

BIG RIVERS ELECTRIC CORPORATION

# 2023 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT – WILSON PHASE II LANDFILL

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BIG RIVERS ELECTRIC CORPORATION D.B. WILSON GENERATING  
STATION

PROJECT NO. 156880

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## List of Abbreviations

Abbreviation	Term/Phrase/Name
ACM	Assessment of Corrective Measures
BREC	Big Rivers Electric Corporation
CCR	Coal Combustion Residuals
CCR Rule	Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals (CCR) from Electric Utilities; Final Rule, dated April 17, 2015, amended July 30, 2018, and on September 28, 2020
CFR	Code of Federal Regulations
CiP	closure in place
GWAP	Groundwater Assessment Plan
GWPS	groundwater protection standard
IC	institutional control
KAR	Kentucky Administrative Regulation
KDWM	Kentucky Department for Environmental Protection, Division of Waste Management
LCL	lower confidence limit
Report	2023 Annual Groundwater Monitoring and Corrective Action Report
SSI	statistically significant increase
SSL	statistically significant level
TDS	total dissolved solids
Unit	Wilson Phase II CCR Landfill
USEPA	United States Environmental Protection Agency
Wilson Station / Site	D.B. Wilson Generating Station located in Ohio County, Kentucky

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## 1.0 EXECUTIVE SUMMARY

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This 2023 Annual Groundwater Monitoring and Corrective Action Report (Report) summarizes groundwater monitoring and corrective action activities completed between January 1 and December 31, 2023, at the Big Rivers Electric Corporation (BREC) D.B. Wilson Generating Station (Wilson Station / Site) Phase II Landfill (the Unit) as required by 40 Code of Federal Regulations (CFR) §257.90(e) of the United States Environmental Protection Agency (USEPA) Coal Combustion Residuals (CCR) Rule. A Site figure illustrating the location of the Unit is presented as **Figure 1**. The program monitoring networks for the Unit, including supporting characterization and water level only monitoring wells are summarized in **Table 1** and illustrated in **Figure 2**.

Results of baseline groundwater monitoring performed in 2016 and 2017 indicated that the Unit would require initiation of assessment monitoring under the CCR Rule, as most of the Appendix III constituents, excluding fluoride and pH, have downgradient statistically significant increases (SSIs) over background. On February 5, 2018, BREC posted a formal notification on their publicly accessible CCR reporting website that the Unit would transition from baseline detection to an assessment monitoring program. On October 26, 2018, BREC posted a formal notification on their publicly accessible CCR reporting website that one or more constituent in Appendix IV was detected at statistically significant levels (SSLs) above the established groundwater protection standards (GWPS) as required by 40 CFR §257.107(h)(6). On January 14, 2019, BREC posted a formal notification on their publicly accessible CCR reporting website that the Wilson Phase II Landfill would initiate an Assessment of Corrective Measures (ACM) per 40 CFR §257.95(g)(5), fulfilling the requirement of 40 CFR §257.107(h)(7). In June 2019 BREC finalized the ACM in which applicable remedial technologies to address cobalt impacts in groundwater were identified pursuant to Title 40 CFR §257.96. A report summarizing the results of the ACM (AECOM, 2019b) was posted to BREC's publicly accessible CCR reporting website on July 10, 2019. A public meeting has not been held to date to discuss the results of the ACM for the Wilson Phase II Landfill. BREC is working to establish a comprehensive list of data collection needs to proceed forward with remedy evaluation for the Unit and anticipates providing additional data in future semi-annual remedy selection progress reports.

Groundwater analytical data collected during assessment monitoring at the Unit indicated that Appendix IV constituents were detected in downgradient compliance monitoring wells at SSIs over background. Per CCR Rule requirements, GWPSs for each Appendix IV constituent were developed and the data were statistically tested for whether the concentrations represented SSLs above their respective GWPSs. SSLs identified at monitoring wells in the current annual reporting period are as follows:

- Cobalt: MW-10
- Lithium: MW-6

Other activities and conditions for the 2023 annual reporting period include:

- Semi-annual assessment groundwater monitoring events were performed in April and October 2023.
- No program transitions (detection to assessment or vice versa) were triggered; Unit remains in assessment monitoring.

Anticipated activities for the next 2024 annual reporting period include:

- Completion of two semi-annual assessment groundwater monitoring events.
- Progress towards selection of a remedy for the Unit.

## 2.0 INTRODUCTION

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At the request of BREC, Burns & McDonnell prepared this Report for the BREC Wilson Station Unit, located in Ohio County, Kentucky. This report was prepared in accordance with §257.90(e) of 40 CFR Part 257 and 261 of the USEPA CCR Rule. The CCR Rule was established to regulate the disposal of CCR produced by electricity generating facilities (USEPA, 2015; USEPA, 2018; USEPA, 2020a; and 2020b).

This Report summarizes all activities related to the CCR Rule groundwater monitoring program at the Unit in 2023. The following sections present a site background summary, a discussion of groundwater monitoring activities performed, a summary of laboratory results, statistical evaluation findings, and conclusions regarding uppermost groundwater conditions in the aquifer system subject to monitoring under the CCR Rule.

### 2.1 Purpose and Scope

This Report has been prepared per 40 CFR §257.90(e) to document the status of the groundwater monitoring and corrective action program at the Unit, summarize key actions completed, describe any problems encountered, discuss any actions to resolve the problems, and provide key activities for the upcoming year. This document is the seventh annual Report for the Unit.

### 2.2 Site Description

The Wilson Phase II Landfill is located in Ohio County approximately 5 miles northwest of the town of Centertown, Kentucky (**Figure 1**). The Unit is located northwest and adjacent to Wilson Station. The current Wilson Phase II Landfill footprint is approximately 92 acres (**Figure 2**). Adjacent to the Phase II Landfill to the east is the Wilson Station Phase I Landfill, which is currently being regulated by Special Waste permit by the Kentucky Division of Waste Management (KDWM) under Title 401 Kentucky Administrative Regulation (KAR) Section 45. The Wilson Phase II Landfill is currently active and raised above adjacent ground to a maximum elevation of approximately 532 feet above mean sea level. The original ground surface within the landfill footprint was an irregular post coal mining reclaimed surface.

### 2.3 CCR Rule Program Monitoring Well System

#### 2.3.1 Compliance Monitoring Wells

Prior to implementation of the CCR Rule, a groundwater monitoring well network was already present at the Unit in compliance with the requirements of the facility's operating permit. The existing wells are located along the perimeter of the permitted footprint for the Wilson Phase II Landfill and meet the CCR Rule requirements that downgradient monitoring wells must be located at the waste boundary of the (active) CCR unit, or as close as practicable.

Under the requirements stated in the operating permit, five (5) monitoring wells (MW-5, MW-6, MW-7, MW-8, and MW-10) were installed adjacent to the Wilson Phase II CCR Landfill to determine the general direction of groundwater movement and to monitor groundwater at

the Site. Monitoring Well MW-8 is located north of the landfill and is considered upgradient. Monitoring wells MW-5, MW-6 (both west of the landfill), MW-7 (southwest of the landfill), and MW-10 (south of the landfill) are considered downgradient compliance monitoring wells located near the waste boundary of the Unit. As-built construction details of each well are summarized on **Table 1**. The locations of the groundwater monitoring wells are shown in **Figure 2**. Each well has a dedicated bladder pump and tubing system installed for sampling purposes.

As stated in the CCR monitoring well network certification, the stratigraphic interval considered as the most prominent water-transmitting zone within and adjacent to the Wilson Station is material identified as reclaimed surface coal mining spoil material comprised of disrupted consolidated sandstone and shale of the Carbondale Formation. The United States Geological Survey (USGS) Geologic Map of the Equality Quadrangle (Goudarzi, G.H., 1969) describes underlying Carbondale Formation bedrock as “Sandstone, siltstone, shale, coal and underclay: Sandstone, light- to medium-gray, fine-grained, massive, micaceous, locally grades into thin-bedded siltstone. Siltstone, light- to medium-gray and yellowish-brown. Shale, light- to dark-gray and brown, locally carbonaceous, in places calcareous and fossiliferous; contains sideritic nodules and lenses. Number 9 coal bed at base of the Unit averages about 4 feet thick.” For purposes of compliance with the CCR Rule groundwater monitoring requirements, this disrupted sequence comprising the unconsolidated mine spoil is considered the uppermost aquifer underlying the Wilson Phase II Landfill.

Details about the monitoring network are presented in the *Monitoring Well Completion Report, D.B. Wilson Special Waste Landfill, Solid Waste Permit Number 092-00004, Ohio County, Kentucky* (Associated Engineers, Inc., April 13, 2009). Monitoring Wells MW-1, MW-2, MW-3, MW-4, P-9, and P-11 are included in the CCR program as “water level only” monitoring points.

No new CCR Rule compliance monitoring wells were installed in 2023.

### 2.3.2 Characterization Monitoring Wells

To address the CCR Rule assessment monitoring program requirements of 40 CFR §257.95(g)(1) at the Phase II Landfill (permitted as a CCR Landfill), five (5) Characterization monitoring wells (MW-102, MW-104, MW-105, MW-110, and MW-4D) were installed in October 2018 for the characterization of groundwater at locations indicated on **Figure 2**. A *Monitoring Well Construction Progress Report* (AECOM, 2019c), included as Appendix B in the *2019 Annual Groundwater Monitoring and Corrective Action Report* (AECOM, 2020), was prepared to summarize the well installation activities and submitted to the KDWM.

In accordance with the KDWM-approved *Groundwater Assessment Plan* (GWAP; Burns & McDonnell, 2021) to address the KDWM requirements of 401 Kentucky Administrative Regulation (KAR) Chapter 45 Special Waste Section 160 (KAR 45:160) at the Phase I Landfill (permitted as a Special Waste Landfill), six (6) new characterization monitoring wells (MW-10D, MW-105R [replaced abandoned MW-105], and MW-111 through MW-114) in December 2021 through January 2022 for the characterization of groundwater at locations indicated in **Figure 2**. A *Monitoring Well Construction Progress Report* (Burns & McDonnell, 2022a), included as Appendix B in the *2022 Annual Groundwater Monitoring and Corrective*

*Action Report* (Burns & McDonnell, 2023a), was prepared to summarize the well installation activities and submitted to the KDWM.

No new characterization monitoring wells were installed in 2023.

As-built monitoring well construction details and location of each characterization well are summarized on **Table 1** and illustrated on **Figure 2**, respectively. The characterization monitoring wells, located at cross-gradient and downgradient positions east, southeast, south, southwest, and west of the Unit (away from the CCR waste boundary), assist in the characterization of the existence, quality, quantity, areal extent, and depth of groundwater degradation, and the rate and direction of migration of CCR contaminants in the groundwater. The data generated from the ongoing groundwater assessment under 401 KAR 45:160 (Phase I Special Waste Landfill) and 40 CFR §257.95 (Phase II CCR Landfill) are critical to the development of a comprehensive site conceptual model for groundwater, which is needed to evaluate the appropriate remedy for the Phase II Landfill groundwater impacts.



## 3.0 GROUNDWATER MONITORING ACTIVITIES AND RESULTS

### 3.1 Description of the Groundwater Monitoring Program

Results of baseline groundwater monitoring performed in 2016 and 2017 indicated that the Unit would require initiation of Assessment monitoring under the CCR Rule, as most of the Appendix III constituents, excluding fluoride and pH, have downgradient SSLs over background. On February 5, 2018, BREC posted a formal notification on their publicly accessible CCR reporting website that the Unit would transition from baseline/detection to an assessment monitoring program, fulfilling the requirement of 40 CFR §257.107(h)(4). On October 26, 2018, BREC posted a formal notification on their publicly accessible CCR reporting website that one or more constituent in Appendix IV had been detected at SSLs above the established GWPS as required by 40 CFR §257.107(h)(6). On January 14, 2019, BREC posted a formal notification on their publicly accessible CCR reporting website that the Wilson Phase II Landfill would initiate an ACM per 40 CFR §257.95(g)(5), fulfilling the requirement of 40 CFR §257.107(h)(7). In June 2019 BREC finalized the ACM in which applicable remedial technologies to address Appendix IV cobalt impacts in groundwater were identified pursuant to Title 40 CFR §257.96. The ACM (AECOM, 2019b) was posted to BREC's publicly accessible CCR reporting website on July 10, 2019. A public meeting has not been held to date to discuss the results of the ACM for the Wilson Phase II Landfill. BREC is working to establish a comprehensive list of data collection needs to proceed forward with remedy evaluation for this unit and anticipates providing additional data in future semi-annual remedy selection progress reports.

In 2023, the Unit was in assessment monitoring status. Two groundwater sampling events were conducted at the Unit in 2023, fulfilling the assessment monitoring and characterization sampling requirements of the CCR Rule. The following table summarizes the dates of the sampling events and the wells included in each event.

Event Type	Sampling Event	Dates	Monitoring Wells Sampled
Assessment	20	April 25-26, 2023	Background (Upgradient) MW8 Downgradient MW-5, MW-6, MW-7, and MW-10
Characterization	9	April 24-26, 2023	Characterization Wells MW-4D, MW-10D, MW-102, MW-104, MW-105R, MW-110, MW-111, MW-112, MW-113, and MW-114

Event Type	Sampling Event	Dates	Monitoring Wells Sampled
Assessment	21	October 2-3, 2023	Background (Upgradient) MW8 Downgradient MW-5, MW-6, MW-7, and MW-1
Characterization	10	October 2-3, 2023	Characterization Wells MW-4D, MW-10D, MW-102, MW-104, MW-105R, MW-110, MW-111, MW-112, MW-113, and MW-114

Following the October 2023 sampling event, a total of 21 assessment monitoring events and 10 characterization monitoring events have been performed at Wilson Phase II Landfill since 2016. These events were reported on in the *2016-2017 Annual Groundwater Monitoring and Corrective Action Report* (AECOM, 2018), the *2018 Annual Groundwater Monitoring and Corrective Action Report* (AECOM, 2019a), the *Assessment of Corrective Measures under the CCR Rule* (AECOM, 2019b), the *2019 Annual Groundwater Monitoring and Corrective Action Report* (AECOM, 2020), the *2020 Annual Groundwater Monitoring and Corrective Action Report* (AECOM, 2021), the *2021 Annual Groundwater Monitoring and Corrective Action Report* (AECOM, 2022), and the *2022 Annual Groundwater Monitoring and Corrective Action Report* (Burns & McDonnell, 2023a).

Monitoring wells were sampled following low-flow sampling techniques developed and incorporated into current operating permits, which are maintained within the operating record at the Wilson Station.

### 3.2 Groundwater Sampling Activities

In 2023, two assessment monitoring events and two characterization sampling events were conducted at the Unit as part of assessment monitoring and characterization sampling activities. The two characterization sampling events coincided with the semi-annual assessment monitoring program schedule under 40 CFR §257.95 (Phase II Landfill). These semi-annual groundwater sampling events were performed by BREC personnel on April 24-26, 2023, and October 2-3, 2023.

The depth to groundwater was gauged at each of the monitoring wells during the April 2023 and October 2023 sampling events using a decontaminated water level meter. The measured depth to groundwater level data and the calculated groundwater elevations during the 2023 monitoring events are summarized on **Table 2**.

Prior to groundwater sample collection, monitoring wells were purged using dedicated bladder pumps and low flow purging/sampling techniques. Monitoring wells were purged until stabilization criteria had been met in accordance with the procedures in the current operating permit. Once groundwater parameters were stabilized, the monitoring wells were sampled. No filtration of samples was conducted in the field or during laboratory procedures. Monitoring well sampling forms for each of the groundwater monitoring events are included

in **Appendix A**. Groundwater samples collected during the 2023 sampling events were submitted to Pace Analytical Services, LLC in Madisonville, Kentucky for laboratory analysis for Appendix III and Appendix IV parameters, in accordance with 40 CFR §257.95(b). Laboratory analyses were performed in accordance with USEPA-approved methods. Groundwater results for compliance and characterization monitoring wells are presented in Section 4.0 of this Report.

## 4.0 DATA EVALUATION

### 4.1 Groundwater Flow

The measured depth to groundwater level data and the calculated groundwater elevations during the 2023 monitoring events are summarized on **Table 2**. The calculated groundwater elevations during April and October 2023 were used to construct a piezometric surface map to illustrate groundwater flow conditions for the uppermost aquifer in **Figures 3** and **4**, respectively. These data are representative of general conditions at the Unit. Overall groundwater flow beneath the footprint of the Wilson Phase II Landfill is to the south and southeast. The predominant groundwater flow direction historically observed at the Unit is to the south-southeast. Groundwater flow beneath the Landfill is influenced by extensive historical coal strip-mining and the physical extent of mine spoil deposits. These mine spoil deposits are laterally limited by the remaining bedrock high walls left undisturbed south of the Unit along the north side of State Route 85 and beyond (west of) the western edge of the Wilson Phase II Landfill. Outside the footprint of the Unit, the groundwater flow beneath the Site includes a western component along the eastern portion of the Site, a localized southern component in the vicinity of bedrock Monitoring Wells MW-104 and MW-110 and localized northern components in the vicinity of bedrock Monitoring Wells MW-105R and MW-113.

### 4.2 Estimated Vertical Gradient

Reviewing comparisons of hydrologic data at paired/nested wells allows an evaluation of estimated vertical hydraulic gradients. The nested well clusters at the Site include two well pairs, Monitoring Wells MW-4/4D and MW-10/10D.

The estimated vertical groundwater gradient is calculated by the following equation:

$$\frac{\text{Water Elevation (shallow well)} - \text{Water Elevation (deep well)}}{\text{Screen Midpoint Elevation of Screen (shallow well)} - \text{Screen Midpoint Elevation of Screen (deep well)}}$$

\* A positive gradient identifies a downward gradient, while a negative gradient identifies an upward gradient.

The estimated vertical gradients ranged from -0.01276 upward (MW-4/4D; April 0223) to 0.00131 downward (MW-10/10D; September 2023). The estimated vertical gradients are summarized in **Table 3**.

### 4.3 Sampling Results

Two assessment monitoring and characterization sampling events were completed in April and October 2023. Results from these sampling events are summarized on the tables included in **Appendix B**. Copies of analytical laboratory reports are included in **Appendix C**. Laboratory data was validated and all data are considered viable for reporting as qualified. Copies of data validation reports are provided in **Appendix D**.

## 4.4 Statistical Evaluation

As part of previous assessment monitoring performed at the Unit, background and downgradient wells for the Phase II Landfill were sampled for Appendix IV constituents from 2018 through 2022. In accordance with 40 CFR §257.95, GWPSs were established for detected Appendix IV constituents. The previous 2022 assessment monitoring results indicate the presence of Appendix IV constituents at SSLs above their respective GWPSs in the following monitoring wells:

- Cobalt: MW-10
- Lithium: MW-6

In accordance with 40 CFR §257.93(f), 40 CFR §257.93(h), and 40 CFR §257.95(d)(2), statistical evaluation of the 2023 assessment groundwater data collected to date was conducted as part of developing this statistical evaluation. The evaluation was conducted to identify any 2023 SSIs over background concentrations for the Appendix III and Appendix IV parameters and any 2023 SSLs over established GWPSs for detected Appendix IV parameters. A summary of the 2023 statistical evaluation conducted on Appendix III and Assessment Appendix IV parameters is provided as **Appendix E**.

Statistical methods were chosen in accordance with 40 CFR §257.93(f) and the rationale behind why each method was selected is outlined in the *Update to Certification of Statistical Method for Evaluation Groundwater* document (Burns & McDonnell, 2022b) dated May 25, 2022. Appendix III groundwater quality data were evaluated using an inter-well approach that statistically compared constituent concentrations at downgradient monitoring wells to those present at a background monitoring well. For the Unit, Monitoring Well MW-8 is designated as the background well because it is located hydraulically upgradient of the Unit, whereas Monitoring Wells MW-5, MW-6, MW-7, and MW-10 are designated as downgradient compliance wells because they are located hydraulically downgradient of the Unit and near the CCR waste boundary.

As presented in **Appendix E**, the following Appendix III constituents were observed as SSIs with concentrations above calculated background values in downgradient compliance monitoring wells.

2023 SSIs for Appendix II Detection Monitoring Parameters	
April 2023 Sampling Event	October 2023 Sampling Event
Boron (MW-5, MW-6, MW-7, and MW-10)	Boron (MW-5, MW-6, MW-7, and MW-10)
Calcium (MW-5, MW-6, MW-7, and MW-10)	Calcium (MW-5, MW-6, and MW-10)
Chloride (MW-5, MW-6, MW-7, and MW-10)	Chloride (MW-5, MW-6, MW-7, and MW-10)
Sulfate (MW-5 and MW-7)	Sulfate (MW-6 and MW-10)
Total Dissolved Solids (TDS) (MW-5, MW-6, MW-7, and MW-10)	TDS (MW-5, MW-6, MW-7, and MW-10)

The previously identified Appendix III constituent SSIs for pH (field) at MW-6 and MW-10 (noted for the first time in 2021) were not verified in 2022 and 2023. Fluoride did not have an SSI over background (consistent with historical). Based on the Appendix III SSIs, assessment monitoring is required to continue at the Unit on a semi-annual basis.

As presented in **Appendix E**, the following Appendix IV constituents were observed as SSIs with concentrations above calculated background values in downgradient compliance monitoring wells.

2023 SSIs for Appendix IV Assessment Monitoring Parameters	
April 2023 Sampling Event	October 2023 Sampling Event
Cobalt (MW-10)	Cobalt (MW-10)
Lithium (MW-5 and MW-6)	Lithium (MW-5, MW-6, and MW-7)

The Appendix IV constituents with SSIs were further evaluated to determine whether they are present at SSLs over the GWPS by calculating the lower confidence limit (LCL) at 95% confidence for each well and constituent using all the baseline, detection, and assessment monitoring results collected to date. For a constituent to be present at an SSL over the GWPS, its LCL must be greater than the GWPS. As presented in **Appendix E**, the following Appendix IV constituents were observed at SSLs over the GWPS.

2023 SSLs Above GWPSs for Appendix IV Assessment Monitoring Parameters	
April 2023 Sampling Event	October 2023 Sampling Event
Cobalt (MW-10)	Cobalt (MW-10)
Lithium (MW-6)	Lithium (MW-6)

The LCLs for the remaining wells and Appendix IV constituents are less than the GWPS and thus are not considered SSLs.

## 4.5 Conclusion

Based upon the statistical evaluation of Appendix III and Appendix IV parameters collected during assessment monitoring at the Wilson Phase II Landfill, BREC will continue assessment monitoring in 2024.

## 5.0 Certifications and Notifications to the Facility Operating Record

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The following certifications and notifications were made to the operating record and/or were posted to BREC's publicly accessible CCR website during the 2023 reporting period:

- *2022 Annual Groundwater Monitoring and Corrective Action Report* (Burns & McDonnell, 2023a)
- *Statistical Evaluation of April 2023 Assessment Monitoring Groundwater Data* (Burns & McDonnell, 2023c; **Appendix E**)
- *1<sup>st</sup> Half 2023 Remedy Selection Progress Report* (Burns & McDonnell, 2023d).
- *Statistical Evaluation of October 2023 Assessment Monitoring Groundwater Data* (Burns & McDonnell, 2023e; **Appendix E**)
- *2<sup>nd</sup> Half 2023 Remedy Selection Progress Report* (Burns & McDonnell, 2023f).

## 6.0 Key Activities Planned for 2024

Anticipated activities for the next 2024 annual reporting period include groundwater monitoring and progress towards selection of a remedy for the Unit.

### 6.1 Groundwater Monitoring

Continued semi-annual assessment monitoring of all CCR Rule program compliance and characterization monitoring wells for the Unit is planned for 2024.

### 6.2 Remedy Selection

As required by 40 CFR §257.97, BREC is in the process of selecting a remedy for groundwater impacts at the Unit. Currently BREC considers four (4) potential corrective action alternatives reported in the ACM as viable options to address groundwater impacts at the Unit That include:

- Alternative #2a: Closure in Place (CiP), Institutional Controls (ICs), Other Source Control, and Groundwater Monitoring
- Alternative #3: CiP, ICs, Hydraulic Containment, Other Source Control (consisting of seepage collection and treatment), Ex-Situ Treatment, and Groundwater Monitoring
- Alternative #4: CiP, ICs, Other Source Control, Physical Containment, Permeable Reactive Barrier, and Groundwater Monitoring
- Alternative #5: CiP, ICs, Other Source Control, In-Situ Treatment, and Groundwater Monitoring

To evaluate each corrective action alternative, additional data collection is required. BREC is currently evaluating data collection needs in the following areas to assist with remedy selection:

1. Nature and extent of impact – groundwater trends, influence of non-groundwater remedies, etc.
2. Physical characteristics – available data on the physical characteristics of the Phase II Landfill and the groundwater environment
3. Performance modeling – data needed to develop digital models demonstrating the effectiveness of potential alternatives.
4. Engineering – feasibility, cost estimates, etc.

BREC is working to establish a comprehensive list of data collection needs to proceed forward with remedy evaluation and anticipates providing additional data in future semi-annual remedy selection progress reports.

Additionally, feedback from the KDWM of the *Groundwater Assessment Report* (Burns & McDonnell, 2023b) addressing the KDWM requirements at the Wilson Landfill under a separate state regulatory program (401 KAR 45:160), will also be used to support filling data gaps and progressing towards selection of a remedy for the Unit. The data generated from the ongoing groundwater assessment under 401 KAR 45:160 (Phase I Special Waste Landfill)



and 40 CFR §257.95 (Phase II CCR Landfill) are critical to the development of a comprehensive site conceptual model for groundwater, which is needed to evaluate the appropriate remedy for the Phase II CCR Landfill groundwater impacts.

The 2024 groundwater monitoring program will continue to assist in evaluating the success of the non-groundwater release remedies currently implemented at the Unit/Site and will further provide relevant and important information to be considered in supporting the evaluation of the final groundwater remedy selection.

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- USEPA, 2020b. *Final Rule - A Holistic Approach to Closure Part B: Alternate Liner Demonstration*. 40 CFR Part 257, Federal Register, Vol. 85, No. 219 December 14. Federal Register: Hazardous and Solid Waste Management System: Disposal of CCR; A Holistic Approach to Closure Part B: Alternate Demonstration for Unlined Surface Impoundments.

