Quarter 3, 2004	+	1	*		-		-			-	-	*	T		1	-	*		*	~	-	_	\vdash
Quarter 4, 2004	+		*							*		*	*		1		*	*	*				\vdash
Quarter 1, 2005	+		*							*		*	*		1		*	-	H	*			\vdash
Quarter 2, 2005	-	 	*		<u> </u>	\vdash	 			*	 	Ë	*	\vdash	 	 	*	*	*	*	<u> </u>	\vdash	\vdash
Quarter 3, 2005	-	1	*		\vdash	 	\vdash			*	\vdash	\vdash	*	-	1	\vdash	*	*	*	*	\vdash	1	\vdash
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Quarter 4, 2005			*							*		*	*				*		*	*			

Chart of MCL and Historical UTL Exceedances for the C-746-S&T Landfills (Continued)

Groundwater Flow System		-	UCRS	S						1	URGA	Α.								LRGA			
Gradient	S	D	D	D	U	S	S	S	S	S	D	D	D	D	U	U	S	D	D	D	D	U	U
Monitoring Well	386	389	390	393	396	221	222	223	224	384	369	372	387	391	220	394	385	370	373	388	392	395	397
TECHNETIUM-99																							
Quarter 1, 2006										*		*	*						*	*			
Quarter 2, 2006			*							*		-	*				*	*	*	*			
			*							*			*				*	*	*	*			
Quarter 3, 2006	*		*							*		*					*	*		*			
Quarter 4, 2006	不		<u>.</u>									不	*						*				
Quarter 1, 2007			*							*			*				*		*	*			
Quarter 2, 2007			*							*		*	*				*	*		*			
Quarter 3, 2007			*							*	*	*	*				*		*	*			
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Chart of MCL and Historical UTL Exceedances for the C-746-S&T Landfills (Continued)

Committee Ellin C			LICE:	,							(IDC)									I P.C.			
Groundwater Flow System Gradient	S	D	UCRS D	D	U	S	S	S	S	S	URGA D	A D	D	D	U	U	S	D	D	LRGA D	D	U	U
Monitoring Well	386	389	390	393	396	221	222	223	224	384	369	372	387	391	220	394	385	370	373	388	392	395	397
TECHNETIUM-99	300	367	370	373	370	221	222	223	224	304	307	312	367	371	220	374	363	370	313	300	372	373	371
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Chart of MCL and Historical UTL Exceedances for the C-746-S&T Landfills (Continued)

Groundwater Flow System		-	UCRS	3						1	URGA	A								LRG	A		
Gradient	S	D	D	D	U	S	S	S	S	S	D	D	D	D	U	U	S	D	D	D	D	U	U
Monitoring Well	386	389	390	393	396	221	222	223	224	384	369	372	387	391	220	394	385	370	373	388	392	395	397
TOTAL ORGANIC HALIDES																							
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Chart of MCL and Historical UTL Exceedances for the C-746-S&T Landfills (Continued)

Carra	UCRS						URGA										LRGA						
Gradient	S	D	D	D	U	S	S	S	S	S	D	D	D	D	U	U	S	D	D	D	D	U	U
Monitoring Well	386	389	390	393	396	221	222	223	224	384	369	372	387	391	220	394	385	370	373	388	392	395	397
TRICHLOROETHENE																							
Quarter 1, 2017																							
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* Statistical test results indicate an elevated concentration (i.e., a statistically significant increase).

MCL Exceedance

Previously reported as an MCL exceedance; however, result was equal to MCL.

UCRS = Upper Continental Recharge System

URGA = Upper Regional Gravel Aquifer LRGA = Lower Regional Gravel Aquifer

S = Sidegradient; D = Downgradient; U = Upgradient



APPENDIX H METHANE MONITORING DATA



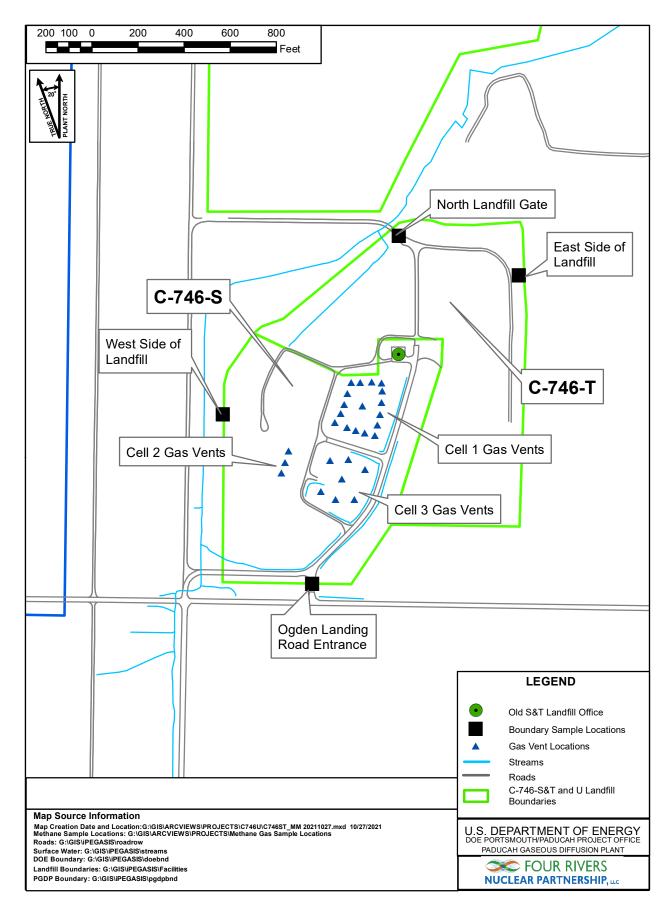


Figure H.1. C-746-S&T Landfill Methane Monitoring Locations

CP3-WM-0017-F03 - C-746-S & T LANDFILL METHANE MONITORING REPORT

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APPENDIX I SURFACE WATER ANALYSES AND LABORATORY REPORTS



Paducah OREIS SURFACE WATER MONITORING REPORT

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: L135 UPSTREAM Period: 3rd Quarter 2024