## TABLES

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**Table 1**  
**Summary of Monitoring Well System Construction Details**  
**Phase II CCR Landfill**

Big Rivers Electric Corporation - Wilson Station  
 Ohio County, Kentucky

Well No.	Location*		Reference Elevation* TOIC (feet, NAD27)	GS (feet, NAD27)	Casing Length (feet, TOIC)	Size / Type (ID / Material)	Filter Pack Interval (feet, NAVD88)		Screened Interval (feet, NAVD88)		Bottom of Boring (feet, GS)	Screened Formation
	Lat	Long					Top	Bottom	Top	Bottom		
<b>Phase II CCR Landfill Permitted Monitoring Wells</b>												
MW-5 (8005-3477)	D	37,4638	-87.0910	469.14	467.42	75.0	2 inch / PVC	404.92	391.42	402.92	392.92	Mine Spoils
MW-6 (8005-3476)	D	37,4614	-87.0910	433.06	431.12	53.5	2 inch / PVC	390.42	377.12	388.12	378.12	Mine Spoils
MW-7 (8005-3479)	D	37,4584	-87.0913	426.14	424.08	50.0	2 inch / PVC	386.58	373.18	384.58	374.58	Mine Spoils
MW-8 (8005-3475)	U/B	37,4682	-87.0883	471.60	470.01	63.5	2 inch / PVC	419.53	405.96	417.05	407.05	Mine Spoils
MW-10 (8005-3478)	D	37,4544	-87.0902	398.91	396.91	22.4	2 inch / PVC	387.16	373.83	384.99	374.99	Mine Spoils
<b>Characterization Wells (Screening Use Only)</b>												
MW-4D (8007-4811)	D/C	37,4542	-87.0851	410.02	407.03	96.4	2 inch / PVC	326.03	313.03	324.03	314.03	Mine Spoils
MW-102 (8007-2995)	D/C	37,4613	-87.0757	399.71	396.46	39.3	2 inch / PVC	372.46	360.46	370.46	360.46	Unconsolidated
MW-104 (8007-2994)	D/C	37,4517	-87.0826	392.87	389.76	43.4	2 inch / PVC	361.76	349.26	359.76	349.76	Sandstone
MW-105 (8007-2992)**	D/C	37,4516	-87.0973	396.74	393.56	63.3	2 inch / PVC	366.56	333.56	343.56	333.56	Sandstone
MW-105R (8007-1175)	U/C	37,4516	-87.0972	397.13	394.11	38.7	2 inch / PVC	371.11	357.94	368.67	358.67	Sandstone
MW-110 (8007-2996)	D/C	37,4521	-87.0907	393.54	390.56	42.8	2 inch / PVC	362.56	350.56	360.56	350.56	Sandstone
MW-111 (8007-8615)	D/C	37,4593	-87.0982	466.06	463.58	98.5	2 inch / PVC	379.81	367.08	377.81	367.81	Mine Spoils
MW-112 (8007-8614)	D/C	37,4559	-87.0990	403.82	401.15	54.7	2 inch / PVC	361.38	348.65	359.38	349.38	Mine Spoils
MW-113 (8007-1174)	U/C	37,4514	-87.0862	411.61	408.66	58.0	2 inch / PVC	365.89	349.99	363.89	353.89	Sandstone
MW-114 (8007-8613)	U/C	37,4510	-87.0760	404.18	401.46	50.7	2 inch / PVC	365.69	351.46	363.69	353.69	Sandstone
MW-10D (8007-8616)	D/C	37,4548	-87.0899	399.00	396.27	77.7	2 inch / PVC	333.50	320.77	331.50	321.50	Mine Spoils
<b>Phase I Speical Waste Landfill Monitoring Wells (Water Levels Only)</b>												
MW-1 (8002-9621)	U	37,4667	-87.0852	443.89	442.31	36.3	4 inch / PVC	419.6	407.6	417.6	407.6	Mine Spoils
MW-2 (8002-9622)	D	37,4618	-87.0820	417.11	414.60	36.0	4 inch / PVC	393.3	381.1	391.1	381.1	Mine Spoils
MW-3 (8002-9623)	D	37,4576	-87.0845	411.12	408.19	36.2	4 inch / PVC	387.2	374.9	384.9	374.9	Mine Spoils
MW-4 (8002-9624)	D	37,4546	-87.0850	408.82	406.55	31.3	4 inch / PVC	389.6	377.5	387.5	377.5	Mine Spoils
<b>Water Levels Only</b>												
P-9 (8005-3480)	water level only	37,4622	-87.0867	432.37	429.19	38.7	2 inch / PVC	402.99	389.99	400.99	390.99	CCR
P-11 (8005-3472)	water level only	37,4593	-87.0872	446.55	444.03	68.6	2 inch / PVC	388.43	374.90	385.93	375.93	CCR

**Notes:**  
 \*Reference elevation of monitoring wells surveyed by Associated Engineers, Inc., Madisonville, Kentucky June 2015, November 2018, and January 2022.  
 \*\*Survey coordinates were based on the Kentucky State Plane, Kentucky Southern Zone, NAD27 datum  
 \*\* MW-105 abandoned and replaced by MW-105R

C = Characterization  
 CCR = Coal combustion residuals  
 D = Downgradient  
 GS = Ground surface, or measured from (below) GS  
 ID = Internal diameter  
 Lat. / Long. = latitude and longitude  
 NAD27 = North American Datum of 1927 in feet  
 NAVD88= North American Datum of 1988 in feet above mean sea level (amsl)  
 PVC = Polyvinyl chloride  
 TOIC = Top of internal casing, or measured from (below) TOIC  
 U / B = Upgradient / Background

TABLE 2

MONITORING WELL NETWORK GROUNDWATER ELEVATIONS  
 WILSON PHASE II CCR LANDFILL  
 BIG RIVERS ELECTRIC CORPORATION - WILSON STATION  
 OHIO COUNTY, KENTUCKY

WILSON PHASE II CCR LANDFILL														
OPERATING PERMIT GROUNDWATER COMPLIANCE MONITORING WELLS														
MW-5			MW-6			MW-7			MW-8			MW-10		
Downgradient			Downgradient			Downgradient			Upgradient/Background			Downgradient		
469.14			433.06			426.14			471.60			398.91		
Reference Elevation TOIC*(ft, NAVD88)	Depth to Water (ft)	GW Elevation (feet)	Depth to Water (ft)	GW Elevation (feet)	Depth to Water (ft)	GW Elevation (feet)	Depth to Water (ft)	GW Elevation (feet)	Depth to Water (ft)	GW Elevation (feet)	Depth to Water (ft)	GW Elevation (feet)	Depth to Water (ft)	GW Elevation (feet)
Date Measured														
4/24/2023	55.75	413.39	40.66	392.40	40.49	385.65	44.07	427.53	14.10	384.81				
9/29/2023	56.82	412.32	42.66	390.40	40.88	385.26	44.83	426.77	13.91	385.00				

CHARACTERIZATION GROUNDWATER MONITORING WELLS												
MW-10D			MW-102			MW-104			MW-105R			
Characterization			Characterization			Characterization			Characterization			
399.00			399.71			392.87			397.13			
Reference Elevation TOIC*(ft, NAVD88)	Depth to Water (ft)	GW Elevation (feet)	Depth to Water (ft)	GW Elevation (feet)	Depth to Water (ft)	GW Elevation (feet)	Depth to Water (ft)	GW Elevation (feet)	Depth to Water (ft)	GW Elevation (feet)	Depth to Water (ft)	GW Elevation (feet)
Date Measured												
4/24/2023	13.90	385.10	24.55	385.47	11.45	388.26	7.25	385.62	8.14	388.99		
9/29/2023	14.07	384.93	24.61	385.41	12.77	386.94	7.62	385.25	8.09	389.04		

CHARACTERIZATION GROUNDWATER MONITORING WELLS												
MW-110			MW-112			MW-113			MW-114			
Characterization			Characterization			Characterization			Characterization			
393.54			403.82			411.61			404.18			
Reference Elevation TOIC*(ft, NAVD88)	Depth to Water (ft)	GW Elevation (feet)	Depth to Water (ft)	GW Elevation (feet)	Depth to Water (ft)	GW Elevation (feet)	Depth to Water (ft)	GW Elevation (feet)	Depth to Water (ft)	GW Elevation (feet)	Depth to Water (ft)	GW Elevation (feet)
Date Measured												
4/24/2023	9.15	384.39	80.82	385.24	18.53	385.29	22.30	389.31	12.6	391.58		
9/29/2023	9.88	383.66	81.20	384.86	18.88	384.94	21.93	389.68	14.11	390.07		

TABLE 2 (continued)

**MONITORING WELL NETWORK GROUNDWATER ELEVATIONS  
WILSON PHASE II CCR LANDFILL  
BIG RIVERS ELECTRIC CORPORATION - WILSON STATION  
OHIO COUNTY, KENTUCKY**

Reference Elevation TOIC* (ft, NAVD88)	SUPPLEMENTAL WATER LEVEL ONLY MONITORING POINTS								PIEZOMETERS			
	MW-1		MW-2		MW-3		MW-4		North (P9)		South (P11)	
	Water Level Only	Depth to Water (ft)	Water Level Only	Depth to Water (ft)	Water Level Only	Depth to Water (ft)	Water Level Only	Depth to Water (ft)	Water Level Only	Depth to Water (ft)	Water Level Only	Depth to Water (ft)
	443.89		417.11		411.12		408.82		432.37		446.55	
		GW Elevation (feet)		GW Elevation (feet)		GW Elevation (feet)		GW Elevation (feet)		GW Elevation (feet)		GW Elevation (feet)
		18.45		18.28		25.36		23.58		23.94		60.34
		19.37		18.53		25.76		24.22		22.86		61.77
		425.44		398.83		385.76		385.24		408.43		386.21
		424.52		398.58		385.36		384.60		409.51		384.78

1. Reference elevation of monitoring wells MW-1 through MW-8, MW-10, MW-10D, MW-4D, MW-102, MW-110, and piezometers P9 and P11 surveyed by Associated Engineers, Inc., Madisonville, Kentucky, June 2015.
2. Reference elevation of monitoring wells MW-10D, 105R, and MW-111 through MW-114 surveyed by Associated Engineers, Inc., Madisonville, Kentucky, January 12, 2022.
3. Survey coordinates were based on the Kentucky State Plane, Kentucky Southern Zone, NAD27 datum

ft = feet; GW = Groundwater; GS = Ground surface; NAVD88 = North America Vertical Datum of 1988 in feet above mean sea level (amsl); TOIC = Top of internal casing, or measured from (below) TOIC

**Table 3**  
**Estimated Vertical Hydraulic Gradients**  
**Wilson Phase II CCR Landfill**  
 Big Rivers Electric Corporation - Wilson Station  
 Ohio County, Kentucky

Well Cluster	Top of Casing Elev. (ft, NAVD88)	Total Well Depth (ft, TOIC)	Well Screen Elevation			Screened Geologic Formation	DTW (ft, TOIC)	Water Elevation (ft, NAVD88)	Water Elevation Difference (ft)	Vertical Gradient (feet/foot)
			Top (ft, NAVD88)	Midpoint (ft, NAVD88)	Bottom (ft, NAVD88)					
<b>24-Apr-23</b>										
MW-4	408.82	31.30	387.50	382.50	377.50	Mine spoils	23.58	385.24	0.23	-0.00362
MW-4D	410.02	96.40	324.03	319.03	314.03	Mine spoils	24.55	385.47		
MW-10	398.91	22.4	384.99	379.99	374.99	Mine spoils	14.10	384.81	0.29	-0.00542
MW-10D	399.00	76.95	331.50	326.50	321.50	Mine spoils	13.90	385.10		
<b>29-Sep-23</b>										
MW-4	408.82	31.30	387.50	382.50	377.50	Mine spoils	24.22	384.60	0.81	-0.01276
MW-4D	410.02	96.40	324.03	319.03	314.03	Mine spoils	24.61	385.41		
MW-10	398.91	22.4	384.99	379.99	374.99	Mine spoils	13.91	385.00	0.07	0.00131
MW-10D	399.00	76.95	331.50	326.50	321.50	Mine spoils	14.07	384.93		Downward

Vertical Gradient (ft/ft) =  $\frac{\text{Groundwater Elevation of (Shallow Well)} - \text{Groundwater Elevation of (Deep Well)}}{\text{(Screen Midpoint Elevation (Shallow Well))} - \text{Screen Midpoint Elevation (Deep Well)}}$

DTW = depth to water  
 ft - feet

NAVD88= North American Datum of 1988 in feet above mean sea level (amsl)

TOIC = Top of internal casing, or measured from (below) TOIC

**Notes:**

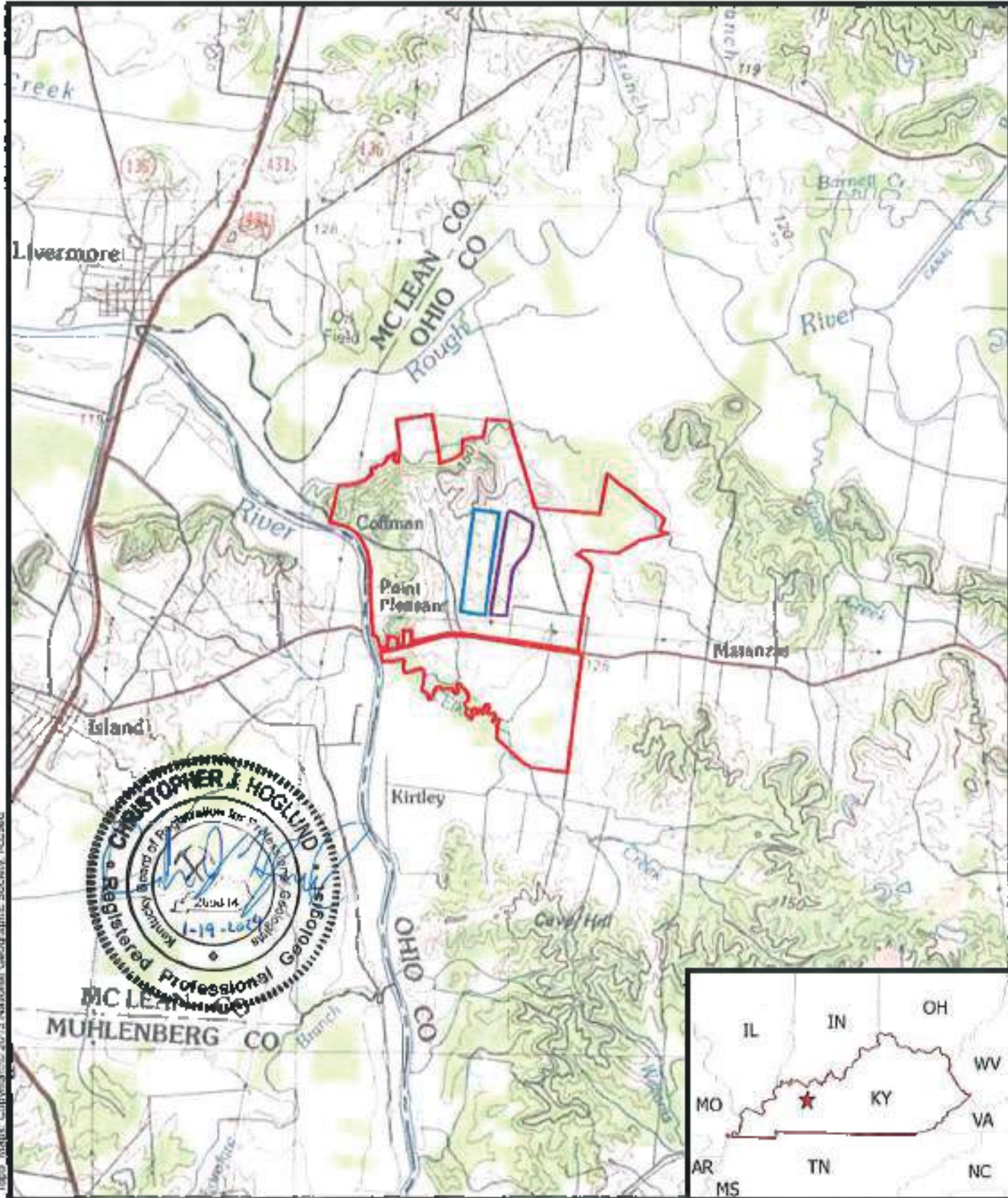
1. Positive vertical gradient value identifies a downward gradient, while a negative value identifies an upward gradient.






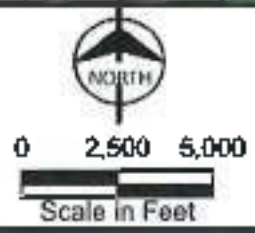
## FIGURES

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Path: \\burns\shared\com\16\GIS\Bios\Bios\145603\_Wilson\GIS\AP\1\Studies\Geospatial\Datas\ArcDocs\BREC\CIBREC.aprx OR Parab #10/2/2022  
Service Layer Credits: USA, Topo Maps: Copyright © 2013 National Geographic Society. Licensed



-  WILSON PHASE I LANDFILL
-  WILSON PHASE II LANDFILL
-  PROPERTY BOUNDARY

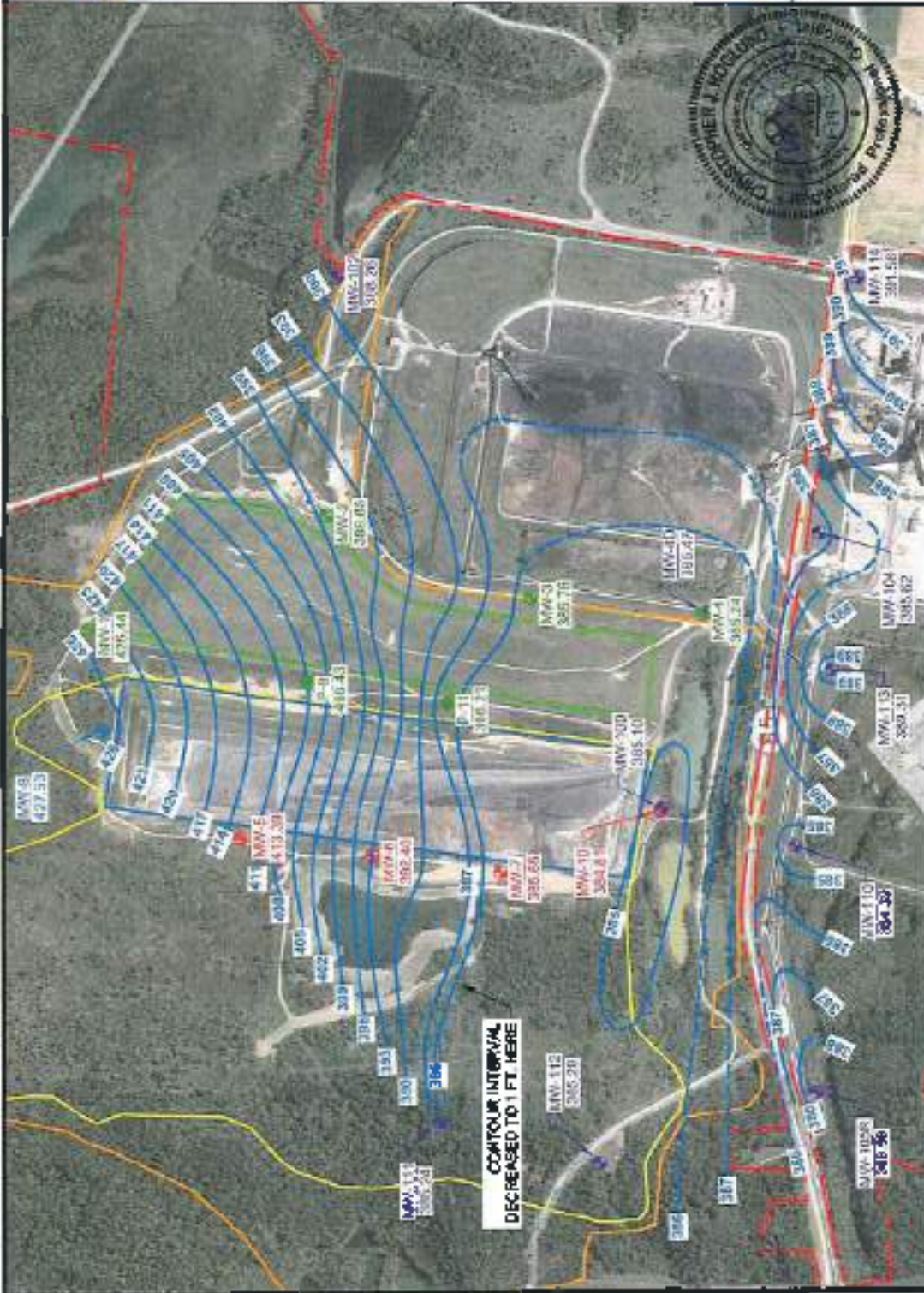


**FIGURE 1**  
**SITE LOCATION MAP**  
**WILSON STATION**  
**OHIO COUNTY, KENTUCKY**









**LEGEND**

PROPERTY BOUNDARY  
 OOR PHASE 2 FILL  
 BOND INCREMENT  
 KAR PERMIT AREA  
 PHASE I LANDFILL

PHASE II OOR LANDFILL  
 PERMITTED MONITORING  
 WELLS

UPGRADIENT MONITORING  
 WELL

DOWNGRADIENT MONITORING  
 WELL

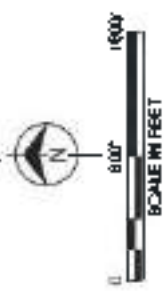
CHARACTERIZATION  
 MONITORING WELLS

CHARACTERIZATION  
 MONITORING WELL

MONITORING WELL  
 (WATER LEVEL ONLY)

PIEZOMETER  
 (WATER LEVEL ONLY)

GROUNDWATER ELEVATION  
 CONTOUR (DASHED WHERE  
 INFERRIED)



**FIGURE 8**  
 GROUNDWATER CONTOUR MAP  
 BREX, WILSON STATION  
 OHIO COUNTY, KENTUCKY



- NOTES:**
1. GROUNDWATER ELEVATIONS MEASURED ON APRIL 24, 2023.
  2. GROUNDWATER ELEVATIONS FROM SHALLOWER MONITORING WELLS USED AT NESTED WELL LOCATIONS (MW-40 AND MW-10D NOT USED IN CONTOURING).
  3. MONITORING WELLS SOUTH OF THE I-85 CORRIDOR ARE SCREENED WITHIN BEDROCK UNITS AND ARE CONTOURED AS A SEPARATE HYDROSTRATIGRAPHIC UNIT FROM WELLS SCREENED IN MINE TAILINGS (NORTH OF I-85).





## APPENDIX A - FIELD SAMPLING FORMS

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Auto Calc  
 pH = 4.01  
 MS 4.58  
 NTU = 0.10  
 DC = 10.17

201 Third Street  
 P.O. Box 24  
 Henderson, KY 42419-0024  
 270-827-2561  
 www.bigrivers.com

CCR GROUNDWATER FIELD LOG

WILSON LANDFILL

Site Name: <b>Wilson LF</b>	Well No. <b>MW-4D</b>	Total Depth (ft.) <b>93.5</b>	Initial Depth to Water (ft.) <b>24.55</b>	Height of Water Column (ft.) <b>68.95</b>	Date: <b>11/26/23</b>	Time: <b>10:10</b>				
Site Location: <b>Ohio Co, KY</b>	AKGWA# <b>8007-4811</b>	Casing Diameter <input type="checkbox"/> 4" <input checked="" type="checkbox"/> 2" Conversion fact. 4"-0.67 2"-0.16	Measuring Point (ft.) <b>410.02</b>	Groundwater Elevation (ft.) <b>385.47</b>	Well Vol. (Gal.) <b>11.03</b>	PO #				
<input type="checkbox"/> Rain <input type="checkbox"/> Sleet/Freezing Rain <input type="checkbox"/> Snow <input type="checkbox"/> Fog <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Partly Cloudy <input type="checkbox"/> Windy					Temp. <b>42</b> (F°)					
Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
0910	0	24.55	200	0	16.02	4.27	1.540	6.67	126	0.0
0915	5	24.55	200	1	16.72	4.77	1.15	6.53	33	0.0
0920	10	24.55	200	2	16.76	4.81	0.96	6.37	6	0.0
0925	15	24.55	200	3	16.81	4.62	0.76	6.52	-7	0.0
0930	20	24.55	200	4	16.85	4.49	0.69	6.49	-11	76.3
0935	25	24.55	200	5	16.91	4.48	1.32	6.48	-5	257
0940	30	24.55	200	6	17.00	4.20	1.02	6.49	-7	160
0945	35	24.55	200	7	17.03	4.52	0.69	6.49	-16	126
0950	40	24.55	200	8	17.04	4.54	0.68	6.33	-17	88.8
0955	45	24.55	200	9	17.10	4.55	0.61	6.49	-17	80.1
For three (3) consecutive Readings			Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable
Well Condition	Pad Condition	Lock Functioning	Bladder Pump	Casing SS <input type="checkbox"/> Casing PVC <input checked="" type="checkbox"/>	<input type="checkbox"/> Field Blank Collected Time:	<input type="checkbox"/> Duplicated Collected Time:				
Good	Good	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Filtered: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Split Sample <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Semi-Annual <input checked="" type="checkbox"/>				
Sample Time	Depth to Water	Color	Odor	Temp. (C°)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity (NTU)	
10:10	24.55	clear	None	17.16	4.56	0.54	6.46	-21	64.8	





## Groundwater Field Log

## Wilson Landfill

Site Name: <b>Wilson LF</b>	Well No. <b>MW-5</b>	Total Depth (ft.) <b>75.0</b>	Initial Depth to Water (ft.) <i>55.75</i>	Height of Water Column (ft.) <i>19.25</i>	Date: <i>4/25/23</i>	Time: <i>1120</i>				
Site Location: <b>Ohio Co, KY</b>	AKGWA# <b>8005-3477</b>	Casing Diameter <input type="checkbox"/> 4" <input checked="" type="checkbox"/> 2" Conversion fact. 4"-0.67 2"-0.16	Measuring Point (ft.) <b>469.14</b>	Groundwater Elevation (ft.) <i>413.39</i>	Well Vol. (Gal.) <i>3.03</i>	PO #				
<input type="checkbox"/> Rain <input type="checkbox"/> Sleet/Freezing Rain <input type="checkbox"/> Snow <input type="checkbox"/> Fog <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Partly Cloudy <input type="checkbox"/> Windy Temp. <i>53</i> (°F)										
Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
<i>1020</i>	<i>0</i>	<i>55.75</i>	<i>200</i>	<i>0</i>	<i>17.26</i>	<i>4.25</i>	<i>5.11</i>	<i>6.51</i>	<i>76</i>	<i>941</i>
<i>1025</i>	<i>5</i>	<i>55.85</i>	<i>200</i>	<i>1</i>	<i>17.11</i>	<i>4.24</i>	<i>1.67</i>	<i>6.48</i>	<i>65</i>	<i>580</i>
<i>1030</i>	<i>10</i>	<i>55.85</i>	<i>200</i>	<i>2</i>	<i>17.13</i>	<i>4.21</i>	<i>1.35</i>	<i>6.49</i>	<i>62</i>	<i>323</i>
<i>1035</i>	<i>15</i>	<i>55.85</i>	<i>200</i>	<i>3</i>	<i>17.16</i>	<i>4.20</i>	<i>1.16</i>	<i>6.49</i>	<i>59</i>	<i>218</i>
<i>1040</i>	<i>20</i>	<i>55.85</i>	<i>200</i>	<i>4</i>	<i>17.12</i>	<i>4.20</i>	<i>0.93</i>	<i>6.49</i>	<i>57</i>	<i>153</i>
<i>1045</i>	<i>25</i>	<i>55.85</i>	<i>200</i>	<i>5</i>	<i>17.07</i>	<i>4.20</i>	<i>0.93</i>	<i>6.48</i>	<i>55</i>	<i>109</i>
<i>1050</i>	<i>30</i>	<i>55.85</i>	<i>200</i>	<i>6</i>	<i>17.20</i>	<i>4.19</i>	<i>0.76</i>	<i>6.51</i>	<i>55</i>	<i>78.6</i>
<i>1055</i>	<i>35</i>	<i>55.85</i>	<i>200</i>	<i>7</i>	<i>17.22</i>	<i>4.20</i>	<i>0.79</i>	<i>6.49</i>	<i>53</i>	<i>64.1</i>
<i>1100</i>	<i>40</i>	<i>55.85</i>	<i>200</i>	<i>8</i>	<i>17.19</i>	<i>4.20</i>	<i>0.66</i>	<i>6.47</i>	<i>52</i>	<i>46.0</i>
<i>1105</i>	<i>45</i>	<i>55.85</i>	<i>200</i>	<i>9</i>	<i>17.25</i>	<i>4.19</i>	<i>0.61</i>	<i>6.47</i>	<i>51</i>	<i>39.7</i>
For three (3) consecutive Readings			Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10mV	+/- 10% unless <5 NTU consider stable
Well Condition <i>Good</i>	Pad Condition <i>Good</i>	Lock Functioning <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Bladder Pump <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Casing SS <input type="checkbox"/> Casing PVC <input checked="" type="checkbox"/>	<input type="checkbox"/> Field Blank Collected Time:	<input type="checkbox"/> Duplicated Collected Time:	Filtered: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Split Sample <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No With:	Semi-Annual <input checked="" type="checkbox"/>	
Sample Time	Depth to Water	Color	Odor	Temp. (C°)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity (NTU)	
<i>1120</i>	<i>55.85</i>	<i>Clear</i>	<i>None</i>	<i>17.28</i>	<i>4.19</i>	<i>0.53</i>	<i>6.47</i>	<i>49</i>	<i>33.0</i>	