SAMPLE ID: L135SS4-24 Sample Type: REG

				Reporting	Date	Counting			
Parameter	Qualifier	Result	Units	Limit	Collected	Error (+/-)	TPU	Method	Validation
Chloride		2.47	mg/L	0.2	7/9/2024			EPA-300.0	Х
Sulfate		3.44	mg/L	0.4	7/9/2024			EPA-300.0	Х
Conductivity		115	μmhos/cm		7/9/2024				Х
рН		7.13	Std Unit		7/9/2024				Х
Iron		0.936	mg/L	0.1	7/9/2024			EPA-200.8	Х
Sodium		2.62	mg/L	0.25	7/9/2024			EPA-200.8	Х
Uranium		0.00161	mg/L	0.0002	7/9/2024			EPA-200.8	Х
Alpha activity	U	-0.4	pCi/L	7.92	7/9/2024	3.53	3.53	SW846-9310	Х
Beta activity		20.7	pCi/L	9.53	7/9/2024	7.4	8.13	SW846-9310	Х
Dissolved Solids		118	mg/L	10	7/9/2024			EPA-160.1	Х
Suspended Solids		22.4	mg/L	6.58	7/9/2024			EPA-160.2	Χ
Chemical Oxygen Demand (COD)		57.1	mg/L	20	7/9/2024			EPA-410.4	Х
Total Solids		152	mg/L	10	7/9/2024			SM-2540B	Х
Total Organic Carbon (TOC)		17.4	mg/L	2	7/9/2024			SW846-9060A	Х

Paducah OREIS SURFACE WATER MONITORING REPORT

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: L136 INSTREAM Period: 3rd Quarter 2024

SAMPLE ID: L136SS4-24 Sample Type: REG

				Reporting	Date	Counting			
Parameter	Qualifier	Result	Units	Limit	Collected	Error (+/-)	TPU	Method	Validation
Chloride		1.42	mg/L	0.2	7/9/2024			EPA-300.0	Х
Sulfate		4.83	mg/L	0.4	7/9/2024			EPA-300.0	Х
Conductivity		190	μmhos/cm		7/9/2024				Х
рН		7.38	Std Unit		7/9/2024				Х
Iron		0.158	mg/L	0.1	7/9/2024			EPA-200.8	Х
Sodium		0.939	mg/L	0.25	7/9/2024			EPA-200.8	Х
Uranium		0.000341	mg/L	0.0002	7/9/2024			EPA-200.8	Х
Alpha activity	U	4.35	pCi/L	6.32	7/9/2024	4.16	4.23	SW846-9310	Х
Beta activity		12	pCi/L	8.95	7/9/2024	6.2	6.53	SW846-9310	Х
Dissolved Solids		163	mg/L	10	7/9/2024			EPA-160.1	Х
Suspended Solids		3	mg/L	2.5	7/9/2024			EPA-160.2	Χ
Chemical Oxygen Demand (COD)		78	mg/L	20	7/9/2024			EPA-410.4	Х
Total Solids		179	mg/L	10	7/9/2024			SM-2540B	Х
Total Organic Carbon (TOC)	Н	22.2	mg/L	2	7/9/2024			SW846-9060A	Х

Paducah OREIS SURFACE WATER MONITORING REPORT

 Facility:
 C-746-S&T Landfill
 County:
 McCracken
 Permit #:
 SW07300014,SW07300015,SW07300045

Sampling Point: L154 INSTREAM Period: 3rd Quarter 2024

SAMPLE ID: L154US4-24 Sample Type: REG

				Reporting	Date	Counting			
Parameter	Qualifier	Result	Units	Limit	Collected	Error (+/-)	TPU	Method	Validation
Chloride		1.93	mg/L	0.2	7/9/2024			EPA-300.0	Х
Sulfate		3.22	mg/L	0.4	7/9/2024			EPA-300.0	Х
Conductivity		121	μmhos/cm		7/9/2024				Х
рН		7.3	Std Unit		7/9/2024				Х
Iron		1.14	mg/L	0.1	7/9/2024			EPA-200.8	Х
Sodium		1.79	mg/L	0.25	7/9/2024			EPA-200.8	Х
Uranium		0.00152	mg/L	0.0002	7/9/2024			EPA-200.8	Х
Alpha activity	U	3	pCi/L	7.37	7/9/2024	4.25	4.29	SW846-9310	Х
Beta activity		23.6	pCi/L	8.96	7/9/2024	7.39	8.35	SW846-9310	Х
Dissolved Solids		132	mg/L	10	7/9/2024			EPA-160.1	Х
Suspended Solids		28.7	mg/L	5.56	7/9/2024			EPA-160.2	Х
Chemical Oxygen Demand (COD)		78	mg/L	20	7/9/2024			EPA-410.4	Х
Total Solids		159	mg/L	10	7/9/2024			SM-2540B	Х
Total Organic Carbon (TOC)		22.6	mg/L	2	7/9/2024			SW846-9060A	Х

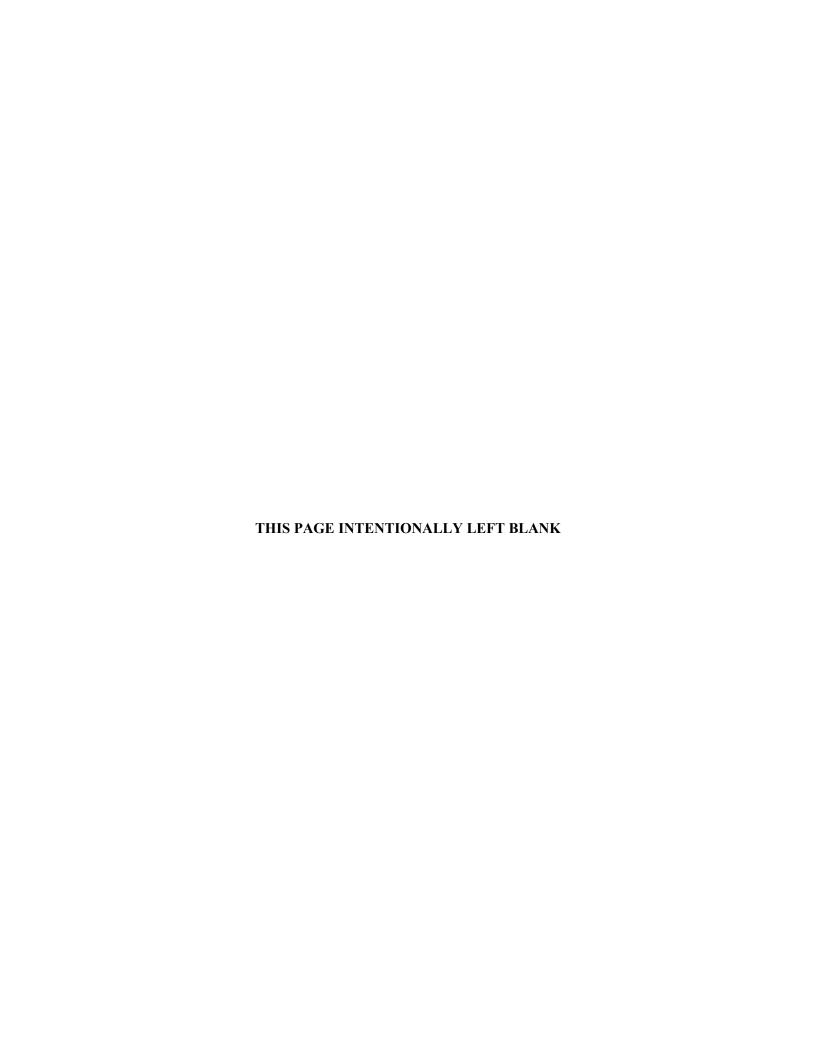
Qualifier	Code Definitions
*	Duplicate analysis not within control limits.
В	Analyte was detected in the associated blank.
Н	Analysis performed outside holding time requirement.
J	Estimated quantitation.
L	LCS and/or LCSD recovery outside of control limits.
L1	LCS/LCSD RPD outside acceptance criteria.
N	Sample spike (MS/MSD) recovery not within control limits
N1	MS/MSD or PS/PSD RPD outside acceptance criteria.
Р	Difference between results from two GC columns outside control limits.
S	Sample surrogate recovery outside acceptance criteria.
Т	Tracer recovery outside control limits of 30-110%.
U	Not detected.
W	Post-digestion spike recovery out of control limits.
W1	Post-digestion spike and post-digestion spike duplicate RPD out of control limits.
Х	Other specific flags and footnotes may be required to properly define the results.
Y1	MS/MSD recovery outside acceptance criteria.
Y2	MS/MSD RPD outside acceptance criteria.

RGA Type	RGA Type Code Definitions								
LRGA	Lower Regional Gravel Aquifer								
UCRS	Upper Continental Recharge System								
URGA	Upper Regional Gravel Aquifer								
NA	Not Applicable.								

Sample T	Sample Type Code Definitions								
REG	Regular								
FR	Field Replicate (code used for Field Duplicate)								
RI	Equipment Rinsate Blank								
FB	Field Blank								
ТВ	Trip Blank								

Validatio	Validation Code Definitions								
=	Validated result, no additional qualifier necessary								
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.								
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.								
UJ	Analyte not detected above the reported detection limit, and the reported detection limit is approximated due to quality deficiency.								
Х	Not validated								

ATTACHMENT I1 GEL LABORATORIES CERTIFICATE OF ANALYSIS



2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 October 30, 2024 Report Date:

Project:

Client ID:

FRNP00515 FRNP005

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Surface Water Quarterly(SS24-04)

Client Sample ID: Sample ID: Matrix: L135SS4-24 674864001

WS

Collect Date: 09-JUL-24 Receive Date: 10-JUL-24 Collector: Client

Parameter	Qualifier	Result Un	certainty	MDC	TPU	RL	Units	PF	DF Analys	st Date Time	Batch	Mtd.
Rad Gas Flow Propos GFPC, Gross A/B, i		0										
Alpha	U	-0.400	+/-3.53	7.92	+/-3.53	15.0	pCi/L		НН3	07/16/24 1206	2638857	1
Beta		20.7	+/-7.40	9.53	+/-8.13	50.0	pCi/L					

The following Analytical Methods were performed

Method **Description**

EPA 900.0/SW846 9310

Surrogate/Tracer Recovery Test Batch ID Recovery% **Acceptable Limits**

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Mtd.: Method DL: Detection Limit PF: Prep Factor Lc/LC: Critical Level **RL**: Reporting Limit

MDA: Minimum Detectable Activity TPU: Total Propagated Uncertainty

MDC: Minimum Detectable Concentration

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 30, 2024

Project:

Client ID:

FRNP00515

FRNP005

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Surface Water Quarterly(SS24-04)

Client Sample ID: L136SS4-24 Sample ID: 674864002 Matrix: WS Collect Date: 09-JUL-24

Receive Date: 10-JUL-24
Collector: Client

Parameter	Qualifier	Result Un	certainty	MDC	TPU	RL	Units	PF	DF Ana	lyst	Date T	ime	Batch	Mtd.
Rad Gas Flow Prop GFPC, Gross A/B		8												
Alpha	U	4.35	+/-4.16	6.32	+/-4.23	15.0	pCi/L		HH	13 0	7/16/24 1	206	2638857	1
Beta		12.0	+/-6.20	8.95	+/-6.53	50.0	pCi/L							

The following Analytical Methods were performed

Method Description

1 EPA 900.0/SW846 9310

Surrogate/Tracer Recovery Test Batch ID Recovery% Acceptable Limits

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Mtd.: Method
DL: Detection Limit PF: Prep Factor
Lc/LC: Critical Level RL: Reporting Limit

MDA: Minimum Detectable Activity TPU: Total Propagated Uncertainty

MDC: Minimum Detectable Concentration

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Certificate of Analysis

Report Date: October 30, 2024

FRNP00515

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Surface Water Quarterly(SS24-04)

Client Sample ID: L135SS4-24 Sample ID: 674864001

Matrix: WS

Collect Date: 09-JUL-24 09:41
Receive Date: 10-JUL-24
Collector: Client

64001	Client ID:	FRNP005
JL-24 09:41		

Project:

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Carbon Analysis												
9060A, Total Organ	ic Carbon "As R	Received"										
Total Organic Carbon Av	verage	17.4	0.330	2.00	mg/L		1	KB3	08/06/24	1710	2641341	1
Ion Chromatography	y											
EPA 300.0 Anions (Chloride and Su	ılfate) "As Recei	ved"									
Chloride		2.47	0.0670	0.200	mg/L		1	TXT1	07/13/24	1340	2640093	2
Sulfate		3.44	0.133	0.400	mg/L		1					
Metals Analysis-ICI	P-MS											
200.8/200.2 MIMIC	P Metals- Fe Na	u U "As Received	1"									
Iron		0.936	0.0330	0.100	mg/L	1.00		BAJ	07/26/24	1745	2638503	3
Sodium		2.62	0.0800	0.250	mg/L	1.00						
Uranium		0.00161	0.0000670	0.000200	mg/L	1.00	1					
Solids Analysis												
EPA 160.1 Solids, I	Dissolved "As Re	eceived"										
Total Dissolved Solids		118	2.38	10.0	mg/L			KLP1	07/15/24	1557	2640404	4
EPA 160.2 Total Su	spended Liq "As	s Received"										
Total Suspended Solids		22.4	1.50	6.58	mg/L			AXH3	07/11/24	0759	2638784	5
SM 2540 B Solids, 7	Total "As Receiv	ved"										
Total Solids		152	6.29	10.0	mg/L			KLP1	07/15/24	1341	2640407	6
Spectrometric Analy	ysis											
EPA 410.4 Chem. C	Oxygen Demand	"As Received"										
COD		57.1	8.95	20.0	mg/L		1	JW2	07/10/24	1549	2638268	7
The following Prep	The following Prep Methods were performed:											
Method	Description	n		Analyst	Date	-	Time	e Pr	ep Batch			
EPA 200.2	ICP-MS 200.	.2 PREP		BB2	07/16/24		1545	26	38502			

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Certificate of Analysis

Report Date: October 30, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Surface Water Quarterly(SS24-04)

Client Sample ID: L135SS4-24 Project: FRNP00515 Sample ID: 674864001 Client ID: FRNP005

Parameter	Qualifier	Result	DL	. RL	Units	PF	DF Analyst Date	Time Batch	Method			
The following Analy	tical Methods	were performed:										
Method	Description	n		Analyst Comments								
1	SW846 9060	A										
2	EPA 300.0											
3	EPA 200.8											
4	EPA 160.1											
5	EPA 160.2											
6	SM 2540B											
7	EPA 410.4											

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

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Certificate of Analysis

Project:

Client ID:

Report Date: October 30, 2024

FRNP00515

FRNP005

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Surface Water Quarterly(SS24-04)

Client Sample ID: L136SS4-24 Sample ID: 674864002

Matrix: WS

Collect Date: 09-JUL-24 09:30 Receive Date: 10-JUL-24 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Carbon Analysis												
9060A, Total Organi	c Carbon "As R	eceived"										
Total Organic Carbon Ave		22.2	0.660	2.00	mg/L		2	KB3	08/07/24	1939	2641341	1
Ion Chromatography												
EPA 300.0 Anions (Chloride and Su	lfate) "As Receive	d"									
Chloride		1.42	0.0670	0.200	mg/L		1	TXT1	07/14/24	0316	2640093	2
Sulfate		4.83	0.133	0.400	mg/L		1					
Metals Analysis-ICP	-MS											
200.8/200.2 MIMICI	P Metals- Fe Na	U "As Received"										
Iron		0.158	0.0330	0.100	mg/L	1.00	1	BAJ	07/26/24	1748	2638503	3
Sodium		0.939	0.0800	0.250	mg/L	1.00	1					
Uranium		0.000341	0.0000670	0.000200	mg/L	1.00	1					
Solids Analysis												
EPA 160.1 Solids, D	issolved "As Re	eceived"										
Total Dissolved Solids		163	2.38	10.0	mg/L			KLP1	07/15/24	1557	2640404	4
EPA 160.2 Total Sus	pended Liq "As	Received"										
Total Suspended Solids		3.00	0.570	2.50	mg/L			AXH3	07/11/24	0759	2638784	5
SM 2540 B Solids, T	otal "As Receiv	ed"										
Total Solids		179	6.29	10.0	mg/L			KLP1	07/15/24	1341	2640407	6
Spectrometric Analy	sis											
EPA 410.4 Chem. O:	xygen Demand	"As Received"										
COD		78.0	8.95	20.0	mg/L		1	JW2	07/10/24	1549	2638268	7
The following Prep Methods were performed:												
Method	Description	n		Analyst	Date	,	Time	Pr	ep Batch			
EPA 200.2	ICP-MS 200.	2 PREP		BB2	07/16/24		1545	26	38502			