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# Groundwater Field Log

# Wilson Landfill

Site Name: <b>Wilson LF</b>	Well No. <b>MW-5</b>	Total Depth (ft.) <b>75.0</b>	Initial Depth to Water (ft.)	Height of Water Column (ft.)	Date:	Time:				
Site Location: <b>Ohio Co, KY</b>	AKGWA# <b>8005-3477</b>	Casing Diameter <input type="checkbox"/> 4" <input type="checkbox"/> 2" Conversion fact. 4"-0.67    2"-0.16	Measuring Point (ft.) <b>469.14</b>	Groundwater Elevation (ft.)	Well Vol. (Gal.)	PO #				
<input type="checkbox"/> Rain <input type="checkbox"/> Sleet/Freezing Rain <input type="checkbox"/> Snow <input type="checkbox"/> Fog <input type="checkbox"/> Clear <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Windy    Temp: _____ (F)										
Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
11:10	50	55.85	200	10	17.25	4.19	0.57	6.47	50	33.9
11:15	55	55.85	210	11	17.25	4.20	0.58	6.47	50	33.1
11:20	60	55.85	200	12	17.28	4.19	0.53	6.47	49	33.0
For three (3) consecutive Readings		Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable	
Well Condition	Pad Condition	Lock Functioning	Bladder Pump	Casing SS <input type="checkbox"/>	<input type="checkbox"/> Field Blank Collected Time:		<input type="checkbox"/> Duplicated Collected Time:			
		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	Casing PVC <input type="checkbox"/>	Filtered: <input type="checkbox"/> Yes <input type="checkbox"/> No	Split Sample <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Semi-Annual			
Sample Time	Depth to Water	Color	Odor	Temp. (C°)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity NTU	



# Groundwater Field Log

# Wilson Landfill

Site Name: <b>Wilson LF</b>	Well No. <b>MW-6</b>	Total Depth (ft.) <b>53.50</b>	Initial Depth to Water (ft.) <b>40.66</b>	Height of Water Column (ft.) <b>12.84</b>	Date: <b>4.25.2023</b>	Time: <b>1:00 pm</b>				
Site Location: <b>Ohio Co, KY</b>	AKGWA# <b>8005-3476</b>	Casing Diameter <input type="checkbox"/> 4" <input checked="" type="checkbox"/> 2" Conversion fact. 4"-0.67 2"-0.16	Measuring Point (ft.) <b>433.06</b>	Groundwater Elevation (ft.) <b>392.4</b>	Well Vol. (Gal.) <b>2.05</b>	PO #				
<input type="checkbox"/> Rain <input type="checkbox"/> Sleet/Freezing Rain <input type="checkbox"/> Snow <input type="checkbox"/> Fog <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Partly Cloudy <input type="checkbox"/> Windy Temp. <b>59</b> (F)										
Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
12:00p	0	40.66	100	0	18.88	3.12	.61	6.37	12	845
12:05	5	40.66	100	.5	18.32	3.12	.64	6.37	10	558
12:10	10	40.68	100	1	18.23	3.12	.66	6.38	10	457
12:15	15	40.68	100	1.5	18.23	3.11	.63	6.41	10	301
12:20	20	40.68	100	2.0	18.03	3.12	.63	6.40	9	259
12:25	25	40.68	100	2.5	18.10	3.11	.55	6.43	8	210
12:30	30	40.68	100	3.0	17.75	3.10	.54	6.43	7	159
12:35	35	40.68	100	3.5	17.68	3.10	.49	6.42	7	165
12:40	40	40.69	100	4.0	17.61	3.10	.54	6.43	6	147
12:45	45	40.69	100	4.5	17.43	3.11	.48	6.44	6	134
For three (3) consecutive Readings			Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10mV	+/- 10% unless <5 NTU consider stable
Well Condition	Pad Condition	Lock Functioning	Bladder Pump	Casing SS <input type="checkbox"/>	<input type="checkbox"/> Field Blank Collected Time:		<input checked="" type="checkbox"/> Duplicated Collected Time: 2:30pm			
good	good	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Casing PVC <input checked="" type="checkbox"/>	Filtered: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Split Sample <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No With:		<input checked="" type="checkbox"/> Semi-Annual		
Sample Time	Depth to Water	Color	Odor	Temp. (°C)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity NTU	
1:00pm	40.69	clear	none	17.65	3.11	.49	6.45	6	89.9	

# Groundwater Field Log

# Wilson Landfill

Site Name: <b>Wilson LF</b>	Well No. <b>MW-6</b>	Total Depth (ft.) <b>53.50</b>	Initial Depth to Water (ft.) <b>40.66</b>	Height of Water Column (ft.) <b>12.84</b>	Date: <b>4-25-2023</b>	Time: <b>1:00 pm</b>				
Site Location: <b>Ohio Co, KY</b>	AKGWA# <b>8005-3476</b>	Casing Diameter <input type="checkbox"/> 4" <input type="checkbox"/> 2" Conversion fact. 4"-0.67 2"-0.16	Measuring Point (ft.) <b>433.06</b>	Groundwater Elevation (ft.) <b>392.4</b>	Well Vol. (Gal.) <b>2.05</b>	PO #				
<input type="checkbox"/> Rain <input type="checkbox"/> Sleet/Freezing Rain <input type="checkbox"/> Snow <input type="checkbox"/> Fog <input type="checkbox"/> Clear <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Windy Temp. <b>59</b> (F°)										
Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
12:50	50	40.69	100ml	5.0	17.66	3.11	.46	6.45	6	105
12:55	55	40.69	100ml	5.5	17.60	3.11	.46	6.45	6	95.7
1:00	60	40.69	100ml	6.0	17.65	3.11	.49	6.45	6	89.9
For three (3) consecutive Readings			Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- 10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable
Well Condition	Pad Condition	Lock Functioning	Bladder Pump	Casing SS <input type="checkbox"/>	Field Blank Collected Time:		Duplicated Collected Time: <b>2:30pm</b>			
good	good	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Casing PVC <input checked="" type="checkbox"/>	Filtered: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Split Sample <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Semi-Annual <input checked="" type="checkbox"/>			
Sample Time	Depth to Water	Color	Odor	Temp. (°C)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity NTU)	
1:00pm	40.69	clear	none	17.65	3.11	.49	6.45	6	89.9	



# Groundwater Field Log

# Wilson Landfill

Site Name: <b>Wilson LF</b>	Well No. <b>MW-7</b>	Total Depth (ft.) <b>50.00</b>	Initial Depth to Water (ft.) <b>40.49'</b>	Height of Water Column (ft.) <b>9.51'</b>	Date: <b>4-25-03</b>	Time: <b>1:52p</b>				
Site Location: <b>Ohio Co, KY</b>	AKGWA# <b>8005-3479</b>	Casing Diameter <input type="checkbox"/> 4" <input checked="" type="checkbox"/> 2" Conversion fact. 4"-0.67 2"-0.16	Measuring Point (ft.) <b>426.14</b>	Groundwater Elevation (ft.) <b>385.65'</b>	Well Vol. (Gal.) <b>1.528</b>	PO #				
<input type="checkbox"/> Rain <input type="checkbox"/> Sleet/Freezing Rain <input type="checkbox"/> Snow <input type="checkbox"/> Fog <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Partly Cloudy <input type="checkbox"/> Windy Temp. <b>63°</b> (F°)										
Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
12:57	0	40.5'	200	1.0	18.48	2.86	4.81	6.56	28	56.6
1:02	5	40.5'	200	2.0	17.47	2.82	2.35	6.63	3	36.1
1:07	10	40.5'	200	3.0	17.39	2.81	2.31	6.63	1	19.3
1:12	15	40.5'	200	4.0	17.42	2.81	1.83	6.61	0	13.4
1:17	20	40.5'	200	5.0	17.41	2.80	1.83	6.62	2	70.8
1:22	25	40.5'	200	6.0	17.49	2.79	1.70	6.60	2	56.7
1:27	30	40.5'	200	7.0	17.42	2.79	2.02	6.61	1	41.1
1:32	35	40.5'	200	8.0	17.52	2.78	1.59	6.61	2	29.9
1:37	40	40.5'	200	9.0	17.60	2.78	1.52	6.59	3	26.0
1:42	45	40.5'	200	10.0	17.62	2.78	1.40	6.59	3	22.8
For three (3) consecutive Readings			Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable
Well Condition <b>Good</b>	Pad Condition <b>Good</b>	Lock Functioning <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Bladder Pump <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Casing SS <input type="checkbox"/> Casing PVC <input checked="" type="checkbox"/>	Field Blank Collected Time: <b>2:22p</b>	Duplicated Collected Time:		Semi-Annual <input checked="" type="checkbox"/>		
				Filtered: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Split Sample <input type="checkbox"/> Yes <input type="checkbox"/> No With:					
Sample Time	Depth to Water	Color	Odor	Temp. (°C)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity NTU	
1:52p	40.5'	Clear	N	17.65	2.78	1.28	6.55	6	18.2	

1 of 2



# Groundwater Field Log

# Wilson Landfill

Site Name: <b>Wilson LF</b>	Well No. <b>MW-7</b>	Total Depth (ft.) <b>50.00</b>	Initial Depth to Water (ft.) <b>40.49'</b>	Height of Water Column (ft.) <b>9.51'</b>	Date: <b>4-25-23</b>	Time: <b>1:52p</b>				
Site Location: <b>Ohio Co, KY</b>	AKGWA# <b>8005-3479</b>	Casing Diameter <input type="checkbox"/> 4" <input checked="" type="checkbox"/> 2" Conversion fact. 4"-0.67 2"-0.16	Measuring Point (ft.) <b>426.14</b>	Groundwater Elevation (ft.) <b>385.65'</b>	Well Vol. (Gal.) <b>1.528</b>	PO #				
<input type="checkbox"/> Rain <input type="checkbox"/> Sleet/Freezing Rain <input type="checkbox"/> Snow <input type="checkbox"/> Fog <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Partly Cloudy <input type="checkbox"/> Windy Temp. <b>63°</b> (F)										
Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
1:47	50	40.5'	200	11.0	17.59	2.78	1.31	6.56	4	20.1
1:52	55	40.5'	200	12.0	17.65	2.78	1.28	6.55	6	18.2
1:57	60	40.5'	200	13.0						
For three (3) consecutive Readings			Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable
Well Condition <b>Good</b>	Pad Condition <b>Good</b>	Lock Functioning <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Bladder Pump <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Casing SS <input type="checkbox"/> Casing PVC <input checked="" type="checkbox"/>	Filtered: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Field Blank Collected Time: <b>2:22p</b>	Split Sample <input type="checkbox"/> Yes <input type="checkbox"/> No With: <input checked="" type="checkbox"/>		Duplicated Collected Time: Semi-Annual <input checked="" type="checkbox"/>	
Sample Time	Depth to Water	Color	Odor	Temp. (C°)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity NTU)	
1:52p	40.5'	Clear	N	17.65	2.78	1.28	6.55	6	18.2	



Acto cal  
 pH- 4.0  
 MS-5.60  
 NTU- 0.0  
 DO- 9.00

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# Groundwater Field Log

# Wilson Landfill

Site Name: <b>Wilson LF</b>	Well No. <b>MW-8</b>	Total Depth (ft.) <b>63.46</b>	Initial Depth to Water (ft.) <b>44.07</b>	Height of Water Column (ft.) <b>19.39</b>	Date: <b>4-26-2023</b>	Time: <b>8:04A</b>				
Site Location: <b>Ohio Co, KY</b>	AKGWA# <b>8005-3475</b>	Casing Diameter <input type="checkbox"/> 4" <input checked="" type="checkbox"/> 2" Conversion fact. 4"-0.67 2"-0.16	Measuring Point (ft.) <b>471.60</b>	Groundwater Elevation (ft.) <b>427.53</b>	Well Vol. (Gal.) <b>3.10</b>	PO #				
<input type="checkbox"/> Rain <input type="checkbox"/> Sleet/Freezing Rain <input type="checkbox"/> Snow <input type="checkbox"/> Fog <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Partly Cloudy <input type="checkbox"/> Windy Temp. <b>50</b> (F°)										
Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
7:04	0	43.9'	100	0.5	15.32	1.75	1.70	6.45	4	1000
7:09	5	43.9'	100	1.0	15.22	1.74	0.93	6.44	2	907
7:14	10	43.9'	100	1.5	15.15	1.74	0.92	6.43	0	574
7:19	15	43.9'	100	2.0	15.17	1.74	0.78	6.42	0	454
7:24	20	43.9'	100	2.5	15.15	1.74	0.77	6.41	0	266
7:29	25	43.9'	100	3.0	15.13	1.74	0.89	6.41	0	175
7:34	30	43.9'	100	3.5	15.13	1.74	0.65	6.40	-3	141
7:39	35	43.9'	100	4.0	15.17	1.74	0.58	6.40	-4	108
7:44	40	43.9'	100	4.5	15.14	1.74	0.55	6.40	-4	83.5
7:49	45	43.9'	100	5.0	15.11	1.74	0.56	6.42	-4	67.2
For three (3) consecutive Readings			Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable
Well Condition	Pad Condition	Lock Functioning	Bladder Pump	Casing SS <input type="checkbox"/>	<input type="checkbox"/> Field Blank Collected Time:		<input type="checkbox"/> Duplicated Collected Time:			
good	good	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Casing PVC <input checked="" type="checkbox"/>	Filtered: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Split Sample <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Semi-Annual <input checked="" type="checkbox"/>			
Sample Time	Depth to Water	Color	Odor	Temp. (°C)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity NTU)	
8:04A	43.9'	Clear	N	15.12	1.73	0.52	6.41	-6	42.5	



## Groundwater Field Log

## Wilson Landfill

Site Name: <b>Wilson LF</b>	Well No. <b>MW-8</b>	Total Depth (ft.) <b>63.46</b>	Initial Depth to Water (ft.) <b>44.07'</b>	Height of Water Column (ft.) <b>19.39'</b>	Date: <b>4-26-23</b>	Time: <b>8:04A</b>				
Site Location: <b>Ohio Co, KY</b>	AKGWA# <b>8005-3475</b>	Casing Diameter <input type="checkbox"/> 4" <input checked="" type="checkbox"/> 2" Conversion fact. 4"-0.67 2"-0.16	Measuring Point (ft.) <b>471.60</b>	Groundwater Elevation (ft.) <b>427.53'</b>	Well Vol. (Gal.) <b>3.10</b>	PO #				
<input type="checkbox"/> Rain <input type="checkbox"/> Sleet/Freezing Rain <input type="checkbox"/> Snow <input type="checkbox"/> Fog <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Partly Cloudy <input type="checkbox"/> Windy Temp. <b>50</b> (F°)										
Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
7:54	50	43.9'	100	5.5	15.09	1.73	0.59	6.42	-3	51.1
7:59	55	43.9'	100	6.0	15.10	1.73	0.53	6.41	-5	46.1
8:04	60	43.9'	100	6.5	15.12	1.73	0.52	6.41	-6	42.5
For three (3) consecutive Readings		Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable	
Well Condition	Pad Condition	Lock Functioning	Bladder Pump	Casing SS <input type="checkbox"/>	Casing PVC <input checked="" type="checkbox"/>	Field Blank Collected Time:	Duplicated Collected Time:			
<b>Good</b>	<b>Good</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Filtered: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Split Sample With: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Semi-Annual <input checked="" type="checkbox"/>				
Sample Time	Depth to Water	Color	Odor	Temp. (C°)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity NTU	
8:04A	43.9'	Clear	N	15.12	1.73	0.52	6.41	-6	42.5	



# Groundwater Field Log

# Wilson Landfill

Site Name: <b>Wilson LF</b>	Well No. <b>MW-10</b>	Total Depth (ft.) <b>22.42</b>	Initial Depth to Water (ft.) <b>14.10</b>	Height of Water Column (ft.) <b>8.32</b>	Date: <b>4/25/13</b>	Time: <b>4:20:13</b>				
Site Location: <b>Ohio Co, KY</b>	AKGWA# <b>8005-3478</b>	Casing Diameter <input type="checkbox"/> 4" <input checked="" type="checkbox"/> 2" Conversion fact. 4"-0.67 2"-0.16	Measuring Point (ft.) <b>398.91</b>	Groundwater Elevation (ft.) <b>384.91</b>	Well Vol. (Gal.) <b>4.99</b>	PO #				
<input type="checkbox"/> Rain <input type="checkbox"/> Sleet/Freezing Rain <input type="checkbox"/> Snow <input type="checkbox"/> Fog <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Partly Cloudy <input type="checkbox"/> Windy Temp. <b>62</b> (F°)										
Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
1300	0	14.10	200	0	15.92	3.52	2.20	5.99	192	63.9
1305	5	18.48	200	1	15.67	3.54	3.22	6.01	163	66.8
1310	10	19.05	200	2	15.83	3.58	3.07	6.07	145	81.5
1315	15	20.50	200	3	16.41	3.21	3.06	6.18	128	111.0
1320	20	20.50	200	4	16.77	3.62	3.28	6.12	126	40.2
1325	25	20.50	200	5	16.92	3.63	3.49	6.11	124	25.6
1330	30	20.50	200	6	17.17	3.63	3.67	6.09	126	29.3
1335	35	20.50	200	7	17.40	3.61	3.99	6.06	126	22.5
1340	40	20.50	200	8	17.66	3.60	3.88	6.04	126	16.3
1345	45	20.50	200	9	17.82	3.60	3.97	6.04	127	16.0
For three (3) consecutive Readings			Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable
Well Condition	Pad Condition	Lock Functioning	Bladder Pump	Casing SS <input type="checkbox"/>	Casing PVC <input checked="" type="checkbox"/>		Field Blank Collected Time:		Duplicated Collected Time:	
Good	Good	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Filtered: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Split Sample <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No With:		Semi-Annual <input checked="" type="checkbox"/>			
Sample Time	Depth to Water	Color	Odor	Temp. (C°)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity NTU)	
4/25/13 0706	20.50	clear	none	42° 17.98	3.60	2.93	5.98	117	8.5	



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 Henderson, KY 42419-0024  
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# Groundwater Field Log

# Wilson Landfill

Site Name: <b>Wilson LF</b>	Well No. <b>MW-10</b>	Total Depth (ft.) <b>22.42</b>	Initial Depth to Water (ft.)	Height of Water Column (ft.)	Date:	Time:				
Site Location: <b>Ohio Co, KY</b>	AKGWA# <b>8005-3478</b>	Casing Diameter <input type="checkbox"/> 4" <input type="checkbox"/> 2" Conversion fact. 4"-0.67    2"-0.16	Measuring Point (ft.) <b>398.91</b>	Groundwater Elevation (ft.)	Well Vol. (Gal.)	PO #				
<input type="checkbox"/> Rain <input type="checkbox"/> Sleet/Freezing Rain <input type="checkbox"/> Snow <input type="checkbox"/> Fog <input type="checkbox"/> Clear <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Windy    Temp. _____ (F°)										
Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
13:50	50	20.50	100	1.0	17.99	3.59	3.62	6.01	123	11.7
13:55	55	20.58	100	10.5	17.98	3.60	3.14	5.98	113	9.8
13:40	60	20.50	100	12.0	17.98	3.60	2.93	5.98	117	8.5
For three (3) consecutive Readings			Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable
Well Condition	Pad Condition	Lock Functioning	Bladder Pump	Casing SS <input type="checkbox"/>	Casing PVC <input type="checkbox"/>		Field Blank Collected Time:		Duplicated Collected Time:	
		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	Filtered: <input type="checkbox"/> Yes <input type="checkbox"/> No	Split Sample <input type="checkbox"/> Yes <input type="checkbox"/> No		With:		<input type="checkbox"/>	
Sample Time	Depth to Water	Color	Odor	Temp. (C°)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity NTU)	

# Groundwater Field Log

# Wilson Landfill

Site Name: <b>Wilson LF</b>	Well No.: <b>MW-10D</b>	Total Depth (ft.): <b>76.95</b>	Initial Depth to Water (ft.): <b>13.90</b>	Height of Water Column (ft.): <b>63.05</b>	Date: <b>4/24/23</b>	Time: <b>1335</b>				
Site Location: <b>Ohio Co, KY</b>	AKGWA# <b>8007-8616</b>	Casing Diameter <input type="checkbox"/> 4" <input checked="" type="checkbox"/> 2" Conversion fact. 4"-0.67 2"-0.16	Measuring Point (ft.): <b>399.00</b>	Groundwater Elevation (ft.): <b>385.09</b>	Well Vol. (Gal.) <b>10.09</b>	PO #				
<input type="checkbox"/> Rain <input type="checkbox"/> Sleet/Freezing Rain <input type="checkbox"/> Snow <input type="checkbox"/> Fog <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Partly Cloudy <input type="checkbox"/> Windy Temp: _____ (F°)										
Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
1300	0	13.90	200	0	15.17	3.07	2.67	6.43	63	11.1
1305	5	13.90	200	1	14.80	3.01	1.44	6.34	51	3.8
1310	10	13.90	200	2	14.73	3.01	1.15	6.34	48	3.0
1315	15	13.90	200	3	14.70	3.01	1.03	6.37	45	2.1
1320	20	13.90	200	4	14.70	3.02	1.60	6.38	45	2.1
1325	25	13.90	200	5	14.65	3.02	1.06	6.38	44	1.7
1330	28	13.90	200	6	14.57	3.01	1.02	6.48	45	1.3
1335	30	13.90	200	7	14.55	3.01	0.97	6.44	44	1.4
For three (3) consecutive Readings			Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable
Well Condition <i>Good</i>	Pad Condition <i>Good</i>	Lock Functioning <i>Yes</i>	Bladder Pump	Casing SS <input type="checkbox"/>	Casing PVC <input checked="" type="checkbox"/>	Field Blank Collected Time:	Duplicated Collected Time:			
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Filtered: <input type="checkbox"/> Yes <input type="checkbox"/> No	Split Sample <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Semi-Annual <input checked="" type="checkbox"/>				
Sample Time	Depth to Water	Color	Odor	Temp. (C°)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity NTU	
1335	13.90	<i>Clear</i>	<i>None</i>	14.55	3.01	0.97	6.44	44	1.4	



CCR GROUNDWATER FIELD LOG

Wilson Landfill

Site Name: Wilson LF	Well No. MW-102	Total Depth (ft.) 36.5	Initial Depth to Water (ft.) 11.451	Height of Water Column (ft.) 25.05'	Date: 4-25-23	Time: 9:24
Site Location: Ohio Co, KY	AKGWA# 8007-2995	Casing Diameter <input type="checkbox"/> 4" <input checked="" type="checkbox"/> 2" Conversion fact. 4"-0.67 2"-0.16	Measuring Point (ft.) 399.71	Groundwater Elevation (ft.) 388.26'	Well Vol. (Gal.) 4.0	PO#

Rain  Sleet/Freezing Rain  Snow  Fog  Clear  Partly Cloudy  Windy Temp. 49° (F°)

Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
8:59	0	17.32'	100	0.5	15.39	1.22	6.15	6.89	71	13.3
9:04	5	17.32'	100	1.0	15.42	1.25	5.53	6.85	40	6.6
9:09	10	17.32'	100	1.5	15.56	1.25	5.11	6.83	33	7.0
9:14	15	17.32'	100	2.0	15.68	1.25	4.73	6.81	29	5.3
9:19	20	17.32'	100	2.5	15.82	1.25	4.36	6.85	25	5.5
9:24	25	17.32'	100	3.0	15.92	1.24	4.14	6.84	25	6.0
For three (3) consecutive Readings			Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable

Well Condition Good	Pad Condition Good	Lock Functioning <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Bladder Pump <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Casing SS <input type="checkbox"/> Casing PVC <input checked="" type="checkbox"/>	<input type="checkbox"/> Field Blank Collected Time:	<input type="checkbox"/> Duplicated Collected Time:
Filtered: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Split Sample <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No With:		Semi-Annual <input checked="" type="checkbox"/>		

Sample Time	Depth to Water	Color	Odor	Temp. (C°)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
9:24	17.32'	Clear	N	15.92	1.24	4.14	6.84	25	6.0



Auto cal  
 pH = 3.97  
 MS = 4.37  
 NTU = 0.1  
 DO = 0.36

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CCR GROUNDWATER FIELD LOG

Wilson Landfill

Site Name: Wilson LF	Well No. MW-104	Total Depth (ft.) 40.5	Initial Depth to Water (ft.) 7.25	Height of Water Column (ft.) 33.25	Date: 4/20/23	Time: 0840
Site Location: Ohio Co, KY	AKGWA# 8007-2994	Casing Diameter □ 4"    ■ 2" Conversion fact. 4"-0.67   2"-0.16	Measuring Point (ft.) 392.87	Groundwater Elevation (ft.) 385.62	Well Vol. (Gal.) 5.32	PO #

Rain  
  Sleet/Freezing Rain  
  Snow  
  Fog  
  Clear  
  Partly Cloudy  
  Windy  
 Temp. 40 [F°]

Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
0745	0	7.25	100	0	15.16	2.08	2.03	6.86	84	155
0750	5	<del>7.25</del> 12.5	100	0.5	15.14	2.07	1.78	6.86	90	115
0755	10	<del>7.25</del> 15.1	100	1	15.13	2.08	1.59	6.85	98	96.3
0800	15	16.25	100	1.5	15.12	2.08	1.41	6.85	82	84.5
0805	20	17.63	100	2.0	15.19	2.02	1.32	6.84	79	73.9
0810	25	18.20	100	2.5	15.22	2.01	1.57	6.86	77	70.8
0815	30	18.20	100	3.0	15.17	2.09	1.23	6.84	71	66.7
0820	35	18.30	100	3.5	15.38	2.09	1.07	6.83	65	63.4
0825	40	18.40	100	4.0	15.41	2.10	0.95	6.82	61	58.4
0830	45	18.40	100	4.5	15.40	2.11	0.87	6.81	55	48.1
For three (3) consecutive Readings			Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable

Well Condition	Pad Condition	Lock Functioning	Bladder Pump	Casing SS <input type="checkbox"/> Casing PVC <input checked="" type="checkbox"/>	<input type="checkbox"/> Field Blank Collected Time:	<input type="checkbox"/> Duplicated Collected Time:
Good	Good	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Filtered: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Split Sample <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No With:	Semi-Annual <input checked="" type="checkbox"/>

Sample Time	Depth to Water	Color	Odor	Temp. (C°)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
0840	18.40	Clear	None	15.47	2.11	0.83	6.81	54	47.5 48.1







Auto Cal  
 pH = 3.99  
 mV = 4.44  
 NTU = 0.0  
 DO = 8.93

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CCR GROUNDWATER FIELD LOG

Wilson Landfill

Site Name: Wilson LF	Well No. MW-105R	Total Depth (ft.) 37.87	Initial Depth to Water (ft.) 8.14'	Height of Water Column (ft.) 29.73'	Date: 4-25-23	Time: 7:48A
Site Location: Ohio Co, KY	AKGWA# 8007-1175	Casing Diameter □ 4"    ■ 2" Conversion fact. 4"-0.67   2"-0.16	Measuring Point (ft.) 397.13	Groundwater Elevation (ft.) 388.99'	Well Vol. (Gal.) 4.76g	PO #

Rain  
  Sleet/Freezing Rain  
  Snow  
  Fog  
  Clear  
  Partly Cloudy  
  Windy  
 Temp. 42° (F')

Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
7:03	0	19.65	100	0.5	15.32	1.36	4.97	7.0	120	33.0
7:08	5	19.65	100	1.0	15.24	1.34	5.14	6.72	115	22.5
7:13	10	19.65	100	1.5	15.26	1.33	2.74	6.76	112	17.7
7:18	15	19.65	100	2.0	14.95	1.33	1.43	6.83	109	37.6
7:23	20	19.65	100	2.5	14.68	1.31	1.25	6.87	93	35.7
7:28	25	19.65	100	3.0	14.68	1.31	1.07	6.89	84	19.6
7:33	30	19.65	100	3.5	14.61	1.31	1.53	6.88	75	11.0
7:38	35	19.65	100	4.0	14.57	1.30	0.94	6.88	67	8.1
7:43	40	19.65	100	4.5	14.71	1.30	0.86	6.86	65	5.8
7:48	45	19.65	100	5.0	14.60	1.31	0.82	6.84	61	3.7
For three (3) consecutive Readings			Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable

Well Condition Good	Pad Condition Good	Lock Functioning ■ Yes □ No	Bladder Pump ■ Yes □ No	Casing SS □ Casing PVC ■	Field Blank Collected Time:	Duplicated Collected Time:
				Filtered: □ Yes    ■ No	Split Sample □ Yes    ■ No	Semi-Annual

Sample Time	Depth to Water	Color	Odor	Temp. (°C)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
<del>7:38</del> 7:48A	19.65	Clear	N	14.60	1.31	0.82	6.84	61	3.7