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Certificate of Analysis

Report Date: October 30, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-S&T Landfill Surface Water Quarterly(SS24-04)

Client Sample ID: L136SS4-24 Project: FRNP00515 Sample ID: 674864002 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
The following Analytic	cal Methods v	vere performed:							
Method	Description					Analys	st Comments		
1	SW846 9060A	Λ							
2	EPA 300.0								
3	EPA 200.8								
4	EPA 160.1								
5	EPA 160.2								
6	SM 2540B								
7	EPA 410.4								

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

ATTACHMENT I2 GEL LABORATORIES CERTIFICATE OF ANALYSIS



2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 October 30, 2024 Report Date:

Project:

Client ID:

FRNP00514 FRNP005

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Surface Water Quarterly(US24-04)

Client Sample ID: Sample ID: Matrix: L150US4-24 674868001

WS

Collect Date: 09-JUL-24 Receive Date: 10-JUL-24 Collector: Client

Parameter	Qualifier	Result Un	certainty	MDC	TI	U RL	Units	PF	DF Analys	t Date Time	Batch	Mtd.
Rad Gas Flow Propo GFPC, Gross A/B,		0										
Alpha	U	2.28	+/-3.47	6.17	+/-3.	15.0	pCi/L		HH3	07/25/24 1806	2638857	1
Beta	U	8.46	+/-6.66	10.7	+/-6.	50.0	pCi/L					

The following Analytical Methods were performed

Method **Description**

EPA 900.0/SW846 9310

Surrogate/Tracer Recovery Test Batch ID Recovery% **Acceptable Limits**

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Mtd.: Method DL: Detection Limit PF: Prep Factor Lc/LC: Critical Level **RL**: Reporting Limit

MDA: Minimum Detectable Activity TPU: Total Propagated Uncertainty

MDC: Minimum Detectable Concentration

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 30, 2024

Project:

Client ID:

FRNP00514 FRNP005

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Surface Water Quarterly(US24-04)

Client Sample ID: L154US4-24 Sample ID: 674868002 Matrix: WS

Matrix: WS
Collect Date: 09-JUL-24
Receive Date: 10-JUL-24
Collector: Client

Qualifier **Result Uncertainty MDC** DF Analyst Date Time Batch Mtd. **Parameter TPU** RL Units **Rad Gas Flow Proportional Counting** GFPC, Gross A/B, liquid "As Received" Alpha 3.00 +/-4.25 7.37 +/-4.29 15.0 pCi/L HH3 07/16/24 1206 2638857 1 +/-7.39 Beta 23.6 8.96 +/-8.35 50.0 pCi/L

The following Analytical Methods were performed

 Method
 Description

 1
 EPA 900.0/SW846 9310

Surrogate/Tracer Recovery Test Batch ID Recovery% Acceptable Limits

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Mtd.: Method
DL: Detection Limit PF: Prep Factor
Lc/LC: Critical Level RL: Reporting Limit

MDA: Minimum Detectable Activity TPU: Total Propagated Uncertainty

MDC: Minimum Detectable Concentration

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Certificate of Analysis

Company: Four Rivers Nuclear Partnership,

Address: LLC

5600 Hobbs Road

Kevil, Kentucky 42053 Report Date: October 30, 2024

Project:

Client ID:

FRNP00514

FRNP005

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Surface Water Quarterly(US24-04)

Client Sample ID: L351US4-24 Sample ID: 674868003 Matrix: WS

Matrix: WS
Collect Date: 09-JUL-24
Receive Date: 10-JUL-24
Collector: Client

Parameter	Qualifier	Result Ur	ncertainty	MDC	TI	U RL	Units	PF	DF Analy	st Date T	ime	Batch 1	Mtd.
Rad Gas Flow Pro	oportional Countir B, liquid "As Recei	0											
Alpha	U	5.10	+/-4.49	6.58	+/-4.	59 15.0	pCi/L		нн3	07/16/24 12	206	2638857	1
Beta		20.4	+/-7.03	8.83	+/-7.	84 50.0	pCi/L						

The following Analytical Methods were performed

Method Description

1 EPA 900.0/SW846 9310

Surrogate/Tracer Recovery Test Batch ID Recovery% Acceptable Limits

Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor Mtd.: Method
DL: Detection Limit PF: Prep Factor
Lc/LC: Critical Level RL: Reporting Limit

MDA: Minimum Detectable Activity TPU: Total Propagated Uncertainty

MDC: Minimum Detectable Concentration

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: October 30, 2024

FRNP00514

FRNP005

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Surface Water Quarterly(US24-04)

Client Sample ID: L150US4-24 Sample ID: 674868001

Matrix: WS

Collect Date: 09-JUL-24 09:06 Receive Date: 10-JUL-24 Collector: Client

Parameter Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	Batch	Method
Carbon Analysis											
9060A, Total Organic Carbon "As R	eceived"										
Total Organic Carbon Average	13.5	0.330	1.00	mg/L		1	KB3	08/06/24	0427	2641337	1
Ion Chromatography											
EPA 300.0 Anions (Chloride and Su	lfate) "As Received"										
Chloride	36.9	0.335	1.00	mg/L		5	TXT1	07/13/24	1442	2640093	2
Sulfate	8.05	0.665	2.00	mg/L		5					
Metals Analysis-ICP-MS											
200.8/200.2 MIMICP Metals- Fe Na	U "As Received"										
Iron	3.95	0.0330	0.100	mg/L	1.00	1	BAJ	07/26/24	1751	2638503	3
Sodium	23.3	0.0800	0.250	mg/L	1.00	1					
Uranium	0.000319	0.0000670	0.000200	mg/L	1.00	1					
Solids Analysis											
EPA 160.1 Solids, Dissolved "As Re	eceived"										
Total Dissolved Solids	200	2.38	10.0	mg/L			KLP1	07/15/24	1557	2640404	4
EPA 160.2 Total Suspended Liq "As	Received"										
Total Suspended Solids	63.4	1.78	7.81	mg/L			AXH3	07/11/24	0759	2638784	5
SM 2540 B Solids, Total "As Receiv	ved"										
Total Solids	273	6.29	10.0	mg/L			KLP1	07/15/24	1341	2640407	6
Spectrometric Analysis											
EPA 410.4 Chem. Oxygen Demand	"As Received"										
COD	45.5	8.95	20.0	mg/L		1	JW2	07/10/24	1549	2638268	7
The following Prep Methods were po	erformed:										
Method Description	n		Analyst	Date	Т	ime	Pr	ep Batch			_
EPA 200.2 ICP-MS 200.	2 PREP		BB2	07/16/24	1	545	263	38502			

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Certificate of Analysis

Report Date: October 30, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Surface Water Quarterly(US24-04)

Client Sample ID: L150US4-24 Project: FRNP00514 Sample ID: 674868001 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst Date	Γime Batch	Method
The following Analytic	cal Methods v	vere performed:							
Method	Description					Analys	st Comments		
1	SW846 9060A	Λ							
2	EPA 300.0								
3	EPA 200.8								
4	EPA 160.1								
5	EPA 160.2								
6	SM 2540B								
7	EPA 410.4								

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

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Certificate of Analysis

Project:

Client ID:

Report Date: October 30, 2024

FRNP00514

FRNP005

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Surface Water Quarterly(US24-04)

Client Sample ID: L154US4-24 Sample ID: 674868002

Matrix: WS

Collect Date: 09-JUL-24 09:17
Receive Date: 10-JUL-24
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time	e Batch	Method
Carbon Analysis												
9060A, Total Org	anic Carbon "As R	eceived"										
Total Organic Carbon	Average	22.6	0.660	2.00	mg/L		2	KB3	08/06/24	1054	2641337	1
Ion Chromatograp	ohy											
EPA 300.0 Anion	s (Chloride and Su	lfate) "As Received	! "									
Chloride	`	1.93	0.0670	0.200	mg/L		1	TXT1	07/14/24	0418	2640093	2
Sulfate		3.22	0.133	0.400	mg/L		1					
Metals Analysis-I	CP-MS											
200.8/200.2 MIM	ICP Metals- Fe Na	U "As Received"										
Iron		1.14	0.0330	0.100	mg/L	1.00	1	BAJ	07/26/24	1754	2638503	3
Sodium		1.79	0.0800	0.250	mg/L	1.00	1					
Uranium		0.00152	0.0000670	0.000200	mg/L	1.00	1					
Solids Analysis												
EPA 160.1 Solids	, Dissolved "As Re	eceived"										
Total Dissolved Solids	3	132	2.38	10.0	mg/L			KLP1	07/15/24	1557	2640404	4
EPA 160.2 Total S	Suspended Liq "As	Received"										
Total Suspended Solid	ls	28.7	1.27	5.56	mg/L			AXH3	07/11/24	0759	2638784	5
SM 2540 B Solids	s, Total "As Receiv	ved"										
Total Solids		159	6.29	10.0	mg/L			KLP1	07/15/24	1341	2640407	6
Spectrometric Ana	alysis											
EPA 410.4 Chem.	Oxygen Demand	"As Received"										
COD		78.0	8.95	20.0	mg/L		1	JW2	07/10/24	1549	2638268	7
The following Pre	ep Methods were p	erformed:										
Method	Description			Analyst	Date	7	rim,	, Pr	en Ratch			

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 30, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Surface Water Quarterly(US24-04)

Client Sample ID: L154US4-24 Project: FRNP00514 Sample ID: 674868002 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
The following Analytic	al Methods w	ere performed:							
Method	Description				1	Analys	st Comments		
1	SW846 9060A								
2	EPA 300.0								
3	EPA 200.8								
4	EPA 160.1								
5	EPA 160.2								
6	SM 2540B								
7	EPA 410.4								

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Project:

Client ID:

Report Date: October 30, 2024

FRNP00514

FRNP005

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Surface Water Quarterly(US24-04)