Auto Cal

pH 3.99  
mS 4.44  
NTU 0.0  
DO 8.93

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Wilson Landfill

CCR GROUNDWATER FIELD LOG

Site Name: Wilson LF	Well No. MW-110	Total Depth (ft.) 39.5	Initial Depth to Water (ft.) 9.15	Height of Water Column (ft.) 30.35	Date: 4.25.2023	Time: 08:25A
Site Location: Ohio Co, KY	AKGWA# 8007-2996	Casing Diameter □ 4"    ■ 2" Conversion fact. 4"-0.67   2"-0.16	Measuring Point (ft.) 393.54	Groundwater Elevation (ft.) 384.39	Well Vol. (Gal.) 4.85	PO #

Rain  
  Sleet/Freezing Rain  
  Snow  
  Fog  
  Clear  
  Partly Cloudy  
  Windy  
 Temp. 40 (F°)

Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
7:40a	0	9.26	100ml	0	16.19	.571	.79	6.50	-60	136
7:45	5	9.26	100ml	.5	16.29	.585	.36	6.54	-68	53.8
7:50	10	9.26	100ml	1	14.17	.568	.33	6.53	-70	20.6
7:55	15	9.27	100ml	1.5	16.15	.529	.32	6.59	-72	341
8:00	20	9.27	100ml	2.0	16.17	.498	.31	6.65	-76	59
8:05	25	9.27	100ml	2.5	16.18	.489	.31	6.65	-77	26.5
8:10	30	9.27	100ml	3.0	16.24	.479	.32	6.65	-76	10.4
8:15	35	9.27	100ml	3.5	16.28	.476	.31	6.71	-77	6.8
8:20	40	9.27	100ml	4.0	16.26	.474	.31	6.70	-79	6.4
8:25	45	9.27	100ml	4.5	16.29	.472	.31	6.71	-80	6.4
For three (3) consecutive Readings			Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable

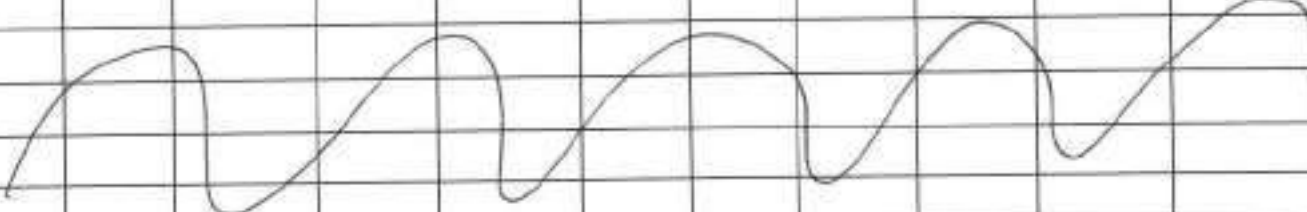
Well Condition good	Pad Condition good	Lock Functioning ■ Yes □ No	Bladder Pump ■ Yes □ No	Casing SS <input type="checkbox"/> Casing PVC <input checked="" type="checkbox"/>	Field Blank Collected Time:	Split Sample <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No With:	Duplicated Collected Time: 08:44	Semi-Annual ■
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Sample Time	Depth to Water	Color	Odor	Temp. (C°)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
8:25	9.27	clear	none	16.29	.472	.31	6.71	-80	6.4



# Groundwater Field Log

# Wilson Landfill

Site Name: Wilson LF	Well No. MW-111	Total Depth (ft.) 98.31	Initial Depth to Water (ft.) 80.82'	Height of Water Column (ft.) 17.49'	Date: 4/24/23	Time: 11:56A #16A				
Site Location: Ohio Co, KY	AKGWA# 8007-8615	Casing Diameter □ 4"    □ 2" Conversion fact. 4"-0.67    2"-0.16	Measuring Point (ft.) 466.06	Groundwater Elevation (ft.) 385.24'	Well Vol. (Gal.) 2.80	PO #				
<input type="checkbox"/> Rain <input type="checkbox"/> Sleet/Freezing Rain <input type="checkbox"/> Snow <input type="checkbox"/> Fog <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Partly Cloudy <input type="checkbox"/> Windy   Temp. <u>52</u> (F°)										
Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
11:36	0	80.82'	450	2.25	18.16	3.73	.81	7.29	-12	13.9
11:41	5	80.82'	450	4.50	17.50	3.68	.45	7.24	-13	6.2
11:46	10	80.82'	450	6.75	17.30	3.66	.40	7.19	-12	1.7
11:51	15	80.82'	450	9.00	17.25	3.63	.34	7.2	-15	0.4
11:56	20	80.82'	450	11.25	17.10	3.65	.34	7.24	-16	0.0
										
For three (3) consecutive Readings		Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable	
Well Condition <u>Good</u>	Pad Condition <u>Good</u>	Lock Functioning <u>yes</u>	Bladder Pump <u>yes</u>	Casing SS <input type="checkbox"/>	Field Blank Collected Time:		Duplicated Collected Time:		Semi-Annual <input checked="" type="checkbox"/>	
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Casing PVC <input checked="" type="checkbox"/>	Filtered: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Split Sample <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		With:		
Sample Time	Depth to Water	Color	Odor	Temp. (C°)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity NTU)	
11:56A	80.82'	Clear	N	17.10	3.65	.34	7.24	-16	0.0	



Auto cal

PA - 3.99

MS - 4.94

N+M - 0.0

DO - 9.63

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# Groundwater Field Log

# Wilson Landfill

Site Name: <b>Wilson LF</b>	Well No. <b>MW-112</b>	Total Depth (ft.) <b>54.01</b>	Initial Depth to Water (ft.) <b>18.53</b>	Height of Water Column (ft.) <b>35.48</b>	Date: <b>4/24/20</b>	Time: <b>12:00</b>				
Site Location: <b>Ohio Co, KY</b>	AKGWA# <b>8007-8614</b>	Casing Diameter <input type="checkbox"/> 4" <input checked="" type="checkbox"/> 2" Conversion fact. 4"-0.67 2"-0.16	Measuring Point (ft.) <b>403.82</b>	Groundwater Elevation (ft.) <b>385.29</b>	Well Vol. (Gal.) <b>5.73</b>	PO #				
<input type="checkbox"/> Rain <input type="checkbox"/> Sleet/Freezing Rain <input type="checkbox"/> Snow <input type="checkbox"/> Fog <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Partly Cloudy <input type="checkbox"/> Windy Temp. <b>52</b> (F)										
Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
11:20	0	18.53	200	0	15.14	1.44	0.07	5.90	125	3.8
11:25	5	18.53	200	1	15.14	1.43	1.46	5.92	112	2.3
11:30	10	18.53	200	2	15.19	1.44	1.16	5.96	103	2.0
11:35	15	18.53	200	3	15.19	1.44	1.06	5.99	99	1.3
11:40	20	18.53	200	4	15.25	1.44	0.96	6.02	95	1.6
11:45	25	18.53	200	5	15.29	1.44	0.88	6.04	91	1.0
11:50	30	18.53	200	6	15.30	1.44	0.83	6.11	87	1.2
11:55	35	18.53	200	7	15.33	1.43	0.80	6.13	85	1.3
12:00	40	18.53	200	8	15.33	1.44	0.80	6.19	81	1.2
For three (3) consecutive Readings			Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable
Well Condition	Pad Condition	Lock Functioning	Bladder Pump	Casing SS <input type="checkbox"/>	Casing PVC <input checked="" type="checkbox"/>	Filtered: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Split Sample <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	With:	Field Blank Collected Time:	Duplicated Collected Time:
Good	Good	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No							<input checked="" type="checkbox"/> Semi-Annual
Sample Time	Depth to Water	Color	Odor	Temp. (C°)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity NTU)	
12:00	18.53	Clear	None	15.55	1.44	0.80	6.19	8.1	1.2	





Auto Cal

ph-4.02  
MS-4.60  
NTU-0.0

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Groundwater Field Log Do-9.90

Wilson Landfill

Site Name: Wilson LF	Well No. MW-113	Total Depth (ft.) 57.93	Initial Depth to Water (ft.) 22.30	Height of Water Column (ft.) 35.63	Date: 4-24-28	Time: 10:15
Site Location: Ohio Co, KY	AKGWA# 8007-1174	Casing Diameter <input type="checkbox"/> 4" <input checked="" type="checkbox"/> 2" Conversion fact. 4"-0.67 2"-0.16	Measuring Point (ft.) 411.61	Groundwater Elevation (ft.) 389.31	Well Vol. (Gal.) 5.70	PO #

Rain  Sleet/Freezing Rain  Snow  Fog  Clear  Partly Cloudy  Windy Temp. 45 (F°)

Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
9:25	0	26.52	200	0	16.99	2.19	0.43	7.08	-39	6.7
9:30	5	28.70	200	1	17.06	2.19	0.36	7.13	-53	22.1
9:35	10	30.09	200	2	17.08	2.18	0.32	7.18	-60	25.9
9:40	15	30.31	100	2.5	17.02	2.17	0.31	7.18	-63	26.7
9:45	20	30.31	100	3.0	17.04	2.18	0.30	7.19	-65	51.4
9:50	25	30.32	100	3.5	17.09	2.18	0.33	7.34	-66	51.5
9:55	30	30.32	100	4.0	17.17	2.18	0.29	7.24	-67	58.4
10:00	35	30.32	100	4.5	17.23	2.18	0.28	7.24	-69	5.4
10:05	40	30.32	100	5.0	17.20	2.18	0.28	7.25	-69	10.2
10:10	45	30.32	100	5.5	17.14	2.19	0.28	7.25	-70	10.3
For three (3) consecutive Readings			Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- 10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable

Well Condition	Pad Condition	Lock Functioning	Bladder Pump	Casing SS <input type="checkbox"/>	<input type="checkbox"/> Field Blank Collected Time:	<input type="checkbox"/> Duplicated Collected Time:
Good	Good	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Casing PVC <input checked="" type="checkbox"/>	Filtered: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Split Sample <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No With: <input checked="" type="checkbox"/>

Sample Time	Depth to Water	Color	Odor	Temp. (C°)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity NTU
10:15	30.32	Clear	None	17.20	2.20	0.27	7.25	-70	11.1

# Groundwater Field Log

# Wilson Landfill

Site Name: <b>Wilson LF</b>	Well No. <b>MW-113</b>	Total Depth (ft.) <b>57.93</b>	Initial Depth to Water (ft.)	Height of Water Column (ft.)	Date:	Time:				
Site Location: <b>Ohio Co, KY</b>	AKGWA# <b>8007-1174</b>	Casing Diameter <input type="checkbox"/> 4" <input type="checkbox"/> 2" Conversion fact. 4"-0.67    2"-0.16	Measuring Point (ft.) <b>411.61</b>	Groundwater Elevation (ft.)	Well Vol. (Gal.)	PO #				
<input type="checkbox"/> Rain <input type="checkbox"/> Sleet/Freezing Rain <input type="checkbox"/> Snow <input type="checkbox"/> Fog <input type="checkbox"/> Clear <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Windy    Temp: _____ (F°)										
Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
10:15	50	30.32	100	6.0	17.20	2.20	0.27	7.25	-70	11.1
For three (3) consecutive Readings			Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable
Well Condition	Pad Condition	Lock Functioning	Bladder Pump	Casing SS <input type="checkbox"/>	Casing PVC <input type="checkbox"/>		Field Blank Collected Time:		Duplicated Collected Time:	
		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	Filtered: <input type="checkbox"/> Yes <input type="checkbox"/> No	Split Sample <input type="checkbox"/> Yes <input type="checkbox"/> No		With:		<input type="checkbox"/>	
Sample Time	Depth to Water	Color	Odor	Temp. (C°)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity NTU)	



# Groundwater Field Log

# Wilson Landfill

Site Name: <b>Wilson LF</b>	Well No. <b>MW-114</b>	Total Depth (ft.) <b>50.32</b>	Initial Depth to Water (ft.) <b>12.6'</b>	Height of Water Column (ft.) <b>37.72'</b>	Date: <b>4-24-23</b>	Time: <b>1:48</b>
Site Location: <b>Ohio Co, KY</b>	AKGWA# <b>8007-8613</b>	Casing Diameter <input type="checkbox"/> 4" <input type="checkbox"/> 2" Conversion fact. 4"-0.67 2"-0.16	Measuring Point (ft.) <b>404.18</b>	Groundwater Elevation (ft.) <b>391.58'</b>	Well Vol. (Gal.) <b>6.0</b>	PO #

Rain  Sleet/Freezing Rain  Snow  Fog  Clear  Partly Cloudy  Windy Temp. **55°** (F°)

Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
1:18	0	15.4	100	0.5	17.87	.959	1.33	7.88	-23	16.8
1:23	5	15.4	100	1.0	17.80	.952	1.00	7.83	-20	7.0
1:28	10	15.4	100	1.5	17.82	.949	0.83	7.81	-19	4.5
1:33	15	15.4	100	2.0	17.80	.948	0.77	7.81	-5	4.3
1:38	20	15.4	100	2.5	17.84	.946	0.74	7.81	-16	4.9
1:43	25	15.4	100	3.0	17.87	.944	0.72	7.82	-20	4.2
1:48	30	15.4	100	3.5	17.91	.942	0.68	7.83	-25	4.1
<del>1:53 35</del>										
<del>1:58 40</del>										

For three (3) consecutive Readings:	Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable	
Well Condition <b>Good</b>	Pad Condition <b>Good</b>	Lock Functioning <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Bladder Pump <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Casing SS <input type="checkbox"/> Casing PVC <input checked="" type="checkbox"/>	<input type="checkbox"/> Field Blank Collected Time:	<input type="checkbox"/> Duplicated Collected Time:	Split Sample <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No With:	Semi-Annual <input checked="" type="checkbox"/>	
Sample Time	Depth to Water	Color	Odor	Temp. (C°)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity NTU
1:48	15.4	clear	N	17.91	.942	0.68	7.83	-25	4.1

CCR GROUNDWATER FIELD LOG

WILSON LANDFILL

Site Name: <b>Wilson LF</b>	Well No. <b>MW-4D</b>	Total Depth (ft.) <b>93.5</b>	Initial Depth to Water (ft.) <b>24.90</b>	Height of Water Column (ft.) <b>68.60</b>	Date: <b>10/2/23</b>	Time: <b>1040</b>				
Site Location: <b>Ohio Co, KY</b>	AKGWA# <b>8007-4811</b>	Casing Diameter <input type="checkbox"/> 4" <input type="checkbox"/> 2" Conversion fact. <b>4"-0.67 2"-0.16</b>	Measuring Point (ft.) <b>410.02</b>	Groundwater Elevation (ft.) <b>385.12</b>	Well Vol. (Gal.) <b>10.98</b>	PO #				
<input type="checkbox"/> Rain <input type="checkbox"/> Sleet/Freezing Rain <input type="checkbox"/> Snow <input type="checkbox"/> Fog <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Partly Cloudy <input type="checkbox"/> Windy Temp. <b>71</b> (F)										
Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
0940		24.94	100	0	22.27	4.59	5.87	6.28	160	5.7
0945		24.97	100	0.5	21.69	4.81	2.29	6.18	95	54.0
0950		24.97	100	1.0	21.57	5.06	1.39	6.17	76	28.3
0955		24.97	100	1.5	21.58	5.12	1.05	6.18	67	11.7
1000		24.97	100	2.0	21.73	5.14	0.90	6.17	63	7.3
1005		24.97	100	2.5	21.95	5.15	0.79	6.20	59	6.3
1010		24.97	100	3.0	21.95	5.18	0.85	6.24	57	6.0
1015		24.97	100	3.5	22.15	5.14	0.69	6.20	54	5.6
1020		24.97	100	4.0	22.28	5.09	0.65	6.18	44	4.2
1025		24.97	100	4.5	22.54	5.01	0.62	6.18	37	4.6
For three (3) consecutive Readings			Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable
Well Condition	Pad Condition	Lock Functioning	Bladder Pump	Casing SS <input type="checkbox"/>	Casing PVC <input checked="" type="checkbox"/>	<input type="checkbox"/> Field Blank Collected Time:		<input type="checkbox"/> Duplicated Collected Time:		
Good	Good	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Filtered: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Split Sample <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No With:		Semi-Annual <input checked="" type="checkbox"/>			
Sample Time	Depth to Water	Color	Odor	Temp. (°C)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity (NTU)	
1040	24.97	clear	none	22.63	4.92	0.79	6.18	33	3.9	



CCR GROUNDWATER FIELD LOG

WILSON LANDFILL

Site Name: <b>Wilson LF</b>	Well No. <b>MW-4D</b>	Total Depth (ft.) <b>93.5</b>	Initial Depth to Water (ft.)	Height of Water Column (ft.)	Date:	Time:				
Site Location: <b>Ohio Co, KY</b>	AKGWA# <b>8007-4811</b>	Casing Diameter <input type="checkbox"/> 4" <input type="checkbox"/> 2" Conversion fact. 4"-0.67 2"-0.16	Measuring Point (ft.) <b>410.02</b>	Groundwater Elevation (ft.)	Well Vol. (Gal.)	PO #				
<input type="checkbox"/> Rain <input type="checkbox"/> Sleet/Freezing Rain <input type="checkbox"/> Snow <input type="checkbox"/> Fog <input type="checkbox"/> Clear <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Windy Temp. _____ (F")										
Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
1030		24.97	100	5.0	22.56	4.95	0.61	6.17	35	4.7
1035		24.97	100	5.5	22.75	4.91	0.59	6.17	34	4.1
1040		24.97	100	6.0	22.63	4.92	0.59	6.18	33	3.9
For three (3) consecutive Readings			Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable
Well Condition	Pad Condition	Lock Functioning	Bladder Pump	Casing SS <input type="checkbox"/> Casing PVC <input type="checkbox"/>	<input type="checkbox"/> Field Blank Collected Time:	<input type="checkbox"/> Duplicated Collected Time:				
		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	Filtered: <input type="checkbox"/> Yes <input type="checkbox"/> No	Split Sample <input type="checkbox"/> Yes <input type="checkbox"/> No	Semi-Annual <input type="checkbox"/>				
Sample Time	Depth to Water	Color	Odor	Temp. (C°)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity (NTU)	

## Groundwater Field Log

## Wilson Landfill

Site Name: <b>Wilson LF</b>	Well No. <b>MW-5</b>	Total Depth (ft.) <b>75.0</b>	Initial Depth to Water (ft.) <i>56.91</i>	Height of Water Column (ft.) <i>18.09</i>	Date: <i>10/2/23</i>	Time: <i>1555</i>				
Site Location: <b>Ohio Co, KY</b>	AKGWA# <b>8005-3477</b>	Casing Diameter: <input type="checkbox"/> 4" <input checked="" type="checkbox"/> 2" Conversion fact. 4"-0.67 2"-0.16	Measuring Point (ft.) <b>469.14</b>	Groundwater Elevation (ft.) <i>412.23</i>	Well Vol. (Gal.) <i>2.89</i>	PO #				
<input type="checkbox"/> Rain <input type="checkbox"/> Sleet/Freezing Rain <input type="checkbox"/> Snow <input type="checkbox"/> Fog <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Partly Cloudy <input type="checkbox"/> Windy Temp. <i>85</i> (F)										
Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
<i>1455</i>		<i>56.90</i>	<i>100</i>	<i>0</i>	<i>21.48</i>	<i>3.92</i>	<i>1.39</i>	<i>6.09</i>	<i>82</i>	<i>4.8</i>
<i>1500</i>		<i>56.90</i>	<i>100</i>	<i>0.5</i>	<i>22.22</i>	<i>3.91</i>	<i>1.19</i>	<i>6.11</i>	<i>80</i>	<i>6.1</i>
<i>1505</i>		<i>56.90</i>	<i>100</i>	<i>1.0</i>	<i>22.66</i>	<i>3.92</i>	<i>1.03</i>	<i>6.15</i>	<i>76</i>	<i>8.4</i>
<i>1510</i>		<i>56.90</i>	<i>100</i>	<i>1.5</i>	<i>23.31</i>	<i>3.90</i>	<i>0.89</i>	<i>6.19</i>	<i>73</i>	<i>10.6</i>
<i>1515</i>		<i>56.90</i>	<i>100</i>	<i>2.0</i>	<i>23.39</i>	<i>3.92</i>	<i>0.82</i>	<i>6.20</i>	<i>72</i>	<i>14.3</i>
<i>1520</i>		<i>56.90</i>	<i>100</i>	<i>2.5</i>	<i>23.45</i>	<i>3.92</i>	<i>0.73</i>	<i>6.20</i>	<i>71</i>	<i>18.5</i>
<i>1525</i>		<i>56.90</i>	<i>100</i>	<i>3.0</i>	<i>23.25</i>	<i>3.94</i>	<i>0.69</i>	<i>6.20</i>	<i>70</i>	<i>22.2</i>
<i>1530</i>		<i>56.90</i>	<i>100</i>	<i>3.5</i>	<i>23.20</i>	<i>3.89</i>	<i>0.63</i>	<i>6.21</i>	<i>70</i>	<i>26.3</i>
<i>1535</i>		<i>56.95</i>	<i>100</i>	<i>4.0</i>	<i>23.72</i>	<i>3.89</i>	<i>0.54</i>	<i>6.21</i>	<i>69</i>	<i>29.2</i>
<i>1540</i>		<i>56.97</i>	<i>100</i>	<i>4.5</i>	<i>23.31</i>	<i>3.90</i>	<i>0.57</i>	<i>6.21</i>	<i>69</i>	<i>32.5</i>
For three (3) consecutive Readings			Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable
Well Condition	Pad Condition	Lock Functioning	Bladder Pump	Casing SS <input type="checkbox"/>	<input type="checkbox"/> Field Blank Collected Time:		<input checked="" type="checkbox"/> Duplicated Collected Time:			
<i>Good</i>	<i>Good</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Casing PVC <input checked="" type="checkbox"/>	Filtered: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Split Sample <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Semi-Annual <input checked="" type="checkbox"/>			
Sample Time	Depth to Water	Color	Odor	Temp. (C°)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity NTU)	
<i>1555</i>	<i>56.97</i>	<i>Clear</i>	<i>None</i>	<i>23.33</i>	<i>3.90</i>	<i>0.53</i>	<i>6.24</i>	<i>68</i>	<i>43.8</i>	





## Groundwater Field Log

## Wilson Landfill

Site Name: <b>Wilson LF</b>	Well No. <b>MW-6</b>	Total Depth (ft.) <b>53.50</b>	Initial Depth to Water (ft.) <b>42.74</b>	Height of Water Column (ft.) <b>10.76</b>	Date: <b>10-3-2023</b>	Time: <b>10:45</b>				
Site Location: <b>Ohio Co, KY</b>	AKGWA# <b>8005-3476</b>	Casing Diameter <input type="checkbox"/> 4" <input checked="" type="checkbox"/> 2" Conversion fact. 4"-0.67 2"-0.16	Measuring Point (ft.) <b>433.06</b>	Groundwater Elevation (ft.) <b>390.32</b>	Well Vol. (Gal.) <b>1.72</b>	PO #				
<input type="checkbox"/> Rain <input type="checkbox"/> Sleet/Freezing Rain <input type="checkbox"/> Snow <input type="checkbox"/> Fog <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Windy Temp. <b>75°</b> (F°)										
Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
10:25	0	42.75	100	.5	20.83	3.11	2.30	6.53	2	10.8
10:30	5	42.75	100	1.0	20.66	3.24	3.23	6.40	-13	3.7
10:35	10	42.75	100	1.5	20.41	3.25	0.69	6.35	-16	2.4
10:40	15	42.75	100	2.0	20.25	3.27	0.69	6.34	-18	1.6
10:45	20	42.75	100	2.5	20.31	3.27	0.60	6.31	-18	0.7
For three (3) consecutive Readings		Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable	
Well Condition	Pad Condition	Lock Functioning	Bladder Pump	Casing SS <input type="checkbox"/>	Casing PVC <input checked="" type="checkbox"/>		<input type="checkbox"/> Field Blank Collected Time:		<input type="checkbox"/> Duplicated Collected Time:	
good	good	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Filtered: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Split Sample <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		With:		<input checked="" type="checkbox"/> Semi-Annual	
Sample Time	Depth to Water	Color	Odor	Temp. (°C)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity (NTU)	
10:45	42.75	Clear	none	20.31	3.27	0.60	6.31	-18	0.7	

## Groundwater Field Log

## Wilson Landfill

Site Name: <b>Wilson LF</b>	Well No. <b>MW-7</b>	Total Depth (ft.) <b>50.00</b>	Initial Depth to Water (ft.) <b>40.99</b>	Height of Water Column (ft.) <b>9.01</b>	Date: <b>10-03-2023</b>	Time: <b>12:10</b>				
Site Location: <b>Ohio Co, KY</b>	AKGWA# <b>8005-3479</b>	Casing Diameter <input type="checkbox"/> 4" <input checked="" type="checkbox"/> 2" Conversion fact. 4"-0.67 2"-0.16	Measuring Point (ft.) <b>426.14</b>	Groundwater Elevation (ft.) <b>385.15</b>	Well Vol. (Gal.) <b>1.44</b>	PO #				
<input type="checkbox"/> Rain <input type="checkbox"/> Sleet/Freezing Rain <input type="checkbox"/> Snow <input type="checkbox"/> Fog <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Windy Temp. <b>80</b> (F)										
Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
11:35	0	40.99	100	.5	23.53	2.46	2.76	6.58	82	1000
11:40	5	40.99	100	1.0	22.58	2.48	1.26	6.34	-10	338
11:45	10	41.00	100	1.5	23.18	2.31	.53	6.24	-17	128
11:50	15	41.00	100	2.0	24.21	2.29	.46	6.21	-18	122
11:55	20	41.00	100	2.5	25.26	2.28	.44	6.23	-22	100
12:00	25	41.00	100	3.0	25.66	2.29	.47	6.28	-27	87.8
12:05	30	41.00	100	3.5	25.97	2.30	.49	6.34	-29	83.3
12:10	35	41.00	100	4.0	26.07	2.30	.49	6.30	-28	88.2
For three (3) consecutive Readings			Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable
Well Condition	Pad Condition	Lock Functioning	Bladder Pump	Casing SS <input type="checkbox"/>	<input type="checkbox"/> Field Blank Collected Time:		<input type="checkbox"/> Duplicated Collected Time:			
good	good	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Casing PVC <input checked="" type="checkbox"/>	Filtered: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Split Sample <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	With: <input checked="" type="checkbox"/>			
Sample Time	Depth to Water	Color	Odor	Temp. (C°)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity NTU)	
12:10	41.00	clear	none	26.07	2.30	.49	6.30	-28	88.2	





4.02 pH  
 2.24 ms/cm  
 0.0 NTU  
 9.63 mg/L DO  
 108.9% DO

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# Groundwater Field Log

# Wilson Landfill

Site Name: <b>Wilson LF</b>	Well No. <b>MW-8</b>	Total Depth (ft.) <b>63.46</b>	Initial Depth to Water (ft.) <b>44.97</b>	Height of Water Column (ft.) <b>18.49</b>	Date: <b>10-2-2023</b>	Time: <b>14:35</b>
Site Location: <b>Ohio Co, KY</b>	AKGWA# <b>8005-3475</b>	Casing Diameter □ 4"    ■ 2" Conversion fact. 4"-0.67   2"-0.16	Measuring Point (ft.) <b>471.60</b>	Groundwater Elevation (ft.) <b>426.63</b>	Well Vol. (Gal.) <b>2.96</b>	PO #

Rain  
  Sleet/Freezing Rain  
  Snow  
  Fog  
  Clear  
  Partly Cloudy  
  Windy  
 Temp. **85°** (F)

Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
13:50	0	44.97	100	.5	22.71	1.85	1.20	6.51	-62	1000
13:55	5	44.97	100	1.0	21.81	1.84	.75	6.53	-61	880
14:00	10	44.98	100	1.5	21.34	1.82	.64	6.56	-61	604
14:05	15	44.98	100	2.0	20.64	1.82	.59	6.61	-61	439
14:10	20	44.98	100	2.5	20.84	1.80	.58	6.64	-61	317
14:15	25	44.98	100	3.0	20.57	1.78	.61	6.67	-62	249
14:20	30	44.98	100	3.5	20.56	1.79	.54	6.65	-59	236
14:25	35	44.98	100	4.0	20.52	1.77	.48	6.64	-56	183
14:30	40	44.98	100	5.5	20.46	1.77	.48	6.63	-55	173
14:35	45	44.98	100	5.0	20.50	1.77	.49	6.63	-55	169
For three (3) consecutive Readings		Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable	