Client Sample ID: L351US4-24 Sample ID: 674868003

Matrix: WS

Collect Date: 09-JUL-24 08:54
Receive Date: 10-JUL-24
Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analy	st Date	Time Batcl	Method
Carbon Analysis											
9060A, Total Organic O	Carbon "As R	eceived"									
Total Organic Carbon Avera	ge H	27.8	0.660	2.00	mg/L		2	KB3	08/07/24	2020 264134	1 1
Ion Chromatography											
EPA 300.0 Anions (Ch	loride and Su	lfate) "As Received"									
Chloride		2.14	0.0670	0.200	mg/L		1	TXT1	07/14/24	0450 264009	3 2
Sulfate		3.55	0.133	0.400	mg/L		1				
Metals Analysis-ICP-M	4S										
200.8/200.2 MIMICP N	Metals- Fe Na	U "As Received"									
Iron		1.33	0.0330	0.100	mg/L	1.00		BAJ	07/26/24	1756 263850	3
Sodium		2.10	0.0800	0.250	mg/L	1.00					
Uranium		0.000987	0.0000670	0.000200	mg/L	1.00	1				
Solids Analysis											
EPA 160.1 Solids, Diss	solved "As Re	eceived"									
Total Dissolved Solids		118	2.38	10.0	mg/L			KLP1	07/15/24	1557 264040	4 4
EPA 160.2 Total Suspe	ended Liq "As	Received"									
Total Suspended Solids		45.5	1.50	6.58	mg/L			AXH3	07/11/24	0759 263878	4 5
SM 2540 B Solids, Tot	al "As Receiv	ved"									
Total Solids		179	6.29	10.0	mg/L			KLP1	07/15/24	1341 264040	7 6
Spectrometric Analysis	S										
EPA 410.4 Chem. Oxy	gen Demand	"As Received"									
COD		92.0	8.95	20.0	mg/L		1	JW2	07/10/24	1549 263826	8 7
The following Prep Me	ethods were p	erformed:									
Method	Description	n		Analyst	Date	,	Time	Pr	ep Batch		
EPA 200.2	ICP-MS 200.	2 PREP		BB2	07/16/24		1545	26	38502		

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 30, 2024

Company: Four Rivers Nuclear Partnership, LLC

Address: 5600 Hobbs Road

Kevil, Kentucky 42053

Contact: Ms. Jaime Morrow

Project: C-746-U Landfill Surface Water Quarterly(US24-04)

Client Sample ID: L351US4-24 Project: FRNP00514 Sample ID: 674868003 Client ID: FRNP005

Parameter	Qualifier	Result	DL	RL	Units	PF	DF Analyst Date	Time Batch	Method
The following Analytic	cal Methods v	vere performed:							
Method	Description					Analys	st Comments		
1	SW846 9060A	Λ							
2	EPA 300.0								
3	EPA 200.8								
4	EPA 160.1								
5	EPA 160.2								
6	SM 2540B								
7	EPA 410.4								

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit

MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit



APPENDIX J ANALYTICAL LABORATORY CERTIFICATION





Accredited Laboratory

A2LA has accredited

GEL LABORATORIES, LLC

Charleston, SC

for technical competence in the field of

Environmental Testing

In recognition of the successful completion of the A2LA evaluation process that includes an assessment of the laboratory's compliance with ISO/IEC 17025:2017, the 2009 and 2016 TNI Environmental Testing Laboratory Standard, the requirements of the Department of Defense Environmental Laboratory Accreditation Program (DoD ELAP), and the requirements of the Department of Energy Consolidated Audit Program (DOECAP) as detailed in Version 5.4 of the DoD/DOE Quality System Manual for Environmental Laboratories (QSM), accreditation is granted to this laboratory to perform recognized EPA methods as defined on the associated A2LA Environmental Scope of Accreditation. This accreditation demonstrates technical competence for this defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Presented this 26th day of June 2023.

Mr. Trace McInturff, Vice President, Accreditation Services For the Accreditation Council Certificate Number 2567.01 Valid to June 30, 2025



APPENDIX K LABORATORY ANALYTICAL METHODS



LABORATORY ANALYTICAL METHODS

Analytical Method	Preparation Method	Product
SM 2540B		Solids, Total
SW846 8260D		Volatile Organic Compounds (VOC) by Gas Chromatograph/Mass Spectrometer
SW846 8011	SW846 8011 PREP	Analysis of 1,2-Dibromoethane (EDB), 1,2-Dibromo-3-Chloropropane (DBCP) and
		1,2,3-Trichloropropane in Water by GC/ECD Using Methods 504.1 or 8011
SW846 8082A	SW846 3535A	Analysis of Polychlorinated Biphenyls by GC/ECD by ECD
SW846 6020B	SW846 3005A	Determination of Metals by ICP-MS
SW846 7470A	SW846 7470A Prep	Mercury Analysis Using the Perkin Elmer Automated Mercury Analyzer
SW846 9060A		Carbon, Total Organic
SW846 9012B	SW846 9010C Distillation	Cyanide, Total
EPA 300.0		Ion Chromatography Iodide
SW846 9056A		Ion Chromatography
EPA 160.1		Solids, Total Dissolved
EPA 160.2		Solids, Total Suspended
EPA 200.8	EPA 200.2	Determination of Metals by ICP-MS
EPA 410.4		COD
Eichrom Industries, AN-1418		AlphaSpec Ra226, Liquid
DOE EML HASL-300, Th-01-RC Modified		Th-01-RC M, Th Isotopes, Liquid
EPA 904.0 Modified		904.0 Mod, Ra228, Liquid
SW846 9310		9310, Alpha/Beta Activity, liquid
EPA 905.0 Modified		905.0 Mod, Sr90, liquid
DOE EML HASL-300, Tc-02-RC Modified		Tc-02-RC-MOD, Tc99, Liquid
EPA 906.0 Modified		906.0M, Tritium Dist, Liquid
SW846 9020B		Total Organic Halogens (TOX)



APPENDIX L MICRO-PURGING STABILITY PARAMETERS



Micro-Purge Stability Parameters for the C-746-S&T Landfills

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			THE STATE OF THE PARTY OF THE P	⁽² (1)	Turidi Turidi				digital digita	idin likeda	
		Contain Contain	Strict St	THE P	Tuhidi Tuhidi		Z effet		Jenes September 1	Title	S OF SPECIAL SERVICES
			in Si), \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	id sidi						
MW220	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	COL	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Dig.	Zin,	MW221	/K ^{ON}	Cor	180	Qig.	Zin,
Date Collected: 7/24/24						Date Collected: 7/24/24					
814	62.6	416	6.25	4.40	2.81	0728	64.8	394	6.17	4.80	2.40
817	62.8	416	6.24	3.65	1.64	0731	65.0	396	6.20	4.86	2.30
820 IW222	62.8	417	6.23	3.55	1.11	0734 MW223	65.4	396	6.22	4.90	2.50
ate Collected: 7/25/24						Date Collected: 7/25/24					
811	64.2	388	6.14	5.80	0.00	0726	64.9	392	6.09	5.00	4.36
314	64.4	388	6.10	4.40	0.00	0729	63.5	395	6.04	2.52	3.48
817 IW224	64.6	389	6.10	4.32	0.00	0732 MW369	63.7	396	6.03	2.41	3.33
ate Collected: 7/25/24						Date Collected: 7/17/24					
013	65.5	452	6.18	6.49	1.30	1234	70.9	375	6.26	7.01	-2.73
016	65.2	458	6.13	4.65	1.11	1237	68.6	341	6.11	2.01	-3.52
019 W370	65.0	460	6.11	4.57	1.06	1240 MW372	68.3	342	6.09	1.95	-3.60
ate Collected: 7/17/24						Date Collected: 7/17/24					
447	65.7	463	6.06	3.88	-3.45	1020	64.5	761	6.03	0.69	-4.06
50	66.3	457	6.05	3.71	-3.41	1023	65.9	761	6.02	0.69	-4.11
153 W373	66.7	454	6.05	3.66	-3.39	1026 MW384	66.3	762	6.02	0.68	-4.13
ate Collected: 7/17/24						Date Collected: 7/23/24					
331	64.1	945	6.03	1.32	-2.18	0759	63.6	428	6.14	5.07	0.00
34	64.7	951	6.02	0.82	-2.16	0802	63.7	425	6.13	4.75	0.00
87 V385	64.9	949	6.02	0.81	-2.17	0805 MW386	63.8	420	6.11	4.70	0.00
te Collected: 7/23/24						Date Collected: 7/23/24					
41	63.3	410	6.31	3.21	1.12	0938	62.6	579	6.80	2.99	0.00
4	63.1	409	6.31	1.89	1.22	0941	62.5	583	6.76	2.20	0.00
47 W387	62.9	410	6.32	1.79	1.16	0944 MW388	62.7	586	6.75	2.10	0.00
te Collected: 7/22/24						Date Collected: 7/22/24					
10	67.4	569	6.24	5.02	0.34	1401	63.6	466	6.02	4.45	4.02
13	67.0	565	6.19	4.59	0.07	1404	63.6	466	6.01	4.39	3.87
16 W390	66.7	566	6.19	4.53	0.06	1407 MW391	63.7	466	5.99	4.38	3.66
te Collected: 7/23/24						Date Collected: 7/23/24					
16	63.7	593	6.32	3.78	0.00	1021	63.6	387	6.28	5.99	0.00
19	63.2	594	6.33	3.06	0.00	1024	63.0	383	6.17	5.12	0.00
22 W392	63.2	600	6.34	3.00	0.00	1027 MW393	63.1	384	6.13	5.02	0.00
te Collected: 7/23/24						Date Collected: 7/24/24					
03	63.9	331	6.02	3.40	0.00	1111	65.9	462	6.53	3.41	19.67
06 09	63.7	330	5.97	1.91	0.00	1114 1117	66.0	460	6.40	1.09	18.01
W394	63.5	329	5.97	1.87	0.00	MW395	66.1	460	6.37	1.00	18.09
te Collected: 7/24/24						Date Collected: 7/24/24					
57	64.1	404		5.61	0.00	0957	62.3	385	6.06	4.55	2.00
00	63.7	402	6.02	4.71	0.00	1000	62.6 62.9	390 391	6.08	3.59	1.04
W396	63.8	400	0.03	4.66	0.00	MW397	62.9	391	0.09	3.30	1.09
ate Collected: 7/24/24						Date Collected: 7/22/24					
34	63.5	644	6.55	3.77	0.00	1455	66.2	325	5.99	6.61	1.35
37	63.6	642	6.57	2.68	0.00	1458	65.8	320	5.97	6.22	2.21
V369 Resample	63.6	643	6.58	2.61	0.00	1501 MW370 Resample	65.7	318	5.95	6.17	3.02
te Collected: 7-30-24						Date Collected: 7-30-24					
25	71.0	321	6.09	6.83	0.0	0803	66.7	434	6.06	4.78	0.00
28	69.7	330	6.06	3.06	0.0	0806	69.5	438	6.07	4.20	0.00
	69.9	336	6.06	3.00	0.0	0809	69.6	439	6.06	4.22	0.00
						MW373 Resample					
W372 Resample						Date Collected: 7-30-24					
W372 Resample ate Collected: 7-30-24	65.6	745	6.17	3.13	0.00	Date Collected: 7-30-24 0953	65.6	943	6.09	1.46	0.0
731 IW372 Resample ate Collected: 7-30-24 014 017 020	65.6 66.0 66.5	745 748 749	6.17 6.09 6.06	3.13 1.64 1.57	0.00 0.00 0.00		65.6 65.4 65.9	943 944 943	6.09 6.05 6.04	1.46 1.24 1.14	0.0 0.0 0.0