Well Condition	Pad Condition	Lock Functioning	Bladder Pump	Casing SS <input type="checkbox"/>	<input type="checkbox"/> Field Blank Collected Time:	<input type="checkbox"/> Duplicated Collected Time:			
good	good	■ Yes □ No	■ Yes □ No	Casing PVC <input checked="" type="checkbox"/>	Split Sample <input type="checkbox"/> Yes   ■ No With:	<input type="checkbox"/>			
Filtered: <input type="checkbox"/> Yes   ■ No	Temp. (°C)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity NTU)			
1435	44.98	cloudy	none	20.50	1.77	0.49	6.63	-55	169

# Groundwater Field Log

# Wilson Landfill

Site Name: <b>Wilson LF</b>	Well No. <b>MW-10</b>	Total Depth (ft.) <b>22.42</b>	Initial Depth to Water (ft.) <b>13.95</b>	Height of Water Column (ft.) <b>8.47</b>	Date: <b>10-03-2023</b>	Time: <b>13:05</b>				
Site Location: <b>Ohio Co, KY</b>	AKGWA# <b>8005-3478</b>	Casing Diameter <input type="checkbox"/> 4" <input checked="" type="checkbox"/> 2" Conversion fact. 4"-0.67 2"-0.16	Measuring Point (ft.) <b>398.91</b>	Groundwater Elevation (ft.) <b>384.96</b>	Well Vol. (Gal.) <b>1.34</b>	PO #				
<input type="checkbox"/> Rain <input type="checkbox"/> Sleet/Freezing Rain <input type="checkbox"/> Snow <input type="checkbox"/> Fog <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Partly Cloudy <input type="checkbox"/> Windy Temp. <b>84°</b> (F)										
Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
12:50	0	16.58	100	.5	22.30	3.58	.46	6.01	-17	12.0
12:55	5	16.78	100	1.0	23.21	3.59	.35	5.74	-9	1.7
13:00	10	16.84	100	1.5	23.61	3.60	.34	5.73	-9	1.1
13:05	15	16.72	100	2.0	24.02	3.60	.37	5.71	-7	1.7
For three (3) consecutive Readings			Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable
Well Condition	Pad Condition	Lock Functioning	Bladder Pump	Casing SS <input type="checkbox"/>	<input type="checkbox"/> Field Blank Collected Time:		<input type="checkbox"/> Duplicated Collected Time:			
good	good	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Casing PVC <input checked="" type="checkbox"/>	Filtered: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Split Sample <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	With: <input checked="" type="checkbox"/> Semi-Annual			
Sample Time	Depth to Water	Color	Odor	Temp. (°C)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity (NTU)	
13:05	16.72	clear	none	24.02	3.60	.37	5.71	-7	1.7	





3.98 pH  
4.79 mg/l  
0.0 NTU  
9.54 mg/l DO

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# Groundwater Field Log

# Wilson Landfill

Site Name: <b>Wilson LF</b>	Well No. <b>MW-10D</b>	Total Depth (ft.) <b>76.95</b>	Initial Depth to Water (ft.) <b>14.10</b>	Height of Water Column (ft.) <b>65.85</b>	Date: <b>10/2/23</b>	Time: <b>09:45</b>
Site Location: <b>Ohio Co, KY</b>	AKGWA# <b>8007-8616</b>	Casing Diameter □ 4" <input checked="" type="checkbox"/> 2" Conversion fact. 4"-0.67 2"-0.16	Measuring Point (ft.) <b>399.00</b>	Groundwater Elevation (ft.) <b>384.9</b>	Well Vol. (Gal.) <b>10.53</b>	PO #

Rain  
  Sleet/Freezing Rain  
  Snow  
  Fog  
  Clear  
  Partly Cloudy  
  Windy  
 Temp. \_\_\_\_\_ (F°)

Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
09:10	0	14.10	100	0	21.28	2.95	3.04	6.66	15	45.0
09:15	5	14.10	100	0.5	21.42	3.08	1.71	6.53	-46	19.3
09:20	5	14.10	100	1.0	21.66	3.25	1.29	6.45	-53	4.2
09:25	5	14.10	100	1.5	22.14	3.28	1.11	6.46	-57	2.6
09:30	5	14.10	100	2.0	21.64	3.36	0.98	6.42	-56	0.2
09:35	5	14.10	100	2.5	21.45	3.37	0.76	6.40	-56	0.0
09:40	5	14.10	100	3.0	21.37	3.37	0.75	6.45	-56	0.0
09:45	5	14.10	100	3.5	21.51	3.37	0.70	6.37	-56	0.0



For three (3) consecutive Readings	Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable
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Well Condition	Pad Condition	Lock Functioning	Bladder Pump	Casing SS <input type="checkbox"/>	<input type="checkbox"/> Field Blank Collected Time:	<input type="checkbox"/> Duplicated Collected Time:
Good	Good	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Casing PVC <input checked="" type="checkbox"/>	Filtered: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Split Sample <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No With: <input checked="" type="checkbox"/>

Sample Time	Depth to Water	Color	Odor	Temp. (C°)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity NTU
09:45	14.10	Clear	None	21.51	3.37	0.70	6.37	-56	0.0



4.02 pH  
 2.24 ms/cm  
 0.0 NTU  
 9.63 mg/L DO  
 108.97 DO

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CCR GROUNDWATER FIELD LOG

Wilson Landfill

Site Name: Wilson LF	Well No. MW-102	Total Depth (ft.) 36.5	Initial Depth to Water (ft.) 12.82	Height of Water Column (ft.) 23.68	Date: 10-2-2023	Time: 12:30p
Site Location: Ohio Co, KY	AKGWA# 8007-2995	Casing Diameter <input type="checkbox"/> 4" <input checked="" type="checkbox"/> 2" Conversion fact. 4"-0.67 2"-0.16	Measuring Point (ft.) 399.71	Groundwater Elevation (ft.) 386.89	Well Vol. (Gal.) 3.79	PO#

Rain  Sleet/Freezing Rain  Snow  Fog  Clear  Partly Cloudy  Windy Temp. 79 (F°)

Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
11:30	0	14.58	100	.5	21.42	1.29	7.22	7.58	-49	99.7
11:35	5	15.59	100	1.0	20.53	1.24	5.79	7.60	-46	135
11:40	10	16.25	100	1.5	20.12	1.22	5.06	7.64	-42	228
11:45	15	16.78	100	2.0	20.09	1.20	4.63	7.59	-41	248
11:50	20	17.69	100	2.5	19.25	1.20	4.36	7.56	-43	254
11:55	25	18.77	100	3.0	19.04	1.19	3.82	7.55	-43	259
12:00	30	19.34	100	3.5	18.88	1.19	3.59	7.53	-42	247
12:05	35	19.88	100	4.0	18.95	1.18	3.19	7.50	-43	228
12:10	40	20.22	100	4.5	18.88	1.17	3.00	7.50	-41	211
12:15	45	20.49	100	5.0	18.81	1.18	2.80	7.46	-41	214
For three (3) consecutive Readings			Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable

Well Condition	Pad Condition	Lock Functioning	Bladder Pump	Casing SS <input type="checkbox"/> Casing PVC <input checked="" type="checkbox"/>	<input type="checkbox"/> Field Blank Collected Time:	<input type="checkbox"/> Duplicated Collected Time:
good	good	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Filtered: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Split Sample <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No With:	Semi-Annual <input type="checkbox"/>

Sample Time	Depth to Water	Color	Odor	Temp. (C°)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
12:30p	20.97	clear	none	19.21	1.16	2.29	7.42	-39	164



**CCR GROUNDWATER FIELD LOG**

**Wilson Landfill**

Site Name: <b>Wilson LF</b>	Well No. <b>MW-102</b>	Total Depth (ft.) <b>36.5</b>	Initial Depth to Water (ft.) <b>12.82</b>	Height of Water Column (ft.) <b>23.68</b>	Date: <b>10-2-2023</b>	Time: <b>12:30p</b>				
Site Location: <b>Ohio Co, KY</b>	AKGWA# <b>8007-2995</b>	Casing Diameter <input type="checkbox"/> 4" <input type="checkbox"/> 2" Conversion fact. 4"-0.67    2"-0.16	Measuring Point (ft.) <b>399.71</b>	Groundwater Elevation (ft.) <b>386.89</b>	Well Vol. (Gal.) <b>3.79</b>	PO#				
<input type="checkbox"/> Rain <input type="checkbox"/> Sleet/Freezing Rain <input type="checkbox"/> Snow <input type="checkbox"/> Fog <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Windy   Temp. <b>79</b> (F°)										
Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
12:20	50	20.76	100	5.5	18.81	1.16	2.64	7.46	-41	187
12:25	55	20.95	100	6.0	19.09	1.17	2.37	7.44	-39	170
12:30	60	20.97	100	6.5	19.21	1.16	2.29	7.42	-39	164
For three (3) consecutive Readings			Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable
Well Condition	Pad Condition	Lock Functioning	Bladder Pump	Casing SS <input type="checkbox"/> Casing PVC <input checked="" type="checkbox"/>	<input type="checkbox"/> Field Blank Collected Time:		<input type="checkbox"/> Duplicated Collected Time:			
good	good	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Filtered: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Split Sample <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Semi-Annual <input type="checkbox"/>			
Sample Time	Depth to Water	Color	Odor	Temp. (°C)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity (NTU)	
12:30p	20.97	clear	none	19.21	1.16	2.29	7.42	-39	164	



4.02 pH  
 2.24 mg/cm  
 0.0 ntk  
 9.63 mg/L DO  
 108.9% DO

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CCR GROUNDWATER FIELD LOG

Wilson Landfill

Site Name: Wilson LF	Well No. MW-104	Total Depth (ft.) 40.5	Initial Depth to Water (ft.) 7.98	Height of Water Column (ft.) 32.52	Date: 10-2-2023	Time: 9:30A
Site Location: Ohio Co, KY	AKGWA# 8007-2994	Casing Diameter □ 4"    ■ 2" Conversion fact. 4"-0.67   2"-0.16	Measuring Point (ft.) 392.87	Groundwater Elevation (ft.) 384.89	Well Vol. (Gal.) 5.20	PO #

Rain  
  Sleet/Freezing Rain  
  Snow  
  Fog  
  Clear  
  Partly Cloudy  
  Windy  
 Temp. 62 (F°)

Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
8:30	0	9.29	100	.5	19.20	2.13	.89	9.05	-124	83.6
8:35	5	11.43	100	1.0	18.76	2.20	.56	8.76	-128	53.8
8:40	10	12.42	100	1.5	18.69	2.20	.49	8.68	-120	60.4
8:45	15	13.14	100	2.0	18.85	2.13	.49	8.72	-105	74.3
8:50	20	13.66	100	2.5	18.82	2.07	.53	8.75	-95	88.9
8:55	25	14.31	100	3.0	18.79	2.06	.64	8.78	-100	114
9:00	30	14.78	100	3.5	18.77	2.06	.56	8.74	-94	143
9:05	35	15.23	100	4.0	18.78	2.06	.55	8.68	-92	181
9:10	40	15.61	100	4.5	18.77	2.06	.53	8.66	-93	187
9:15	45	15.95	100	5.0	18.78	2.06	.52	8.61	-91	225
For three (3) consecutive Readings			Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable

Well Condition good	Pad Condition good	Lock Functioning ■ Yes □ No	Bladder Pump □ Yes □ No	Casing SS □ Casing PVC ■	Filtered: □ Yes   ■ No	Field Blank Collected Time:	Split Sample With: □ Yes   □ No	Duplicated Collected Time:	Semi-Annual □
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Sample Time	Depth to Water	Color	Odor	Temp. (°C)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
9:30 A	16.46	clear	none	18.86	2.05	.52	8.55	-90	293



CCR GROUNDWATER FIELD LOG

Wilson Landfill

Site Name: <b>Wilson LF</b>	Well No.: <b>MW-104</b>	Total Depth (ft.): <b>40.5</b>	Initial Depth to Water (ft.): <b>7.98</b>	Height of Water Column (ft.): <b>32.52</b>	Date: <b>10-2-2023</b>	Time: <b>9:30A</b>				
Site Location: <b>Ohio Co, KY</b>	AKGWA# <b>8007-2994</b>	Casing Diameter <input type="checkbox"/> 4" <input type="checkbox"/> 2" Conversion fact. 4"-0.67 2"-0.16	Measuring Point (ft.): <b>392.87</b>	Groundwater Elevation (ft.): <b>384.89</b>	Well Vol. (Gal.): <b>5.20</b>	PO #				
<input type="checkbox"/> Rain <input type="checkbox"/> Sleet/Freezing Rain <input type="checkbox"/> Snow <input type="checkbox"/> Fog <input type="checkbox"/> Clear <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Windy Temp. _____ (F°)										
Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
9:20	50	16.09	100	5.5	18.84	2.05	.52	8.59	-90	258
9:25	55	16.27	100	6.0	18.85	2.05	.53	8.58	-91	290
9:30	60	16.46	100	6.5	18.86	2.05	.52	8.55	-90	293
For three (3) consecutive Readings			Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable
Well Condition	Pad Condition	Lock Functioning	Bladder Pump	Casing SS <input type="checkbox"/> Casing PVC <input checked="" type="checkbox"/>	<input type="checkbox"/> Field Blank Collected Time:		<input type="checkbox"/> Duplicated Collected Time:			
good	good	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	Filtered: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Split Sample <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Semi-Annual <input type="checkbox"/>			
Sample Time	Depth to Water	Color	Odor	Temp. (C°)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity NTU	
9:30 <sub>A</sub>	16.46	clear	none	18.86	2.05	.52	8.55	-90	293	



3.97 pH  
 4.71 mg/cm  
 0.0 NTU  
 9.41 mg/L DO

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CCR GROUNDWATER FIELD LOG

Wilson Landfill

Site Name: Wilson LF	Well No. MW-105R	Total Depth (ft.) 37.87	Initial Depth to Water (ft.) 8.20	Height of Water Column (ft.) 29.67	Date: 10/2/23	Time: 0935
Site Location: Ohio Co, KY	AKGWA# 8007-1175	Casing Diameter 4" 0.67 2" 0.16 Conversion fact.	Measuring Point (ft.) 397.13	Groundwater Elevation (ft.) 388.93	Well Vol. (Gal.) 4.74	PO #

Rain  Sleet/Freezing Rain  Snow  Fog  Clear  Partly Cloudy  Windy Temp. 55 (F°)

Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
0735	0	10.52	100	0	18.66	1.40	1.52	5.78	27	27.8
0740		12.44	100	0.5	18.66	1.31	1.06	5.94	10	40.5
0745		13.43	100	1.0	18.55	1.31	0.97	5.89	1	42.8
0750		14.31	100	1.5	18.50	1.30	0.89	5.94	-6	51.1
0755		15.08	100	2.0	18.43	1.30	0.83	5.97	-11	77.8
0800		15.92	100	2.5	18.38	1.29	0.78	6.08	-17	84.7
0805		16.75	100	3.0	18.33	1.29	0.72	6.08	-21	219
0810		17.52	100	3.5	18.29	1.29	0.68	6.09	-23	182
0815		18.32	100	4.0	18.26	1.29	0.65	6.13	-28	293
0820		18.95	100	4.5	18.25	1.29	0.64	6.12	-27	353
For three (3) consecutive Readings			Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable

Well Condition Good	Pad Condition Good	Lock Functioning <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Bladder Pump <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Casing SS <input type="checkbox"/> Casing PVC <input checked="" type="checkbox"/>	<input type="checkbox"/> Field Blank Collected	<input type="checkbox"/> Duplicated Collected
				Filtered: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Split Sample With: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Semi-Annual <input checked="" type="checkbox"/>

Sample Time	Depth to Water	Color	Odor	Temp. (C°)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity (NTU)

CCR GROUNDWATER FIELD LOG

Wilson Landfill

Site Name: <b>Wilson LF</b>	Well No.: <b>MW-105R</b>	Total Depth (ft.): <b>37.87</b>	Initial Depth to Water (ft.):	Height of Water Column (ft.):	Date:	Time:
Site Location: <b>Ohio Co, KY</b>	AKGWA# <b>8007-1175</b>	Casing Diameter <input type="checkbox"/> 4" <input type="checkbox"/> 2" Conversion fact. 4"-0.67 2"-0.16	Measuring Point (ft.): <b>397.13</b>	Groundwater Elevation (ft.):	Well Vol. (Gal.):	PO #

Rain  Sleet/Freezing Rain  Snow  Fog  Clear  Partly Cloudy  Windy Temp. \_\_\_\_\_ (F°)

Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
0825		19.49	100	5.0	18.29	1.29	0.62	6.16	-30	378
0830		19.37	100	5.5	18.24	1.28	0.76	6.17	-31	364
0835		20.38	100	6.0	18.24	1.28	0.76	6.17	-31	364
For three (3) consecutive Readings			Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable

Well Condition	Pad Condition	Lock Functioning	Bladder Pump	Casing SS <input type="checkbox"/>	<input type="checkbox"/> Field Blank Collected	<input type="checkbox"/> Duplicated Collected
		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	Casing PVC <input type="checkbox"/>	Time:	Time:
				Filtered: <input type="checkbox"/> Yes <input type="checkbox"/> No	Split Sample <input type="checkbox"/> Yes <input type="checkbox"/> No	Semi-Annual <input type="checkbox"/>
					With:	

Sample Time	Depth to Water	Color	Odor	Temp. (°C)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
0835	20.38	Clear	None	18.24	1.28	0.76	6.17	-31	364





4.02 pH  
2.24 ms/cm  
0.0 NTU  
9.43 mg/L DO  
108.9 x DO

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CCR GROUNDWATER FIELD LOG

Wilson Landfill

Site Name: Wilson LF	Well No. MW-110	Total Depth (ft.) 39.5	Initial Depth to Water (ft.) 9.92	Height of Water Column (ft.) 29.58	Date: 10-2-2023	Time: 7:35 am
Site Location: Ohio Co, KY	AKGWA# 8007-2996	Casing Diameter □ 4"    ■ 2" Conversion fact. 4"-0.67   2"-0.16	Measuring Point (ft.) 393.54	Groundwater Elevation (ft.) 383.92	Well Vol. (Gal.) 4.73	PO #

Rain  
  Sleet/Freezing Rain  
  Snow  
  Fog  
  Clear  
  Partly Cloudy  
  Windy  
 Temp: 55 (F)

Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
7:00	0	9.97	100	0.0	18.22	.502	29.2	6.79	-61	493
7:05	5	9.97	100	0.5	18.19	.517	8.4	6.78	-63	436
7:10	10	9.97	100	1.0	17.90	.516	6.3	6.78	-65	341
7:15	15	9.97	100	1.5	17.85	.495	5.4	6.79	-65	294
7:20	20	9.98	100	2.0	17.83	.471	5.0	6.82	-65	234
7:25	25	9.98	100	2.5	17.83	.453	5.0	6.83	-66	206
7:30	30	9.98	100	3.0	17.85	.447	4.5	6.84	-67	216
7:35	35	9.98	100	3.5	17.84	.443	4.2	6.84	-68	204

For three (3) consecutive Readings	Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable
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Well Condition	Pad Condition	Lock Functioning	Bladder Pump	Casing SS <input type="checkbox"/>	<input type="checkbox"/> Field Blank Collected	Time:	■ Duplicated Collected
good	good	■ Yes □ No	□ Yes □ No	Filtered: □ Yes   ■ No	Split Sample <input type="checkbox"/> Yes   ■ No	With:	Time: 7:52 A

Sample Time	Depth to Water	Color	Odor	Temp. (°C)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
7:35 A	9.98	cloudy	none	17.84	.443	4.2	6.84	-68	204

## Groundwater Field Log

## Wilson Landfill

Site Name: <b>Wilson LF</b>	Well No.: <b>MW-111</b>	Total Depth (ft.): <b>98.31</b>	Initial Depth to Water (ft.): <b>81.25</b>	Height of Water Column (ft.): <b>17.06</b>	Date: <b>10/2/23</b>	Time: <b>12:25</b>				
Site Location: <b>Ohio Co, KY</b>	AKGWA#: <b>8007-8615</b>	Casing Diameter <input type="checkbox"/> 4" <input checked="" type="checkbox"/> 2" Conversion fact. 4"-0.67 2"-0.16	Measuring Point (ft.): <b>466.06</b>	Groundwater Elevation (ft.): <b>381.81</b>	Well Vol. (Gal.): <b>2.72</b>	PO #				
<input type="checkbox"/> Rain <input type="checkbox"/> Sleet/Freezing Rain <input type="checkbox"/> Snow <input type="checkbox"/> Fog <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Partly Cloudy <input type="checkbox"/> Windy Temp. <b>75</b> (F°)										
Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
11:15	0	81.28	100	0	21.56	3.53	1.35	6.39	+32	28.4
11:20	5	81.28	100	0.5	23.64	3.31	0.59	6.37	-31	21.1
11:25	5	81.28	100	1.0	25.68	0.000	7.38	6.90	-10	22.3 <sup>line</sup> <sub>scrap</sub>
11:30	5	81.28	100	1.5	26.70	3.36	2.12	6.46	-51	23.8
11:35	5	81.28	100	2.0	25.08	3.46	0.96	6.32	-31	21.4
11:40	5	81.28	100	2.5	22.30	3.48	0.75	6.29	-26	16.9
11:45	5	81.28	100	3.0	22.37	3.45	0.63	6.24	-24	12.1
11:50	5	81.28	100	3.5	22.07	3.44	0.56	6.25	-24	8.6
11:55	5	81.28	100	4.0	21.85	3.44	0.51	6.25	-24	5.4
12:00	5	81.28	100	4.5	21.86	3.44	0.52	6.25	-24	3.9
For three (3) consecutive Readings			Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable
Well Condition	Pad Condition	Lock Functioning	Bladder Pump	Casing SS <input type="checkbox"/>	<input type="checkbox"/> Field Blank Collected Time:		<input type="checkbox"/> Duplicated Collected Time:			
Good	Good	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Casing PVC <input checked="" type="checkbox"/>	Filtered: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Split Sample <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	With: <input checked="" type="checkbox"/>			
Sample Time	Depth to Water	Color	Odor	Temp. (C°)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity NTU)	
12:25	81.28	Clear	None	21.79	3.42	0.42	6.24	-24	0.8	





3.98 pH  
 4.79 ns/cm  
 0.0 NTU  
 9.54 mg/L DO

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# Groundwater Field Log

# Wilson Landfill

Site Name: <b>Wilson LF</b>	Well No. <b>MW-111</b>	Total Depth (ft.) <b>98.31</b>	Initial Depth to Water (ft.) <b>22.65</b>	Height of Water Column (ft.) <b>17.06</b>	Date: <b>10/2/23</b>	Time: <b>12:25</b>
Site Location: <b>Ohio Co, KY</b>	AKGWA# <b>8007-8615</b>	Casing Diameter □ 4" <input checked="" type="checkbox"/> 2" Conversion fact. 4"-0.67 2"-0.16	Measuring Point (ft.) <b>466.06</b>	Groundwater Elevation (ft.) <b>443.44</b>	Well Vol. (Gal.) <b>2.72</b>	PO # <b>12.10</b>

Rain 
  Sleet/Freezing Rain 
  Snow 
  Fog 
  Clear 
  Partly Cloudy 
  Windy 
 Temp. **59°** (F°)

Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
12:05	5	81.28	100	5.0	21.97	3.42	0.46	6.44	-22	7.5-3.2
12:10	5	81.28	100	5.5	21.95	3.44	0.45	6.25	-24	2.7
12:15	5	81.28	100	6.0	21.90	3.44	0.41	6.25	-24	1.9
12:20	5	81.28	100	6.5	21.97	3.42	0.44	6.25	-24	1.6
12:25	5	81.28	100	7.0	21.99	3.42	0.42	6.24	-24	0.8

For three (3) consecutive Readings:
   
 Required Purge:  Actual Purge:  +/- 3% (°C)  +/- 3%
   
 +/- 10% <0.5mg/l stable  +/- .10 (SU)  +/- 10 mV  +/- 10% unless <5 NTU consider stable

Well Condition <b>Good</b>	Pad Condition	Lock Functioning <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Bladder Pump <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Casing SS <input type="checkbox"/> Casing PVC <input checked="" type="checkbox"/>	<input type="checkbox"/> Field Blank Collected Time:	<input type="checkbox"/> Duplicated Collected Time:
<b>Good</b>	<b>Good</b>			Filtered: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Split Sample <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Semi-Annual <input checked="" type="checkbox"/>

Sample Time	Depth to Water	Color	Odor	Temp. (°C)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity NTU)
12:25	81.28	clear	None	21.99	3.42	0.42	6.24	-24	0.8



# Groundwater Field Log


# Wilson Landfill

Site Name: <b>Wilson LF</b>	Well No. <b>MW-112</b>	Total Depth (ft.) <b>54.01</b>	Initial Depth to Water (ft.) <b>18.90</b>	Height of Water Column (ft.) <b>35.11</b> <del>18.90</del>	Date: <b>10/02/13</b>	Time: <b>1300</b>				
Site Location: <b>Ohio Co, KY</b>	AKGWA# <b>8007-8614</b>	Casing Diameter <input type="checkbox"/> 4" <input checked="" type="checkbox"/> 2" Conversion fact. 4"-0.67 2"-0.16	Measuring Point (ft.) <b>403.82</b>	Groundwater Elevation (ft.) <b>384.92</b>	Well Vol. (Gal.) <b>5.62</b>	PO #				
<input type="checkbox"/> Rain <input type="checkbox"/> Sleet/Freezing Rain <input type="checkbox"/> Snow <input type="checkbox"/> Fog <input type="checkbox"/> Clear <input type="checkbox"/> Partly Cloudy <input type="checkbox"/> Windy Temp. (F)										
Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
1230		18.90	100	0	19.71	1.43	3.10	6.14	80	10.9
1235		18.90	100	0.5	19.82	1.48	2.07	6.20	83	19.2
1240		18.90	100	1.0	19.95	1.51	1.62	6.26	82	25.8
1245		18.90	100	1.5	19.87	1.51	1.29	6.27	81	37.1
1250		18.90	100	2.0	20.03	1.50	1.21	6.27	81	36.7
1255		18.90	100	2.5	20.01	1.49	1.21	6.28	80	35.9
1300		18.90	100	3.0	19.99	1.50	1.19	6.28	80	36.8
For three (3) consecutive Readings			Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable
Well Condition	Pad Condition	Lock Functioning	Bladder Pump	Casing SS <input type="checkbox"/>	<input type="checkbox"/> Field Blank Collected Time:		<input type="checkbox"/> Duplicated Collected Time:			
Good	Good	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Casing PVC <input checked="" type="checkbox"/>	Filtered: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Split Sample <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No With:		<input checked="" type="checkbox"/> Semi-Annual		
Sample Time	Depth to Water	Color	Odor	Temp. (C°)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity NTU)	
1300	18.90	Clear	None	19.17 <del>19.99</del>	1.50	1.19	6.28	80	36.8	

3.98 pH  
4.79 ms/cm  
0.0 ITM  
9.54 mg/l DO

# Groundwater Field Log

# Wilson Landfill

Site Name: <b>Wilson LF</b>	Well No. <b>MW-113</b>	Total Depth (ft.) <b>57.93</b>	Initial Depth to Water (ft.) <b>22.65</b>	Height of Water Column (ft.) <b>35.28</b>	Date: <b>10/2/23</b>	Time: <b>8:30</b>				
Site Location: <b>Ohio Co, KY</b>	AKGWA# <b>8007-1174</b>	Casing Diameter 4" <input checked="" type="checkbox"/> 2" Conversion fact. 4"-0.67 2"-0.16	Measuring Point (ft.) <b>411.61</b>	Groundwater Elevation (ft.) <b>388.68</b>	Well Vol. (Gal.) <b>5.64</b> <b>3.62</b>	PO #				
<input type="checkbox"/> Rain <input type="checkbox"/> Sleet/Freezing Rain <input type="checkbox"/> Snow <input type="checkbox"/> Fog <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Partly Cloudy <input type="checkbox"/> Windy Temp. <b>72</b> (F)										
Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
0800	0	23.12	100	0	18.88	2.12	1.18	6.44	-67	7.5
0805	5	23.55	100	0.5	18.80	2.11	0.58	6.42	-69	1.0
0810	5	23.83	100	1.0	18.83	2.10	0.55	6.42	-70	1.3
0815	5	24.30	100	1.5	18.82	2.10	0.49	6.41	-69	1.8
0820	5	24.24	100	2.0	18.87	2.10	0.45	6.30	-67	0.0
0825	5	24.33	100	2.5	18.96	2.10	0.42	6.31	-67	0.0
0830	5	24.45	100	3.0	18.94	2.10	0.43	6.32	-66	0.4
										
For three (3) consecutive Readings		Required Purge	Actual Purge	+/- 3%	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable	
Well Condition	Pad Condition	Lock Functioning	Bladder Pump	Casing SS <input type="checkbox"/>	Casing PVC <input checked="" type="checkbox"/>	<input type="checkbox"/> Field Blank Collected Time:	<input type="checkbox"/> Duplicated Collected Time:			
Good	Good	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Filtered: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Split Sample <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	With:	<input checked="" type="checkbox"/> Semi-Annual			
Sample Time	Depth to Water	Color	Odor	Temp. (°C)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity NTU)	
08:30	24.43	Clear	None	18.94	2.10	0.43	6.32	-66	0.4	





4.02 pH  
 2.24 ms/cm  
 0.0 NTU  
 9.43 mg/L DO  
 108.9% DO

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# Groundwater Field Log

# Wilson Landfill

Site Name: <b>Wilson LF</b>	Well No. <b>MW-114</b>	Total Depth (ft.) <b>50.32</b>	Initial Depth to Water (ft.) <b>14.32</b>	Height of Water Column (ft.) <b>36.0</b>	Date: <b>10-2-2023</b>	Time: <b>10:45</b>
Site Location: <b>Ohio Co, KY</b>	AKGWA# <b>8007-8613</b>	Casing Diameter <input type="checkbox"/> 4" <input checked="" type="checkbox"/> 2" Conversion fact. 4"-0.67 2"-0.16	Measuring Point (ft.) <b>404.18</b>	Groundwater Elevation (ft.) <b>389.86</b>	Well Vol. (Gal.) <b>5.76</b>	PO #

Rain  Sleet/Freezing Rain  Snow  Fog  Clear  Partly Cloudy  Windy Temp. **77°** (F)

Time	ET (min)	Depth to Water (ft.)	Purge Rate ml/min	Volume Purged (L)	Temp (°C)	Sp. Cond. (mS)	DO Mg/L	pH (SU)	eH/ORP (mV)	Turbidity (NTU)
10:30	0	14.0	100	0.5	20.73	.995	0.76	5.69	46	18.5
10:35	5	15.84	100	1.0	21.12	.985	.50	5.54	43	8.6
10:40	10	15.79	100	1.5	21.08	.983	.46	5.54	43	8.6
10:45	15	15.82	100	2.0	21.13	.979	.41	5.55	41	9.2

For three (3) consecutive Readings	Required Purge	Actual Purge	+/- 3% (°C)	+/- 3%	+/- 10% <0.5mg/l stable	+/- .10 (SU)	+/- 10 mV	+/- 10% unless <5 NTU consider stable
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Well Condition	Pad Condition	Lock Functioning	Bladder Pump	Casing SS <input type="checkbox"/>	<input type="checkbox"/> Field Blank Collected Time:	<input type="checkbox"/> Duplicated Collected Time:
good	good	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Casing PVC <input checked="" type="checkbox"/>	Split Sample <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Semi-Annual <input checked="" type="checkbox"/>
				Filtered: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	With:	

Sample Time	Depth to Water	Color	Odor	Temp. (°C)	Sp. Cond. (mS)	DO (mg/L)	pH (SU)	eH/ORP (mV)	Turbidity NTU)
10:45	15.82	clear	none	21.13	.979	.41	5.55	41	9.2



## APPENDIX B - ANALYTICAL SUMMARY TABLES

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WILSON LANDFILL - CCR ANALYTICAL SUMMARY  
MW-5

APPENDIX III CONSTITUENTS	GWPS	GWPS MCL/CCR Rule Value or Background	DATE												Assessment	Re-sample	Assessment
			4/4/2016	5/20/2016	8/25/2016	10/4/2016	2/15/2017	5/17/2017	8/16/2017	9/28/2017	10/12/2017	4/13/2018	7/12/2018	10/3/2018			
			Baseline Events														
Boron			0.387 JB	0.282 JB	0.386 J	0.367 JB	0.839 J	0.981 JB	1.17	0.81 J	1.27		0.687 J				
Calcium			673	472	509	464	471 B	514 B	480	493	480 B		504		0.755 JB		
Chloride			49.3 B	60.2 JB	73.5	89.8	160 B	169 B	180	158 B	261		69.3 B		94.0 B		
Fluoride	4.0 mg/L	MCL	ND J	ND J	ND J	0.838	ND J	ND J	ND JB	ND J	2.88		ND J		ND J		
Sulfate			1630	1950	1670 B	1570 B	1620	1530	2040 B	1860 B	1730 B		1520		1640 B		
pH (Field Measurement)			6.89	6.34	7.17	6.93	5.94	6.92	6.77	6.46	7.18		6.13		6.25		
Total Dissolved Solids			2840	2960	2940	2930	3000	3100	3220	3090	3040		3210		3200		
<b>APPENDIX IV CONSTITUENTS</b>																	
Antimony	0.006 mg/L	MCL	ND	ND	ND J	ND JB	ND	ND JB	ND JB	ND JB	NA		ND JB		NA		
Arsenic	0.0144 mg/L	Background	0.00524 J	0.00523	0.00677 B	ND J	ND J	ND JB	ND JB	ND J	NA		ND J		ND J		
Barium	2.0 mg/L	MCL	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	NA		ND J		NA		
Beryllium	0.004 mg/L	MCL	ND	ND J	ND J	ND J	ND	ND J	ND J	ND J	NA		ND		NA		
Cadmium	0.005 mg/L	MCL	ND	ND	ND	ND	ND	ND	ND	ND	NA		ND		NA		
Chromium	0.1 mg/L	MCL	ND	ND J	0.00309 B	ND J	ND	ND J	ND J	ND	NA		ND		NA		
Cobalt	0.009 mg/L	Background	0.00909 J	0.00829	0.00659	0.00664	0.00518	0.0057	ND J	0.0051	NA		0.00672		0.00660		
Fluoride	4.0 mg/L	MCL	ND J	ND J	ND J	0.838	ND J	ND J	ND JB	ND J	NA		ND J		ND J		
Lead	0.015 mg/L	CCR Rule Value	ND	ND	ND J	ND JB	ND J	ND J	ND J	ND J	NA		ND J		NA		
Lithium	0.040 mg/L	CCR Rule Value	0.0243 J	0.0283 J	0.0374 J	0.0338 J	0.0432	0.042 J	0.0489 J	0.0398	NA		0.0370 J		0.0382 J		
Mercury	0.002 mg/L	MCL	ND	ND	ND	ND	ND	ND	ND	ND	NA		ND		NA		
Molybdenum	0.1 mg/L	CCR Rule Value	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	NA		ND J		ND J		
Radium 226	5.0 pCi/L	MCL	0.645	0.915	0.714	1.19	1.01	0.967	1.22	1.01	NA		0.783		1.23		
Radium 228	0.05 mg/L	MCL	ND	ND J	ND J	ND J	ND J	ND JB	ND J	ND	NA		ND J		NA		
Selenium	0.002 mg/L	MCL	ND	ND J	ND	ND J	ND	ND J	ND J	ND	NA		ND		NA		
Thallium			ND	ND J	ND	ND J	ND	ND J	ND J	ND	NA		ND		NA		

\*All results listed in milligrams per liter (mg/L) unless otherwise noted by the Groundwater Protection Standard (GWPS).

CCR = Coal combustion residuals

MCL = Maximum Contaminant Level

NA = Not Analyzed

ND = Not Detected at or above Method Detection Limit

pCi/L = picocuries per liter

J = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.

B = Compound was found in the blank and sample.

WILSON LANDFILL - CCR ANALYTICAL SUMMARY (continued)  
MW-5

APPENDIX III CONSTITUENTS	GWPS	GWPS MCL/CCR Rule Value or Background	DATE									
			6/30/2019	11/6/2019	4/22/2020	10/13/2020	5/13/2021	9/30/2021	4/27/2022	9/26/2022	4/25/2023	10/2/2023
Assessment												
Boron			ND D2 U	ND D2 U	0.66	0.69	0.68	0.70	0.75	0.73 M2	0.75	0.75 M2
Calcium			670 D1	541 D1	600 D1	571 D1	662 D1	582 D1	614 D1	560 D1,M3	635 D1	573 D1,M3
Chloride			159 D	98.2 D	208 D	199 D	185 D	303 D	221	216 D,J	92.7 D2	320 D
Fluoride	4.0 mg/L	MCL	ND U	ND U	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20 U,M1,UR	<0.20 V1,U	<0.20 U
Sulfate			2060 D	1490 D	2820 D	1800 D	2010 D	2420 D	1710 D,J	1970 D	4710	1950 D,J
pH (Field Measurement)			6.39	6.44	6.71	5.95	6.38	6.19	6.20	4.76	6.47	6.24
Total Dissolved Solids			3440	3290	3460	3770	3790	3830	3480	3580	3650	3680
APPENDIX IV CONSTITUENTS												
Antimony	0.006 mg/L	MCL	ND U	ND U	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005 U,M2,V1	<0.005 U	<0.005 U
Arsenic	0.0144 mg/L	Background	0.0025	0.0023	0.0025	0.0029	0.0027	0.0026	0.0026	0.0026 M2	0.0050	0.0028
Barium	2.0 mg/L	MCL	0.010	0.010	0.011	0.011	0.011	0.010	0.011	0.01 M2	0.011	0.011
Beryllium	0.004 mg/L	MCL	ND U	ND U	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020 U,M2,V1	<0.0020 U	<0.0020 U
Cadmium	0.005 mg/L	MCL	ND U	ND U	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010 U,M2	<0.0010 U	<0.0010 U
Chromium	0.1 mg/L	MCL	ND U	ND U	<0.0020	<0.0020	0.0010 B,J	<0.0020	<0.0020	<0.0020 U,M2	<0.0020 U	<0.0020 U
Cobalt	0.009 mg/L	Background	0.009	0.008	0.008	0.010	0.008	0.008	0.007	0.008 M2	0.007	0.005
Fluoride	4.0 mg/L	MCL	ND U	ND U	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20 U,M1,UR	<0.20 V1,U	<0.20 U
Lead	0.015 mg/L	CCR Rule Value	ND U	ND U	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002 U,M2	<0.002 U	<0.002 U
Lithium	0.040 mg/L	CCR Rule Value	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03 M2	0.03	0.04
Mercury	0.002 mg/L	MCL	ND U	ND U	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005 U,M2,UJ	<0.000005 U	<0.000005 UJ
Molybdenum	0.1 mg/L	CCR Rule Value	0.004 J	0.004 J	0.004 J	0.004 J	0.003 J	0.004 J	0.003 J	0.004 M2,J	0.003 J	0.004 J
Radium 226	5.0 pCi/L	MCL	1.8	0.434	1.22	1.70	1.29	1.62	0.900 J	1.38 J	1.04 J	1.93 J
Radium 228			ND U	ND U	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003 U,M2	<0.003 U	<0.003 U
Selenium	0.002 mg/L	MCL	ND U	ND U	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020 U,M2	<0.0020 U	<0.0020 U
Thallium												

\*All results listed in milligrams per liter (mg/L) unless otherwise noted by the Groundwater Protection Standard (GWPS).

CCR = Coal combustion residuals

MCL = Maximum Contaminant Level

ND = Not Detected at or above Method Detection Limit

pCi/L = picocuries per liter

J = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.

B = Compound was found in the blank and sample.

D = Results reported from dilution

D1 = Sample required dilution due to high concentration of target analyte

D2 = Sample required dilution due to matrix interference

M1 = Matrix spike recovery was high; the method control sample recovery was acceptable.

M2 = Matrix spike recovery was low; the method control sample recovery was acceptable.

M3 = The accuracy of the spike recovery value is reduced since the analyte concentration in the sample is disproportionate to spike level. The method control sample recovery was acceptable.

U = Target analyte was analyzed for, but was below detection limit.

UJ = Nondetect result was qualified as estimated at the reporting limit during data review.

UR = Nondetect result was rejected during data review.

V1 = CCV recovery was above method acceptable limits. This target analyte not detected in the sample.



WILSON LANDFILL - CCR ANALYTICAL SUMMARY  
MW-6

APPENDIX III CONSTITUENTS	GWPS	GWPS MCL/CCR Rule Value or Background	DATE												Assessment	Re-sample	Assessment
			4/5/2016	5/19/2016	8/25/2016	10/4/2016	2/15/2017	5/18/2017	8/16/2017	9/29/2017	10/12/2017	4/13/2018	7/12/2018	10/4/2018			
			Baseline Events														
Boron			0.255 JB	0.243 JB	0.27 J	0.228 JB	0.293 JB	0.265 JB	0.298 J	0.328 J	0.286 J	0.250 J	0.272 JB		0.250 J	0.272 JB	
Calcium			534	466	470	445	414 B	490 B	477	459	438 B	478 J	426		478 J	426	
Chloride			3.65 B	5.09 B	4.1 B	4.63	4.93	4.37 B	5.49 B	5.36 B	5.6	4.79 B	6.16 B		4.79 B	6.16 B	
Fluoride	4.0 mg/L	MCL	ND J	ND JB	ND	ND	ND J	ND J	ND JB	ND J	2.96	ND J	ND J		ND J	ND J	
Sulfate			1560	1710	1660 B	1790 B	1610	1570	1840 B	1630 B	1670 B	1730	1590 B		1730	1590 B	
pH (Field Measurement)			6.40	6.26	6.56	6.64	6.09	6.35	6.36	6.29	6.4	6.07	6.08		6.07	6.08	
Total Dissolved Solids			2740	2760	2790	2800	2620	2820	2950	2900	2920	2920	3050		2920	3050	
<b>APPENDIX IV CONSTITUENTS</b>																	
Antimony	0.006 mg/L	MCL	ND J	ND J	ND J	ND JB	ND J	ND JB	ND JB	ND JB		ND JB	NA		ND J	NA	
Arsenic	0.0144 mg/L	Background	ND J	0.00736	ND JB	0.00534	0.0123	ND B	0.00598	0.00632		ND J	0.00592		0.00683	0.00592	
Barium	2.0 mg/L	MCL	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J		ND J	NA		ND J	NA	
Beryllium	0.004 mg/L	MCL	ND	ND	ND	ND J	ND	ND	ND	ND		ND	NA		NA	NA	
Cadmium	0.005 mg/L	MCL	ND	ND	ND	ND	ND	ND	ND	ND		ND	NA		NA	NA	
Chromium	0.1 mg/L	MCL	ND	ND J	ND B	ND	ND	ND	ND	ND J		ND J	NA		NA	NA	
Cobalt	0.009 mg/L	Background	0.00728 J	0.00713	0.0074	0.00688	0.0054	0.0059	0.00578	0.00686		0.00742	0.00666		0.00672	0.00666	
Fluoride	4.0 mg/L	MCL	ND J	ND J	ND	ND	ND J	ND J	ND JB	ND J		ND J	ND J		ND J	ND J	
Lead	0.015 mg/L	CCR Rule Value	ND	ND J	ND J	ND JB	ND J	ND J	ND J	ND J		ND J	NA		ND J	NA	
Lithium	0.040 mg/L	CCR Rule Value	0.0326 J	0.0419 J	0.0494 J	0.0459 J	0.0508	0.0455 J	0.0495 J	0.0472 J		0.0470 J	0.0463 J		0.0496 J	0.0463 J	
Mercury	0.002 mg/L	MCL	ND	ND	ND	ND	ND	ND	ND	0.000161 J F1		ND	NA		NA	NA	
Molybdenum	0.1 mg/L	CCR Rule Value	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J		ND J	ND J		ND J	ND J	
Radium 226	5.0 pCi/L	MCL	0.596	0.581	0.519	0.847	0.919	0.892	0.82	0.639		0.900	1.44		0.795	1.44	
Radium 228			ND	ND	ND	ND J	ND	ND	ND	ND		ND	NA		ND	NA	
Selenium	0.05 mg/L	MCL	ND	ND	ND	ND J	ND	ND	ND	ND		ND	NA		ND	NA	
Thallium	0.002 mg/L	MCL	ND	ND J	ND J	ND J	ND	ND	ND	ND J		ND J	NA		ND J	NA	

\*All results listed in milligrams per liter (mg/L) unless otherwise noted by the Groundwater Protection Standard (GWPS).  
 CCR = Coal combustion residuals  
 MCL = Maximum Contaminant Level  
 NA = Not Analyzed  
 ND = Not Detected at or above Method Detection Limit  
 pCi/L = picocuries per Liter  
 F1 = MS and/or MSD Recovery is outside acceptance limits.

WILSON LANDFILL - CCR ANALYTICAL SUMMARY (continued)  
MW-6

APPENDIX III CONSTITUENTS	GWPS	GWPS MCL/CCR Rule Value or Background	Assessment											
			6/30/2019	11/6/2019	4/22/2020	10/13/2020	5/13/2021	9/30/2021	4/27/2022	9/26/2022	4/25/2023	10/3/2023		
Boron			ND D2 U	ND D2 U	0.31	0.34	0.43	0.51	0.52 M2	0.58	0.87	0.71		
Calcium			433 D1	482 D1	511 D1	483 D1	568 D1	473 D1	484 D1, M2	505 D1	461 D1	504 D1		
Chloride			8.2	16.3	10.2	18.9	16.4	33.0 D	16.5	24.4 D	10.9 D2, J	33.7		
Fluoride	4.0 mg/L	MCL	ND U	ND U	0.21	<0.20	0.20	<0.20	<0.20 U	<0.20 U	<0.20 V1, U	<0.20 U		
Sulfate			2040 D	1280 D	2370 D1	1750 D	1730 D	2200 D	1470 D	1710 D	432 D2, J	3140 D		
pH (Field Measurement)			6.39	6.29	6.21	6.72	7.22	6.13	6.44	4.76	6.45	6.31		
Total Dissolved Solids			2700	3170	2750	3030	3020	3120	2790	2920	2300	2820		
<b>APPENDIX IV CONSTITUENTS</b>														
Antimony	0.006 mg/L	MCL	ND U	ND U	<0.005	<0.005	<0.005	<0.005	<0.005 U	<0.005 U	<0.005 U	<0.005 U		
Arsenic	0.0144 mg/L	Background	0.0060	0.0060	0.0050	0.0054	0.0047	0.0051	0.0046	0.0049	0.0050	0.0054		
Barium	2.0 mg/L	MCL	0.012	0.012	0.012	0.013	0.012	0.012	0.011	0.012	0.012	0.014		
Beryllium	0.004 mg/L	MCL	ND U	ND U	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020 U	<0.0020 U	<0.0020 U	<0.0020 U		
Cadmium	0.005 mg/L	MCL	ND U	ND U	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010 U	<0.0010 U	<0.0010 U	<0.0010 U		
Chromium	0.1 mg/L	MCL	ND U	ND U	<0.0020	0.0007 J	0.0007 B, J	<0.0020	<0.0020 U	<0.0020 U	0.0008 J	<0.0020 U		
Cobalt	0.009 mg/L	Background	0.008	0.008	0.009	0.009	0.008	0.008	0.008	0.008	0.007	0.007		
Fluoride	4.0 mg/L	MCL	ND U	ND U	0.21	<0.20	0.20	<0.20	<0.20 U	<0.20 U	<0.20 V1, U	<0.20 U		
Lead	0.015 mg/L	CCR Rule Value	ND U	0.0005 J	0.0005 J	0.0006 J	<0.002	<0.002	<0.002 U	<0.002 U	<0.002 U	<0.002 U		
Lithium	0.040 mg/L	CCR Rule Value	0.04	0.04	0.04	0.04	0.04	0.05	0.04 J-	0.04	0.04	0.04		
Mercury	0.002 mg/L	MCL	ND U	ND U	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005 U	<0.0005 U	<0.000005 U	<0.000005 U		
Molybdenum	0.1 mg/L	CCR Rule Value	0.006 J	0.007 J	0.006 J	0.007 J	0.006 J	0.007 J	0.006 J	0.007 J	0.006 J	0.007 J		
Radium 226	5.0 pCi/L	MCL	0.8	1.42	0.804	0.568	0.758	0.610	1.49	0.84 J	1.64 J	1.98 J		
Radium 228	0.05 mg/L	MCL	ND U	ND U	<0.003	<0.003	<0.003	<0.003	<0.003 U	<0.003 U	<0.003 U	<0.003 U		
Selenium	0.002 mg/L	MCL	ND U	ND U	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020 U	<0.0020 U	<0.0020 U	<0.0020 U		
Thallium														

\*All results listed in milligrams per liter (mg/L) unless otherwise noted by the Groundwater Protection Standard (GWPS).  
CCR = Coal combustion residuals  
MCL = Maximum Contaminant Level  
NA = Not Analyzed  
ND = Not Detected at or above Method Detection Limit  
pCi/L = picocuries per Liter  
J = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.  
J- = Qualified as estimated potential low bias during data review.  
B = Compound was found in the blank and sample.  
D = Results reported from dilution  
D1 = Sample required dilution due to high concentration of target analyte  
D2 = Sample required dilution due to matrix interference  
U = Target analyte was analyzed for, but was below detection limit  
V1 = CCV recovery was above method acceptable limits. This target analyte not detected in the sample.

Not Used

WILSON LANDFILL - CCR ANALYTICAL SUMMARY  
MW-7

APPENDIX III CONSTITUENTS	GWPS	GWPS MCL/CCR Rule Value or Background	DATE										4/13/2018 Assessment
			4/4/2016	5/19/2016	8/23/2016	10/6/2016	2/15/2017	5/18/2017	8/16/2017	9/29/2017	10/12/2017		
Baseline Events													
Boron			0.241 JB	0.165 JB	0.277 J	0.203 JB	0.293 J	0.232 JB	0.263 J	0.28 J	0.245 J		
Calcium			364	241	287	251	262 B	273 B	268	269	259 B		
Chloride			3.47 B	5.31 B	5.67 B	5.65 B	6.15	6.91 B	7.91 B	7.64 B	7.77		
Fluoride	4.0 mg/L	MCL	ND J	ND J	ND J	ND J	ND J	ND J	ND JB	ND J	1.43		
Sulfate			759	784	813 B	822	850	877	940 B	1780 B	910 B		
pH (Field Measurement)			6.53	6.29	6.60	7.33	5.60	6.55	6.49	6.32	6.50	6.26	
Total Dissolved Solids			1450	1450	1520	1560	1540	1550	1600	1590	1610		
APPENDIX IV													
CONSTITUENTS													
Antimony	0.006 mg/L	MCL	ND	ND	ND J	ND JB	ND	ND	ND JB	ND JB	ND JB	ND JB	
Arsenic	0.0144 mg/L	Background	ND	ND J	ND JB	ND JB	ND J	ND J	ND JB	ND J	ND J	ND J	
Barium	2.0 mg/L	MCL	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	
Beryllium	0.004 mg/L	MCL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Cadmium	0.005 mg/L	MCL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chromium	0.1 mg/L	MCL	ND	ND J	0.00304 B	ND	ND	ND	ND	ND	ND	ND J	
Cobalt	0.009 mg/L	Background	0.0084 J	0.0058	0.0062	0.00483 J	0.00531	0.00358 J	0.00395 J	0.00454 J	0.00468 J		
Fluoride	4.0 mg/L	MCL	ND J	ND J	ND J	ND J	ND J	ND J	ND JB	ND J	ND J	ND J	
Lead	0.015 mg/L	CCR Rule Value	ND	ND	ND	ND J	ND	ND	ND	ND	ND	ND	
Lithium	0.040 mg/L	CCR Rule Value	0.0241 J	0.0241 J	0.0305 J	0.0263 J	0.0318 J	0.0277 J	0.0291 J	0.0278	0.0261 J		
Mercury	0.002 mg/L	MCL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Molybdenum	0.1 mg/L	CCR Rule Value	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	
Radium 226	5.0 pCi/L	MCL	0.727	0.558	0.613	0.66	0.817	0.852	0.779		0.572		
Radium 228	0.05 mg/L	MCL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Selenium	0.02 mg/L	MCL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Thallium	0.002 mg/L	MCL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

\*All results listed in milligrams per liter (mg/L) unless otherwise noted by the Groundwater Protection Standard (GWPS).

- CCR = Coal combustion residuals
- MCL = Maximum Contaminant Level
- NA = Not Analyzed
- ND = Not Detected at or above Method Detection Limit
- pCi/L = picocuries per liter
- J = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.
- B = Compound was found in the blank and sample.
- D = Results reported from dilution
- D1 = Sample required dilution due to high concentration of target analyte
- D2 = Sample required dilution due to matrix interference
- U = Target analyte was analyzed for, but was below detection limit



WILSON LANDFILL - CCR ANALYTICAL SUMMARY (continued)  
MW-7

APPENDIX III CONSTITUENTS	GWPS	GWPS MCL/CCR Rule Value or Background	DATE											
			7/12/2018	10/4/2018	6/27/2019	11/7/2019	4/22/2020	10/13/2020	5/13/2021	9/30/2021	4/27/2022	9/27/2022	4/25/2023	10/3/2023
			Re-sample											
Boron			0.324 J	0.395 JB	1.75 B	1.41 D2	1.58 D1	2.28 D1	2.71 D1	2.37 D1	3.05 D1	2.93 D1	2.85 D1	3.01 D1
Calcium			297	271	329	331 D1	369 D1	350 D1	475 D1	383 D1	420 D1	449 D1	464 D1	343 D1
Chloride			17.1 B	21.9 B	32.0	30.1	40.0	45.0 D	90.7 D	96.1 D	120 D	17.4 D	94.5	76.0
Fluoride	4.0 mg/L	MCL	ND J	ND J	0.222	0.21	0.27	0.22	0.28	0.26	0.22	<1.00 U	0.25	0.23
Sulfate			837	888 B	1030	809 D	1310 D1	1050 D	885 D	2420 D	1950 D	1350 D1	2300 D, M3	1630 D
pH (Field Measurement)			6.18	6.23	6.66	6.59	6.90	6.02	6.52	6.30	6.47	6.58	6.55	6.30
Total Dissolved Solids			1720	1750	1820	1890	1910	1950	2240	2230	2310	2290	2540	2230
APPENDIX IV														
Antimony	0.006 mg/L	MCL	ND J	NA	0.000242 JB	ND U	<0.005	<0.005	<0.005	<0.005	<0.005 U	<0.005 U	<0.005 U	<0.005 U
Arsenic	0.0144 mg/L	Background	ND J	ND J	0.00423 J	0.0034	0.0075	0.0036	0.0039	0.0041	0.0040	0.0034	0.0037	0.0040
Barium	2.0 mg/L	MCL	ND J	NA	0.0164 JB	0.013	0.025	0.013	0.014	0.013	0.013	0.012	0.012	0.016
Beryllium	0.004 mg/L	MCL	NA	NA	ND	ND U	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020 U	<0.0020 U	<0.0020 U	<0.0020 U
Cadmium	0.005 mg/L	MCL	NA	NA	ND	ND U	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010 U	<0.0010 U	<0.0010 U
Chromium	0.1 mg/L	MCL	ND	NA	0.0247 B	ND U	0.0053	<0.0020	0.0008 B, J	0.0007 J	0.0006 J	<0.0020 U	0.0013 J	0.0011 J
Cobalt	0.009 mg/L	Background	0.00365 J	0.00346 J	0.00236 JB	ND U	0.006	<0.004	<0.004	<0.004	<0.004 U	<0.004 U	<0.004 U	<0.004 U
Fluoride	4.0 mg/L	MCL	ND J	ND J	0.222	0.21	0.27	0.22	0.28	0.26	0.22	<1.00 U	0.25	0.23
Lead	0.015 mg/L	CCR Rule Value	ND J	NA	0.000348 J	ND U	0.004	<0.002	<0.002	<0.002	<0.002 U	<0.002 U	<0.002 U	<0.002 U
Lithium	0.040 mg/L	CCR Rule Value	0.0271 J	0.0273 J	0.0323 J	0.02	0.03	0.03	0.03	0.03	0.19	0.03	0.02	0.03
Mercury	0.002 mg/L	MCL	NA	NA	ND	ND U	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005 U	<0.0005 U	<0.000005 U	<0.000005 U
Molybdenum	0.1 mg/L	CCR Rule Value	ND J	ND J	0.0142	0.006 J	0.003 J	0.005 J	0.005 J	0.006 J	0.006 J	0.006 J	0.006 J	0.005 J
Radium 226	5.0 pCi/L	MCL	0.697	0.935	0.597	0.864	1.05	0.967	0.224	1.23	0.605 J	2.16 J	0.924 J	0.593 J
Radium 228			ND	NA	0.000427 J	ND U	<0.003	<0.003	<0.003	<0.003	<0.003 U	<0.003 U	<0.003 U	<0.003 U
Selenium	0.05 mg/L	MCL	ND	NA	ND	ND U	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020 U	<0.0020 U	<0.0020 U	<0.0020 U
Thallium	0.002 mg/L	MCL	ND	NA	ND	ND U	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020 U	<0.0020 U	<0.0020 U	<0.0020 U

\* All results listed in milligrams per liter (mg/L) unless otherwise noted by the Groundwater Protection Standard (GWPS).  
2. Monitoring Well MW-7 Radium 226/228 sample collected 9/27/2022 was lost by laboratory and was resampled on 11/1/2022.

- CCR = Coal combustion residuals
- MCL = Maximum Contaminant Level
- NA = Not Analyzed
- ND = Not Detected at or above Method Detection Limit
- ND = Not Detected at or above Method Detection Limit
- pCi/L = picocuries per liter
- J = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.
- B = Compound was found in the blank and sample.
- D = Results reported from dilution
- D1 = Sample required dilution due to high concentration of target analyte
- D2 = Sample required dilution due to matrix interference
- U = Target analyte was analyzed for, but was below detection limit

WILSON LANDFILL - CCR ANALYTICAL SUMMARY  
MW-8

APPENDIX III CONSTITUENTS	GWPS	GWPS MCL/CCR Rule Value or Background	DATE												Re-sample			
			4/4/2016	5/19/2016	8/25/2016	10/3/2016	2/15/2017	5/17/2017	8/15/2017	9/28/2017	10/12/2017	4/13/2018	7/12/2018					
			Baseline Events															
Boron			ND JB	ND JB	ND JB	ND JB	ND JB	ND JB	ND JB	ND JB	ND JB	ND JB	ND JB	ND JB	ND JB	ND JB	ND JB	
Calcium			329	242	237	226	213 B	225 B	230	214	216 B	214	216 B	214	216 B	245	245	
Chloride			4.12 B	5.48 B	4.38 B	4.69	4.7	4.19 B	4.68 B	4.82 B	4.44	4.82 B	4.44	4.82 B	4.44	4.82 B	3.83 B	
Fluoride	4.0 mg/L	MCL	ND J	ND J	ND J	ND JB	ND J	ND J	ND JB	ND J	1.210	ND J	1.210	ND J	1.210	ND J	ND J	
Sulfate			876	910	872 B	854 B	779 B	877	964 B	900 B	894 B	900 B	894 B	900 B	894 B	887	887	
pH (Field Measurement)			6.47	6.34	6.64	6.63	4.91	6.47	6.44	6.35	6.50	6.35	6.50	6.35	6.50	6.08	6.08	
Total Dissolved Solids			1530	1590	1550	1520	1450	1560	1590	1520	1560	1590	1520	1560	1590	1690	1690	
<b>APPENDIX IV CONSTITUENTS</b>																		
Antimony	0.006 mg/L	MCL	ND	ND	ND J	ND JB	ND	ND	ND JB	ND	ND JB	ND JB	ND JB	ND JB	ND JB	ND JB	ND JB	ND JB
Arsenic	0.0144 mg/L	Background	0.00931 J	0.00698	0.00709 B	0.00581	0.00799	0.0072 B	0.00548	0.00515	0.00525	0.00525	0.00525	0.00525	0.00525	0.00525	0.00525	0.00525
Barium	2.0 mg/L	MCL	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J
Beryllium	0.004 mg/L	MCL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	0.005 mg/L	MCL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	0.1 mg/L	MCL	ND	ND J	ND JB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cobalt	0.009 mg/L	Background	ND	0.00156 J	0.00118 J	0.0015 J	0.0011 J	0.000739 J	0.000943 J	0.00102 J	0.000800 J	0.000800 J	0.00113 J	0.000800 J	0.00113 J	0.00113 J	0.00113 J	
Fluoride	4.0 mg/L	MCL	ND J	ND J	ND J	ND JB	ND J	ND J	ND JB	ND J	ND J	ND JB	ND J	ND J	ND J	ND J	ND J	ND J
Lead	0.015 mg/L	CCR Rule Value	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lithium	0.040 mg/L	CCR Rule Value	ND	ND	0.0116 J	0.012 J	0.0142 J	0.0103 J	0.0137 J	0.0137 J	0.0137 J	0.0137 J	0.0137 J	0.0137 J	0.0137 J	0.0137 J	0.0137 J	0.0137 J
Mercury	0.002 mg/L	MCL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Molybdenum	0.1 mg/L	CCR Rule Value	0.0187 J	0.0142	0.0145	0.0151	0.0185	0.0137	0.0166	0.0153	0.0153	0.0153	0.0153	0.0153	0.0153	0.0153	0.0153	0.0153
Radium 226			1.12	1.31	0.741	1.12	0.854	1.07	1.04	0.901	0.901	0.901	0.901	0.901	0.901	1.29	1.29	
Radium 228			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	0.05 mg/L	MCL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	0.002 mg/L	MCL	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

\*All results listed in milligrams per liter (mg/L) unless otherwise noted by the Groundwater Protection Standard (GWPS).

CCR = Coal combustion residuals

MCL = Maximum Contaminant Level

NA = Not Analyzed

ND = Not Detected at or above Method Detection Limit

pCi/L = picocuries per liter

J = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.

B = Compound was found in the blank and sample.





WILSON LANDFILL - CCR ANALYTICAL SUMMARY  
MW-10

APPENDIX III CONSTITUENTS	GWPS	GWPS MCL/CCR Rule Value or Background	DATE												7/13/2018 Re-sample
			4/5/2016	5/18/2016	8/25/2016	10/6/2016	2/17/2017	5/18/2017	8/18/2017	10/2/2017	10/13/2017	4/14/2018	4/14/2018 Assessment		
			Baseline Events												
Boron			0.291 JB	0.217 JB	0.205 J	0.166 JB	0.229 J	0.163 JB	0.196 J	0.181 J	0.251 J			0.144 J	
Calcium			497	390	404	369	440 B	390 B	368	379 B	347 B			378 J	
Chloride			53.7 B	85.7 JB	53	44 B	44 B	47.4 B	43.5 B	63.3	63			48.2 B	
Fluoride	4.0 mg/L	MCL	ND JB	ND J	ND J	ND J	ND J	ND J	ND JB	ND J	2.8			ND J	
Sulfate			2090	2210	2000 B	2030	1980 B	2070	2320 B	2250 B	2080 B			2010	
pH (Field Measurement)			6.03	5.82	6.05	6.91	4.62	5.88	5.83	5.84	6.00			5.68	
Total Dissolved Solids			2980	3300	3240	3230	3050	3240	3200	3300	3120			3270	
<b>APPENDIX IV CONSTITUENT</b>															
Antimony	0.006 mg/L	MCL	ND	ND	ND J	ND JB	ND JB	ND	ND JB	ND JB	0.00396 B			ND JB	ND J
Arsenic	0.0144 mg/L	Background	ND J	ND J	ND JB	ND J	ND J	ND J	ND J	ND JB	ND J			ND J	ND J
Barium	2.0 mg/L	MCL	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J	ND J			ND J	ND J
Beryllium	0.004 mg/L	MCL	ND	ND J	ND	ND	ND	ND	ND	ND	ND			ND	NA
Cadmium	0.005 mg/L	MCL	ND	ND	ND	ND	ND	ND J	ND	ND	ND			ND	NA
Chromium	0.1 mg/L	MCL	ND	ND J	ND JB	ND	ND	ND	ND	ND J	ND			ND J	ND
Cobalt	0.009 mg/L	Background	0.758	0.113	0.126	0.108	0.0836	0.0602	0.121	0.139	0.0412			0.0704	
Fluoride	4.0 mg/L	MCL	ND J	ND J	ND	ND	ND J	ND J	ND JB	ND J	ND J			ND J	ND J
Lead	0.015 mg/L	CCR Rule Value	ND	ND J	ND J	ND J	ND J	ND J	ND	ND J	ND J			ND J	ND J
Lithium	0.040 mg/L	CCR Rule Value	ND	ND	0.0141 J	0.0149 J	0.0133 J	0.0108 J	0.0129 J	0.0124 J	0.0124 J			ND	0.0102 J
Mercury	0.002 mg/L	MCL	ND	ND	ND	ND	ND	ND	ND	ND	ND			ND	NA
Molybdenum	0.1 mg/L	CCR Rule Value	ND	ND	ND	ND	ND	ND	ND J	ND	ND			ND	ND
Radium 226	5.0 pCi/l	MCL	ND	ND	ND	ND	ND	ND	0.394	0.506				0.721	0.472
Radium 228			ND	ND	ND	ND	ND	ND	ND	ND JB				ND	ND
Selenium	0.05 mg/L	MCL	ND	ND J	ND	ND	ND	ND	ND J	ND	ND			ND	ND
Thallium	0.002 mg/L	MCL	ND	ND J	ND J	ND	ND	ND	ND J	ND	ND			ND	ND

\*All results listed in milligrams per liter (mg/L) unless otherwise noted by the Groundwater Protection Standard (GWPS).

CCR = Coal combustion residuals

MCL = Maximum Contaminant Level

NA = Not Analyzed

ND = Not Detected at or above Method Detection Limit

pCi/L = picocuries per liter

J = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.

B = Compound was found in the blank and sample.

WILSON LANDFILL - CCR ANALYTICAL SUMMARY (continued)  
MW-10

APPENDIX III CONSTITUENTS	GWPS	GWPS MCL/CCR Rule Value or Background	DATE											
			10/5/2018	6/30/2019	11/4/2019	4/22/2020	10/13/2020	5/13/2021	10/1/2021	4/27/2022	9/27/2022	4/26/2023	10/3/2023	
Boron			0.286 JB	ND D2 U	ND U D2	0.28	0.39	0.31	0.70	0.43	0.60	0.66		
Calcium			334	369 D1	409 D1	415 D1	404 D1	401 D1	396 D1	391 D1	483 D1	448 D1	411 D1	448 D1
Chloride			59.2 B	80.1 D	143 D	68.6 D	89.2 D	73.2 D	98.8 D	57.9	61.1	16.5 D2	59.2	
Fluoride	4.0 mg/L	MCL	ND J	ND U	ND U	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Sulfate			1850 B	2440 D	553 D	3580 D	1380 D	1240 D	1360 D	1420 D	2660 D1	536 D2	4180 D	
pH (Field Measurement)			5.44	6.01	5.53	6.26	6.16	6.59	5.84	6.25	6.1	5.98	5.71	
Total Dissolved Solids			3120	2980	2960	3170	3290	3300	3310	3160	3220	3100	3180	
<b>APPENDIX IV CONSTITUENT</b>														
Antimony	0.006 mg/L	MCL	NA	ND U	ND U	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	0.0144 mg/L	Background	ND J	0.0009 J	0.0025	0.0011	0.0009 J	0.0013	0.0036	0.0009 J	0.0034	0.0006 J	0.0020	0.0020
Barium	2.0 mg/L	MCL	NA	0.009	0.01	0.008	0.010	0.010	0.009	0.04	0.010	0.009	0.009	0.009
Beryllium	0.004 mg/L	MCL	NA	ND U	ND U	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Cadmium	0.005 mg/L	MCL	NA	0.0001 J	ND U	<0.0010	<0.0010	<0.0010	<0.0010	0.0001 J	<0.0010	<0.0010	<0.0010	<0.0010
Chromium	0.1 mg/L	MCL	NA	ND U	ND U	<0.0020	0.0007 J	0.0010	<0.0020	0.0008 J	0.0006 J	<0.0020	<0.0020	<0.0020
Cobalt	0.009 mg/L	Background	0.114	0.110	0.108	0.082	0.078	0.064	0.092	0.022	0.108	0.116	0.064	
Fluoride	4.0 mg/L	MCL	ND J	ND U	ND U	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Lead	0.015 mg/L	CCR Rule Value	NA	ND U	ND U	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Lithium	0.040 mg/L	CCR Rule Value	0.0147 J	0.009 J	ND U	0.006 J	0.006 J	0.006 J	0.008 J	0.006 J	0.009 V1,J	0.009 J	0.009 J	0.009 J
Mercury	0.002 mg/L	MCL	NA	ND U	ND U	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.00005 U	<0.00005 U	<0.00005 U
Molybdenum	0.1 mg/L	CCR Rule Value	ND	ND U	0.003 J	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Radium 226	5.0 pCi/L	MCL	0.625	1.2	0.11	0.414	0.944	1.40	0.378	0.924 J	2.5 J	1.2 J	0.915 J+	0.915 J+
Radium 228			NA	ND U	ND U	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Selenium	0.05 mg/L	MCL	NA	ND U	ND U	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Thallium	0.002 mg/L	MCL	NA	ND U	0.0001 J	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020

\*All results listed in milligrams per liter (mg/L) unless otherwise noted by the Groundwater Protection Standard (GWPS).

CCR = Coal combustion residuals

MCL = Maximum Contaminant Level

NA = Not Analyzed

ND = Not Detected at or above Method Detection Limit

PC/L = picocuries per liter

J = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.

J+ = Qualified as estimated potential high bias during data review.

B = Compound was found in the blank and sample.

D = Results reported from dilution

D1 = Sample required dilution due to high concentration of target analyte

D2 = Sample required dilution due to matrix interference

U = Target analyte was analyzed for, but was below detection limit

V1 = CCV recovery was above method acceptable limits. This target analyte not detected in the sample.

WILSON LANDFILL - CCR ANALYTICAL SUMMARY  
MW-4D

APPENDIX III CONSTITUENTS	GWPS	GWPS MCL/CCR Rule Value or Background	DATE					
			11/2/2018	6/28/2019	11/8/2019	4/22/2020	10/13/2020	5/12/2021
Characterization								
Boron			6.60	8.09 D2	9.11 D2	10.2 D1	9.39 D1	9.29 D1
Calcium			607	635 D1	628 D1	714 D1	659 D1	711 D1
Chloride			676 B	826 D	537 D	1280.0 D	1210 D	819 D
Fluoride	4.0 mg/L	MCL	ND J	ND DU	0.21	0.26	0.23	0.26
Sulfate			1720 B	1330 D	1100 D	2650 D	1260 D	1670 D
pH (Field Measurement)			6.05	6.46	6.34	6.31	6.47	6.22
Total Dissolved Solids			4180	4140	3500	4690	4410	4670
APPENDIX IV CONSTITUENTS								
Antimony	0.006 mg/L	MCL	ND JB	ND U	ND U	<0.005	<0.005	<0.005
Arsenic	0.0144 mg/L	Background	ND JB	0.0032	0.0032	0.0039	0.0037	0.0031
Barium	2.0 mg/L	MCL	ND J	0.016	0.016	0.016	0.018	0.016
Beryllium	0.004 mg/L	MCL	ND J	ND U	ND U	<0.0020	<0.0020	<0.0020
Cadmium	0.005 mg/L	MCL	ND	ND U	ND U	<0.0010	<0.0010	<0.0010
Chromium	0.1 mg/L	MCL	0.00591 B	0.0006 J	ND U	<0.0020	0.0010 J	0.0009 B, J
Cobalt	0.009 mg/L	Background	0.0122	0.010	0.015	0.010	0.012	0.009
Fluoride	4.0 mg/L	MCL	ND J	ND DU	0.21	0.26	0.23	0.26
Lead	0.015 mg/L	CCR Rule Value	ND J	ND U	ND U	<0.002	0.0005 J	<0.002
Lithium	0.040 mg/L	CCR Rule Value	0.181	0.14	0.14	0.16	0.17	0.16
Mercury	0.002 mg/L	MCL	ND	ND U	ND U	<0.0005	<0.0005	<0.0005
Molybdenum	0.1 mg/L	CCR Rule Value	0.0185	0.007 J	0.01	0.02	0.01	0.006 J
Radium 226								
Radium 228	5.0 pCi/L	MCL	1.58	2.7	1.86	0.851	1.71	1.07
Selenium	0.05 mg/L	MCL	ND J	0.001 J	0.001 J	0.001 J	<0.003	0.001 J
Thallium	0.002 mg/L	MCL	ND J	ND U	ND U	<0.0020	<0.0020	<0.0020

\* All results listed in milligrams per liter (mg/L) unless otherwise noted by the Groundwater Protection Standard (GWPS).

CCR = Coal combustion residuals

MCL = Maximum Contaminant Level

ND = Not Detected at or above Method Detection Limit

pCi/L = picocuries per liter

J = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.

B = Compound was found in the blank and sample.

D = Results reported from dilution

D1 = Sample required dilution due to high concentration of target analyte

D2 = Sample required dilution due to matrix interference

U = Target analyte was analyzed for, but was below detection limit



WILSON LANDFILL - CCR ANALYTICAL SUMMARY (continued)  
MW-4D

APPENDIX III CONSTITUENTS	GWPS	MCL/CCR Rule Value or Background	DATE				
			9/29/2021	4/27/2022	9/27/2022	4/26/2023	10/2/2023
Boron			8.69 D1,M1	10.3 D1	11.3 D1	9.48 D1	8.76 D1
Calcium			608 D1,M3	678 D1	740 D1	721 D1	968 D1
Chloride			1570 D	1110 D	781 D	289 D2	934 D
Fluoride	4.0 mg/L	MCL	0.26	<0.20 U	<0.20 U	<2.00 D2,U	0.22
Sulfate			985 D	2260	2380 D1	641 D2	2460 D
pH (Field Measurement)			6.28	7.34	6.59	6.46	6.18
Total Dissolved Solids			4580 C6	4210	4100	3590	4200
<b>APPENDIX IV CONSTITUENTS</b>							
Antimony	0.006 mg/L	MCL	<0.005 U	<0.005 U	<0.005 U	<0.005 U	<0.005 U
Arsenic	0.0144 mg/L	Background	0.0029	0.003	0.0028	0.0045	0.0033
Barium	2.0 mg/L	MCL	0.013	0.015	0.015	0.021	0.015
Beryllium	0.004 mg/L	MCL	<0.0020	<0.0020 U	<0.0020 U	<0.002 U	<0.0020 U
Cadmium	0.005 mg/L	MCL	<0.0010	<0.0010 U	<0.0010 U	<0.001 U	<0.0010 U
Chromium	0.1 mg/L	MCL	<0.0020	0.0013 J	<0.0020 U	0.0010 J	<0.0020 U
Cobalt	0.009 mg/L	Background	0.010	0.009	0.011	0.022	0.025
Fluoride	4.0 mg/L	MCL	0.26	<0.20 U	<0.20 U	<2.00 D2,U	0.22
Lead	0.015 mg/L	CCR Rule Value	<0.002	<0.002 U	<0.002 U	0.0006 J	<0.002 U
Lithium	0.040 mg/L	CCR Rule Value	0.13 M1	0.18	0.17	0.12	0.16
Mercury	0.002 mg/L	MCL	<0.0005	<0.0005 U	<0.0005 U	<0.000005 UJ	<0.000005 UJ
Molybdenum	0.1 mg/L	CCR Rule Value	0.007 J	0.007 J	0.007 J	0.008 J	0.008 J
Radium 226			1.05	1.07 J	1.83 J	1.22 J	1.98 J
Radium 228	5.0 pCi/L	MCL	0.001 J	0.001 J	0.001 J	0.001 J	0.001 J
Selenium	0.05 mg/L	MCL	<0.0020	<0.0020 U	<0.0020 U	0.0001 J	0.001 J
Thallium	0.002 mg/L	MCL	<0.0020	<0.0020 U	<0.0020 U	0.0001 J	<0.0020

\* All results listed in milligrams per liter (mg/L) unless otherwise noted by the Groundwater Protection Standard (GWPS).

CCR = Coal combustion residuals

MCL = Maximum Contaminant Level

ND = Not Detected at or above Method Detection Limit

pCi/L = picocuries per liter

D = Results reported from dilution

D1 = Sample required dilution due to high concentration of target analyte

D2 = Sample required dilution due to matrix interference

M1 = Matrix spike recovery was high; the method control sample recovery was acceptable.

U = Target analyte was analyzed for, but was below detection limit

UJ = Nondetect result was qualified as estimated at the reporting limit during data review.

WILSON LANDFILL - CCR ANALYTICAL SUMMARY  
MW-102

APPENDIX III CONSTITUENTS	GWPS	GWPS MCL/CCR Rule Value or Background	DATE						
			11/2/2018	6/27/2019	11/8/2019	4/22/2020	10/13/2020	5/12/2021	
Boron			ND J	0.108 JB	ND D2,M4,U	<0.10	<0.10	<0.10	
Calcium			81.3	80.9	85.1 D2	94.5 D1	86.8 D2	82.8 D	
Chloride			33.3 B	33.3	35.3	33.1	32.9 D2	39.7 D	
Fluoride	4.0 mg/L	MCL	ND J	0.343	0.36	0.34	0.30	0.33	
Sulfate			265 B	279	307 D	259 D	261 D	308 D	
pH (Field Measurement)			6.58	6.7	6.61	6.48	6.33	6.49	
Total Dissolved Solids			781	760	728	724	836	734	
<b>APPENDIX IV CONSTITUENTS</b>									
Antimony	0.006 mg/L	MCL	ND JB	0.000101 JB	ND U	<0.005	<0.005	<0.005	
Arsenic	0.0144 mg/L	Background	ND JB	0.00414 J	0.0031	0.0047	0.0036	0.0038	
Barium	2.0 mg/L	MCL	ND J	0.0596 JB	0.059	0.051	0.058	0.053	
Beryllium	0.004 mg/L	MCL	ND	0.000134 J	ND U	<0.0020	<0.0020	<0.0020	
Cadmium	0.005 mg/L	MCL	ND	ND	ND U	<0.0010	<0.0010	<0.0010	
Chromium	0.1 mg/L	MCL	0.00321 B	0.00140 JB	0.0006 J	<0.0020	<0.0020	0.0011 B,J	
Cobalt	0.009 mg/L	Background	0.00263 J	0.00286 JB	ND U	<0.004	<0.004	<0.004	
Fluoride	4.0 mg/L	MCL	ND J	0.343	0.36	0.34	0.30	0.33	
Lead	0.015 mg/L	CCR Rule Value	ND J	0.000164 J	ND U	<0.002	<0.002	<0.002	
Lithium	0.040 mg/L	CCR Rule Value	ND	ND	ND U	<0.02	<0.02	<0.02	
Mercury	0.002 mg/L	MCL	ND	ND	ND U	<0.0005	<0.0005	<0.0005	
Molybdenum	0.1 mg/L	CCR Rule Value	0.0111	0.00112 J	0.002 J	<0.01	<0.01	<0.01	
Radium 226	5.0 pCi/L	MCL	1.22	0.187 U	0.425	0.084	0.741	0.497	
Radium 228									
Selenium	0.05 mg/L	MCL	ND	ND	ND U	<0.003	<0.003	<0.003	
Thallium	0.002 mg/L	MCL	ND	ND	ND U	<0.0020	<0.0020	<0.0020	

\*All results listed in milligrams per liter (mg/L) unless otherwise noted by the Groundwater Protection Standard (GWPS).

CCR = Coal combustion residuals

MCL = Maximum Contaminant Level

ND = Not Detected at or above Method Detection Limit

pCi/L = picocuries per liter

J = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.

B = Compound was found in the blank and sample.

D = Results reported from dilution

D1 = Sample required dilution due to high concentration of target analyte

D2 = Sample required dilution due to matrix interference

U = Target analyte was analyzed for, but was below detection limit

WILSON LANDFILL - CCR ANALYTICAL SUMMARY (continued)  
MW-102

PPENDIX III CONSTITUENT	GWPS	GWPS MCL/CCR Rule Value or Background	DATE						
			9/29/2021	4/28/2022	9/29/2022	4/25/2023	10/2/2023		
Boron			<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	U
Calcium			84.1 D1	88.4 M1, D1	97.8 D1	84.9 D1	85.5 D1	85.5 D1	D1
Chloride			36.2 M2	34.2	31.8 H2	14.8 D2	31	31	
Fluoride	4.0 mg/L	MCL	0.33	0.29	0.29	0.32	0.30	0.30	
Sulfate			433 D, M2	245 D	302 H2	150 D2	405 D	405 D	D
pH (Field Measurement)			6.58	6.59	6.67	6.84	7.42	7.42	
Total Dissolved Solids			818	792	1040	808	808	808	
<b>PPENDIX IV CONSTITUENT</b>									
Antimony	0.006 mg/L	MCL	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	U
Arsenic	0.0144 mg/L	Background	0.0042	0.0042	0.0038	0.0037	0.0049	0.0049	
Barium	2.0 mg/L	MCL	0.049	0.047	0.046	0.046	0.051	0.051	
Beryllium	0.004 mg/L	MCL	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	U
Cadmium	0.005 mg/L	MCL	<0.0010	<0.0010	<0.0010	<0.0010	0.0002	0.0002	J
Chromium	0.1 mg/L	MCL	<0.0020	<0.0020	<0.0020	0.0006	0.0024	0.0024	J
Cobalt	0.009 mg/L	Background	<0.004	<0.004	<0.004	<0.004	0.004	0.004	
Fluoride	4.0 mg/L	MCL	0.33	0.29	0.29	0.32	0.30	0.30	
Lead	0.015 mg/L	CCR Rule Value	<0.002	<0.002	<0.002	<0.002	0.002	0.002	
Lithium	0.040 mg/L	CCR Rule Value	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	U
Mercury	0.002 mg/L	MCL	<0.0005	<0.0005	<0.0005	<0.0005	<0.000005	<0.000005	U
Molybdenum	0.1 mg/L	CCR Rule Value	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	U
Radium 226	5.0 pCi/L	MCL	0.899	1.14 J	0.652 J	0.313 J	0.821 J	0.821 J	J
Radium 228									
Selenium	0.05 mg/L	MCL	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	U
Thallium	0.002 mg/L	MCL	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	J

\*All results listed in milligrams per liter (mg/L), unless otherwise noted by the Groundwater Protection Standard (GWPS).

CCR = Coal combustion residuals

MCL = Maximum Contaminant Level

ND = Not Detected at or above Method Detection Limit

pCi/L = picocuries per liter

J = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.

J+ = Qualified as estimated potential high bias during data review.

H2 = Initial analysis within holding time. Reanalysis was past holding time.

D = Results reported from dilution

D1 = Sample required dilution due to high concentration of target analyte

D2 = Sample required dilution due to matrix interference

M1 = Matrix spike recovery was high; the method control sample recovery was acceptable.

M2 = Matrix spike recovery was low; the method control sample recovery was acceptable.

U = Target analyte was analyzed for, but was below detection limit

V1 = CCV recovery was above method acceptable limits. This target analyte not detected in the sample.





WILSON LANDFILL - CCR ANALYTICAL SUMMARY (continued)  
MW-104

APPENDIX III CONSTITUENTS	GWPS	GWPS MCL/CCR Rule Value or Background	DATE	
			4/25/2023	10/2/2023
Boron			<0.10 U	<0.10 M2,U
Calcium			319 D1	296 D1,M3
Chloride			10.7	11.2 M2,J-
Fluoride	4.0 mg/L	MCL	<0.20 U	<0.20 M2,UJ
Sulfate			1710 D	1080 D, M3
pH (Field Measurement)			6.81	8.55
Total Dissolved Solids			1620	1760
<b>APPENDIX IV CONSTITUENTS</b>				
Antimony	0.006 mg/L	MCL	<0.005 U	<0.005 M2, U
Arsenic	0.0144 mg/L	Background	0.0010	0.0027
Barium	2.0 mg/L	MCL	0.034	0.046
Beryllium	0.004 mg/L	MCL	<0.002 U	<0.0020 U
Cadmium	0.005 mg/L	MCL	<0.001 U	<0.0010 U
Chromium	0.1 mg/L	MCL	0.0009 J	0.0043
Cobalt	0.009 mg/L	Background	<0.004 U	<0.004 U
Fluoride	4.0 mg/L	MCL	<0.20 U	<0.20 M2,UJ
Lead	0.015 mg/L	CCR Rule Value	<0.002 U	0.003
Lithium	0.040 mg/L	CCR Rule Value	0.03	0.03
Mercury	0.002 mg/L	MCL	<0.000005 U	<0.000005 U
Molybdenum	0.1 mg/L	CCR Rule Value	<0.01 U	<0.01 U
Radium 226	5.0 pCi/L	MCL	1.72 J	2.01 J-
Radium 228			<0.003 U	<0.003 U
Selenium	0.05 mg/L	MCL	<0.002 U	<0.0020 U
Thallium	0.002 mg/L	MCL		

\*All results listed in milligrams per liter (mg/L) unless otherwise noted by the Groundwater Protection Standard (GWPS).

CCR = Coal combustion residuals

MCL = Maximum Contaminant Level

ND = Not Detected at or above Method Detection Limit

pCi/L = picocuries per liter

J = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.

D = Results reported from dilution

D1 = Sample required dilution due to high concentration of target analyte

M2 = Matrix spike recovery was low; the method control sample recovery was acceptable.

M3 = The accuracy of the spike recovery value is reduced since the analyte concentration in the sample is disproportionate to spike level. The method control sample recovery was acceptable.

U = Target analyte was analyzed for, but was below detection limit

**WILSON LANDFILL - CCR ANALYTICAL SUMMARY**  
MW-105

APPENDIX III CONSTITUENTS	GWPS	GWPS MCL/CCR Rule Value or Background	DATE								
			11/2/2018	6/27/2019	11/7/2019	4/22/2020	10/13/2020	5/12/2021	9/29/2021	4/28/2022	
Boron			ND J	0.348 JB	ND D2,M4,U	0.33	0.37	0.36	0.34		
Calcium			124	58.6	72.0 D2,M1	60.4 D1	49.2 D2	59.7 D1	59.4 D1		
Chloride			10.5 B	9.34	10.1	9.5	8.7	9.0	9.1		
Fluoride	4.0 mg/L	MCL	ND J	0.638	0.55	0.67	0.61	0.60	0.61		
Sulfate			216 JB	37.6	73.7 D	91.8 D	75.4 D	157 D	176 D		
pH (Field Measurement)			6.75	7.70	7.51	7.78	8.02	7.21	7.27		
Total Dissolved Solids			747	548	612	398	550	644	626		
<b>APPENDIX IV CONSTITUENTS</b>											
Antimony	0.006 mg/L	MCL	ND JB	0.000186 JB	ND U	<0.005	<0.005	<0.005	<0.005		
Arsenic	0.0144 mg/L	Background	ND JB	0.00186 J	ND U	<0.0010	<0.0010	<0.0010	<0.0010		
Barium	2.0 mg/L	MCL	0.207	0.288 B	0.326	0.255	0.256	0.267	0.260		
Beryllium	0.004 mg/L	MCL	ND J	0.000398 J	ND U	<0.0020	<0.0020	<0.0020	<0.0020		
Cadmium	0.005 mg/L	MCL	ND	ND	ND U	<0.0010	<0.0010	<0.0010	<0.0010		
Chromium	0.1 mg/L	MCL	0.00388 B	0.00784 B	ND U	<0.0020	<0.0020	0.0011 B, J	<0.0020		
Cobalt	0.009 mg/L	Background	0.00488 J	0.00435 JB	ND U	<0.004	<0.004	<0.004	<0.004		
Fluoride	4.0 mg/L	MCL	ND J	0.638	0.55	0.67	0.61	0.60	0.61		
Lead	0.015 mg/L	CCR Rule Value	ND J	0.00326 J	ND U	<0.002	<0.002	<0.002	<0.002		
Lithium	0.040 mg/L	CCR Rule Value	0.0141 J	0.0278 J	0.03 M1	0.02	0.02	0.02	0.02		
Mercury	0.002 mg/L	MCL	ND	ND	ND U	<0.0005	<0.0005	<0.0005	<0.0005		
Molybdenum	0.1 mg/L	CCR Rule Value	0.0131	0.00231 J	0.002 J	0.002 J	0.002 J	0.002 J	0.002 J		
Radium 226	5.0 pCi/L	MCL	1.08	0.558 U	0.829	1.15	1.30	2.14	0.380		
Radium 228			ND	ND	ND U	<0.003	<0.003	<0.003	<0.003		
Selenium	0.05 mg/L	MCL	ND	ND	ND U	<0.0020	<0.0020	<0.0020	<0.0020		
Thallium	0.002 mg/L	MCL	ND	0.0000510 J	ND U	<0.0020	<0.0020	<0.0020	<0.0020		

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\*All results listed in milligrams per liter (mg/L) unless otherwise noted by the Groundwater Protection Standard (GWPS).

CCR = Coal combustion residuals

MCL = Maximum Contaminant Level

ND = Not Detected at or above Method Detection Limit

pCi/L = picocuries per liter

J = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.

B = Compound was found in the blank and sample.

D = Results reported from dilution

D1 = Sample required dilution due to high concentration of target analyte

D2 = Sample required dilution due to matrix interference

M1 = Matrix spike recovery was high; the method control sample recovery was acceptable.

U = Target analyte was analyzed for, but was below detection limit



WILSON LANDFILL - CCR ANALYTICAL SUMMARY  
MW-105R

APPENDIX III CONSTITUENTS	GWPS	GWPS MCL/CCR Rule Value or Background	DATE			
			4/28/2022	9/29/2022	4/25/2023	10/2/2023
Boron			<0.10 U	<0.10 U	<0.10 U	<0.10 U
Calcium			214 D1	204 D1	196 D1	182 D1
Chloride			12.2 J+	11.5		11.9
Fluoride	4.0 mg/L	MCL	<0.20 U	<0.20 UJ	0.20	<0.20 U
Sulfate			439 D,M1,J+	410.0 D,J-	769 D	428 D
pH (Field Measurement)			6.38	6.71	6.84	6.17
Total Dissolved Solids			1800	1010	1440	1060
<b>APPENDIX IV CONSTITUENTS</b>						
Antimony	0.006 mg/L	MCL	<0.005 U	<0.005 U,V1	<0.005 U	<0.005 U
Arsenic	0.0144 mg/L	Background	0.0016	0.0011	0.0008 J	0.0036
Barium	2.0 mg/L	MCL	0.033	0.032	0.025	0.033
Beryllium	0.004 mg/L	MCL	<0.0020 U	<0.0020 U,V1	<0.002 U	<0.0020 U
Cadmium	0.005 mg/L	MCL	<0.0010 U	<0.0010 U	<0.001 U	<0.0010 U
Chromium	0.1 mg/L	MCL	<0.0020 U	<0.0020 U	<0.002 U	<0.0020 U
Chromium	0.009 mg/L	Background	<0.004 U	<0.004 U	<0.004 U	<0.004 U
Fluoride	4.0 mg/L	MCL	<0.20 U	<0.20 UJ	0.20	<0.20 U
Lead	0.015 mg/L	CCR Rule Value	<0.002 U	<0.002 U	<0.002 U	<0.002 U
Lithium	0.040 mg/L	CCR Rule Value	0.03	0.03	0.03	0.03
Mercury	0.002 mg/L	MCL	<0.0005 U	<0.0005 U	<0.00005 U	<0.00005 U
Molybdenum	0.1 mg/L	CCR Rule Value	0.005 J	0.002 J	<0.01 U	<0.01 U
Radium 226	5.0 pCi/L	MCL	1.86 J	1.35 J	2.49 J	1.85 J
Radium 228						
Selenium	0.05 mg/L	MCL	<0.003 U	<0.003 U	<0.003 U	<0.003 U
Thallium	0.002 mg/L	MCL	0.0001 V1,J	<0.0020 U	<0.002 U	<0.0020 U

\*All results listed in milligrams per liter (mg/L) unless otherwise noted by the Groundwater Protection Standard (GWPS).

CCR = Coal combustion residuals

MCL = Maximum Contaminant Level

pCi/L = picocuries per liter

J = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.

J+ = Potential high bias

J- = Qualified as estimated potential low bias during data review.

D = Results reported from dilution

D1 = Sample required dilution due to high concentration of target analyte

M1 = Matrix spike recovery was high; the method control sample recovery was acceptable.

U = Target analyte was analyzed for, but was below detection limit

UJ = Nondetect result was qualified as estimated at the reporting limit during data review.

V1 = CCV recovery was above method acceptance limits. This target analyte not detected in the sample.

WILSON LANDFILL - CCR ANALYTICAL SUMMARY  
MW-110

APPENDIX III CONSTITUENTS	GWPS	GWPS MCL/CCR Rule Value or Background	DATE												
			11/2/2018	6/27/2019	11/7/2019	4/22/2020	10/13/2020	5/12/2021	9/29/2021	Characterization					
			ND J	0.0716 JB	ND U D2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Boron			ND J	0.0716 JB	ND U D2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Calcium			33.8	38.9	47.6 D2	39.9 D1	37.9 D2	39.7 D1	33.8 D1						
Chloride			14.4 B	11.1	10.0	11.5	10.5	11.2	10.9						
Fluoride	4.0 mg/L	MCL	ND J	0.229	0.23	0.28	0.24	0.26	0.27						
Sulfate			102 B	70.0	61.2 D	71.7 D	56 D	75.2 D	101 D						
pH (Field Measurement)			6.93	6.92	6.83	6.89	6.87	6.43	6.88						
Total Dissolved Solids			333	296	348	208	278	302	260						
<b>APPENDIX IV CONSTITUENTS</b>															
Antimony	0.006 mg/L	MCL	ND JB	0.000130 JB	ND U	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	0.0144 mg/L	Background	ND JB	0.00118 J	ND U	0.0019	0.0011	0.0010	0.0018						
Barium	2.0 mg/L	MCL	ND J	0.0535 JB	0.051	0.051	0.053	0.054	0.046						
Beryllium	0.004 mg/L	MCL	ND	ND	ND U	<0.0020	<0.0020	<0.0020	<0.0020						
Cadmium	0.005 mg/L	MCL	ND	ND	ND U	<0.0010	<0.0010	<0.0010	<0.0010						
Chromium	0.1 mg/L	MCL	0.00967 B	0.00217 JB	ND U	0.0007 J	<0.0020	0.0009 B,J	<0.0020						
Cobalt	0.009 mg/L	Background	0.00240 J	0.000827 JB	ND U	<0.004	<0.004	<0.004	<0.004						
Fluoride	4.0 mg/L	MCL	ND J	0.229	0.23	0.28	0.24	0.26	0.27						
Lead	0.015 mg/L	CCR Rule Value	ND J	0.000539 J	ND U	<0.002	<0.002	<0.002	<0.002						
Lithium	0.040 mg/L	CCR Rule Value	0.0122 J	ND	0.006 J	<0.02	<0.02	<0.02	<0.02						
Mercury	0.002 mg/L	MCL	ND	ND	ND U	<0.0005	<0.0005	<0.0005	<0.0005						
Molybdenum	0.1 mg/L	CCR Rule Value	ND J	ND	ND U	<0.01	<0.01	<0.01	<0.01						
Radium 226	5.0 pCi/L	MCL	1.19	0.816	1.10	1.53	1.49	1.37	1.36						
Radium 228															
Selenium	0.05 mg/L	MCL	ND	ND	ND U	<0.003	<0.003	<0.003	<0.003						
Thallium	0.002 mg/L	MCL	ND	ND	ND U	<0.0020	<0.0020	<0.0020	<0.0020						

\*All results listed in milligrams per liter (mg/L) unless otherwise noted by the Groundwater Protection Standard (GWPS).

CCR = Coal combustion residuals

MCL = Maximum Contaminant Level

ND = Not Detected at or above Method Detection Limit

pCi/L = picocuries per liter

J = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.

B = Compound was found in the blank and sample.

D = Results reported from dilution

D1 = Sample required dilution due to high concentration of target analyte

D2 = Sample required dilution due to matrix interference

U = Target analyte was analyzed for, but was below detection limit

**WILSON LANDFILL - CCR ANALYTICAL SUMMARY (continued)**  
MW-110

APPENDIX III CONSTITUENTS	GWPS	GWPS MCL/CCR Rule Value or Background	DATE			
			4/28/2022	9/28/2022	4/25/2023	10/2/2023
Boron			<0.10 U	<0.10 U	<0.10 U	<0.10 M2,U
Calcium			40.7 D1	38.3 D1	37.7 D1	39.3 D1, M1
Chloride			11.4	9.7	11.3	9.7
Fluoride	4.0 mg/L	MCL	0.23	0.24	0.27	0.24
Sulfate			94.6 D	68.4	77.7	68.4
pH (Field Measurement)			6.19	6.65	6.71	6.84
Total Dissolved Solids			2590	270	336	278
<b>APPENDIX IV</b>						
<b>CONSTITUENTS</b>						
Antimony	0.006 mg/L	MCL	<0.005 U	<0.005 U,V1	<0.005 U	<0.005 U
Arsenic	0.0144 mg/L	Background	0.0029	0.0015	0.0023	0.0040 J
Barium	2.0 mg/L	MCL	0.057	0.050	0.057	0.068
Beryllium	0.004 mg/L	MCL	<0.0020 U	<0.0020 U,V1	<0.002 U	<0.0020 U
Cadmium	0.005 mg/L	MCL	<0.0010 U	<0.0010 U	<0.001 U	<0.0010 U
Chromium	0.1 mg/L	MCL	<0.0020 U	<0.0020 U	<0.002 U	0.0016 J
Cobalt	0.009 mg/L	Background	<0.004 U	<0.004 U	<0.004 U	<0.004 U
Fluoride	4.0 mg/L	MCL	0.23	0.24	0.27	0.24
Lead	0.015 mg/L	CCR Rule Value	<0.002 U	<0.002 U	<0.002 U	0.001 J
Lithium	0.040 mg/L	CCR Rule Value	<0.02 U	<0.02 V1,U	<0.02 U	0.005 J
Mercury	0.002 mg/L	MCL	<0.0005 U	<0.0005 U	<0.000005 U	0.0000026 J
Molybdenum	0.1 mg/L	CCR Rule Value	<0.01 U	<0.01 U	<0.01 U	<0.01 U
Radium 226	5.0 pCi/L	MCL	0.594 J	1.69 J	0.546 J	1.41 J
Radium 228						
Selenium	0.05 mg/L	MCL	<0.003 U	<0.003 U	<0.003 U	<0.003 U
Thallium	0.002 mg/L	MCL	<0.002 V1,U	<0.002 U	<0.002 U	<0.0020 U

\*All results listed in milligrams per liter (mg/L) unless otherwise noted by the Groundwater Protection Standard (GWPS).

CCR = Coal combustion residuals

MCL = Maximum Contaminant Level

ND = Not Detected at or above Method Detection Limit

pCi/L = picocuries per liter

J = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.

D = Results reported from dilution

D1 = Sample required dilution due to high concentration of target analyte

M1 = Matrix spike recovery was high; the method control sample recovery was acceptable.

M2 = Matrix spike recovery was low; the method control sample recovery was acceptable.

U = Target analyte was analyzed for, but was below detection limit

V1 = CCV recovery was above method acceptance limits. This target analyte not detected in the sample.



**WILSON LANDFILL - CCR ANALYTICAL SUMMARY  
MW-10D**

APPENDIX III CONSTITUENTS	GWPS	GWPS MCL/CCR Rule Value or Background	DATE				Characterization
			4/27/2022	9/27/2022	4/24/2023	10/2/2023	
Boron			3.16 D2	3.11 D1	2.62 D1,M3	2.65 D1	
Calcium			482 D1	548 D1	553 D1,M3	523 D1	
Chloride			145 D	195 D	36.2 D2	208 D	
Fluoride	4.0 mg/L	MCL	0.41	0.35	0.47	0.41	
Sulfate			1150 D	1920.0 D1	389 D2	2240 D	
pH (Field Measurement)			7.11	6.67	6.44	6.37	
Total Dissolved Solids			1070	2660	2510	2870	
<b>APPENDIX IV CONSTITUENTS</b>							
Antimony	0.006 mg/L	MCL	<0.005 U	<0.005 U	<0.005 U	<0.005 U	
Arsenic	0.0144 mg/L	Background	0.0029	0.0036	0.0025	0.0032	
Barium	2.0 mg/L	MCL	0.016	0.018	0.017	0.019	
Beryllium	0.004 mg/L	MCL	<0.0020 U	<0.0020 U,V1	<0.002 U	<0.0020 U	
Cadmium	0.005 mg/L	MCL	<0.0010 U	<0.0010 U	<0.001 U	<0.0010 U	
Chromium	0.1 mg/L	MCL	<0.0020 U	<0.0020 U	<0.002 U	<0.0020 U	
Cobalt	0.009 mg/L	Background	0.005	<0.0040 U	0.004	<0.0040 U	
Fluoride	4.0 mg/L	MCL	0.41	0.35	0.47	0.41	
Lead	0.015 mg/L	CCR Rule Value	<0.002 U	<0.002 U	<0.002 U	<0.002 U	
Lithium	0.040 mg/L	CCR Rule Value	0.07	0.07	0.06 J-,M2	0.09	
Mercury	0.002 mg/L	MCL	<0.0005 U	<0.0005 U	<0.000005 U	<0.000005 U	
Molybdenum	0.1 mg/L	CCR Rule Value	0.009 J	0.004 J	0.006 J	0.004 J	
Radium 226							
Radium 228	5.0 pCi/L	MCL	1.63	1.39 J	0.465 J	1.37 J	
Selenium	0.05 mg/L	MCL	<0.003 U	<0.003 U	<0.003 U	<0.003 U	
Thallium	0.002 mg/L	MCL	<0.0020 U	<0.0020 U	<0.002 U	<0.0020 U	

\*All results listed in milligrams per liter (mg/L) unless otherwise noted by the Groundwater Protection Standard (GWPS).

CCR = Coal combustion residuals

MCL = Maximum Contaminant Level

pCi/L = picocuries per liter

J = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.

J- =Qualified as estimated potential low bias during data review.

D = Results reported from dilution

D1 = Sample required dilution due to high concentration of target analyte

D2 = Sample required dilution due to matrix interference

M2 = Matrix spike recovery was low; the method control sample recovery was acceptable.

M3 = The accuracy of the spike recovery value is reduced since the analyte concentration in the sample is disproportionate to spike level. The method control sample recovery was acceptable.

U = Target analyte was analyzed for, but was below detection limit

V1 = CCV recovery was above method acceptance limits. This target analyte not detected in the sample.

**WILSON LANDFILL - CCR ANALYTICAL SUMMARY  
MW-111**

APPENDIX III CONSTITUENTS	GWPS	MCL/CCR Rule Value or Background	DATE				Characterization
			4/28/2022	9/30/2022	4/24/2023	10/2/2023	
Boron			0.23	0.22	0.23	0.21	
Calcium			627 D1	637 D1	552 D1	510 D1	
Chloride			3.8	3.7 M2,J-	<10.0 D2, U	3.3	
Fluoride	4.0 mg/L	MCL	<0.20 U	0.24 M2,J-	0.27	0.24	
Sulfate			1800 D,H2	2640 D,M2	399 D2	3210 D	
pH (Field Measurement)			6.43	6.59	7.24	6.24	
Total Dissolved Solids			304	3300	3220	3770	
<b>APPENDIX IV CONSTITUENTS</b>							
Antimony	0.006 mg/L	MCL	<0.005 U	<0.005 V1, U	<0.005 U	<0.005 U	
Arsenic	0.0144 mg/L	Background	0.0027	0.0026	0.0024	0.0024	
Barium	2.0 mg/L	MCL	0.021	0.019	0.018	0.019	
Beryllium	0.004 mg/L	MCL	<0.0020 U	<0.0020 U	<0.002 U	<0.0020 U	
Cadmium	0.005 mg/L	MCL	<0.0010 U	<0.0010 U	<0.001 U	<0.0010 U	
Chromium	0.1 mg/L	MCL	<0.0020 U	<0.0020 U	<0.002 U	<0.0020 U	
Cobalt	0.009 mg/L	Background	0.01100	0.011000	0.011	0.012	
Fluoride	4.0 mg/L	MCL	<0.20 U	0.24 M2,J-	0.27	0.24	
Lead	0.015 mg/L	CCR Rule Value	<0.002 U	<0.002 U	<0.002 U	<0.002 U	
Lithium	0.040 mg/L	CCR Rule Value	0.04	0.03	0.03	0.04	
Mercury	0.002 mg/L	MCL	<0.0005 U	<0.0005 UJ	<0.000005 U	<0.000005 U	
Molybdenum	0.1 mg/L	CCR Rule Value	0.003 J	0.003 J	0.003 J	0.003 J	
Radium 226							
Radium 228	5.0 pCi/L	MCL	1.51 J	1.65 J	0.913 J	1.18 J	
Selenium	0.05 mg/L	MCL	<0.003 U	<0.003 U	<0.003 U	<0.003 U	
Thallium	0.002 mg/L	MCL	0.0001 V1,U	0.0001 U	<0.002 U	<0.0020 U	

\*All results listed in milligrams per liter (mg/L) unless otherwise noted by the Groundwater Protection Standard (GWPS).

CCR = Coal combustion residuals

MCL = Maximum Contaminant Level

pCi/L = picocuries per liter

J = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.

J- = Qualified as estimated potential low bias during data review.

D = Results reported from dilution

D1 = Sample required dilution due to high concentration of target analyte

D2 = Sample required dilution due to matrix interference

H2 = Initial analysis within holding time. Reanalysis was past holding time.

M2 = Matrix spike recovery was low, the method control sample recovery was acceptable.

U = Target analyte was analyzed for, but was below detection limit

UJ = Nondetect result was qualified as estimated at the reporting limit during data review.

V1 = CCV recovery was above method acceptance limits. This target analyte not detected in the sample.

**WILSON LANDFILL - CCR ANALYTICAL SUMMARY  
MW-112**

APPENDIX III CONSTITUENTS	GWPS	MCL/CCR Rule Value or Background	DATE							
			4/28/2022	9/30/2022	4/24/2023	10/2/2023				
Boron			0.15	0.15	0.14	0.14				
Calcium			250 D1	283 D1	246 D1	243 D1				
Chloride			51.7	3.6 H2,J	<5.0 D2, U	3.3				
Fluoride	4.0 mg/L	MCL	<0.20 U	<0.20 U	<0.20 U	<0.20 U				
Sulfate			512 D	602 D	157 D2	748 D				
pH (Field Measurement)			6.35	6.82	6.19	6.28				
Total Dissolved Solids			1040 J-, H2	1180	1000	1270				
<b>APPENDIX IV CONSTITUENTS</b>										
Antimony	0.006 mg/L	MCL	<0.005 U	<0.005 U,V1	<0.005 U	<0.005 U				
Arsenic	0.0144 mg/L	Background	0.0013	0.0019	0.0015	0.0017				
Barium	2.0 mg/L	MCL	0.028	0.032	0.027	0.031				
Beryllium	0.004 mg/L	MCL	<0.0020 U	<0.0020 U,V1	<0.002 U	<0.0020 U				
Cadmium	0.005 mg/L	MCL	<0.0010 U	<0.0010 U	<0.001 U	<0.0010 U				
Chromium	0.1 mg/L	MCL	<0.0020 U	<0.0020 U	<0.002 U	<0.0020 U				
Cobalt	0.009 mg/L	Background	0.004	0.005	0.005	0.005				
Fluoride	4.0 mg/L	MCL	<0.20 U	<0.20 U	<0.20 U	<0.20 U				
Lead	0.015 mg/L	CCR Rule Value	<0.002 U	<0.002 U	<0.002 U	<0.002 U				
Lithium	0.040 mg/L	CCR Rule Value	0.01 J	0.01 V1,J	0.01 J	0.01 J				
Mercury	0.002 mg/L	MCL	<0.0005 U	<0.0005 U	<0.000005 U	<0.000005 Y1,U				
Molybdenum	0.1 mg/L	CCR Rule Value	0.002 J	0.002 J	0.002 J	0.002 J				
Radium 226	5.0 pCi/L	MCL	0.173 J	1.22 J	0.753 J	1.14 J				
Radium 228										
Selenium	0.05 mg/L	MCL	<0.003 U	<0.003 U	<0.003 U	<0.003 U				
Thallium	0.002 mg/L	MCL	<0.0020 V1,U	<0.0020 U	<0.002 U	<0.0020 U				

\* All results listed in milligrams per liter (mg/L) unless otherwise noted by the Groundwater Protection Standard (GWPS).  
CCR = Coal combustion residuals  
MCL = Maximum Contaminant Level  
pCi/L = picocuries per liter  
J = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.  
J- = Potential low bias  
D = Results reported from dilution  
D1 = Sample required dilution due to high concentration of target analyte  
H2 = Initial analysis within holding time. Reanalysis was past holding time.  
U = Target analyte was analyzed for, but was below detection limit  
V1 = CCV recovery was above method acceptance limits. This target analyte not detected in the sample.

WILSON LANDFILL - CCR ANALYTICAL SUMMARY  
MW-113

APPENDIX III CONSTITUENTS	GWPS	MCL/CCR Rule Value or Background	DATE							
			4/28/2022	9/28/2022	4/24/2023	10/2/2023				
Boron			<0.10 U	<0.10 U	<0.10 U	<0.10 U				
Calcium			206 D1	256 D1	219 D1	186 D1				
Chloride			35.0	37.6	12.3 D2	39.8				
Fluoride	4.0 mg/L	MCL	0.22	<0.20 U	<0.20 U	0.22				
Sulfate			557 D, M1	1070.0 D	228 D2	1190 D				
pH (Field Measurement)			6.17	6.62	7.25	6.32				
Total Dissolved Solids			1200	1660	1650	1780				
<b>APPENDIX IV</b>										
<b>CONSTITUENTS</b>										
Antimony	0.006 mg/L	MCL	0.002 J	<0.005 U	<0.005 U	<0.005 U				
Arsenic	0.0144 mg/L	Background	0.0116	0.0229	0.0278	0.0291				
Barium	2.0 mg/L	MCL	0.053	0.029	0.022	0.020				
Beryllium	0.004 mg/L	MCL	<0.0020 U	<0.0020 U,V1	<0.002 U	<0.002 U				
Cadmium	0.005 mg/L	MCL	<0.0010 U	<0.0010 U	<0.0010 U	<0.0010 U				
Chromium	0.1 mg/L	MCL	<0.0020 U	<0.0020 U	<0.002 U	<0.0020 U				
Cobalt	0.009 mg/L	Background	0.037	0.018	0.006	<0.004 U				
Fluoride	4.0 mg/L	MCL	0.22	<0.20 U	<0.20 U	0.22				
Lead	0.015 mg/L	CCR Rule Value	<0.002 U	<0.002 U	<0.002 U	<0.002 U				
Lithium	0.040 mg/L	CCR Rule Value	0.04	0.03	0.03	0.05				
Mercury	0.002 mg/L	MCL	<0.0005 U	<0.0005 U	<0.000005 UJ	<0.000005 M2,UJ				
Molybdenum	0.1 mg/L	CCR Rule Value	0.02	0.007 J	0.003 J	0.003 J				
Radium 226	5.0 pCi/L	MCL	0.976 J	0.969 J	1.60 J	2.89 J				
Radium 228	0.05 mg/L	MCL	<0.003 U	<0.003 U	<0.003 U	<0.003 U				
Selenium	0.002 mg/L	MCL	<0.02 V1,U	<0.02 U	<0.002 U	<0.0020 U				
Thallium										

\*All results listed in milligrams per liter (mg/L) unless otherwise noted by the Groundwater Protection Standard (GWPS).

CCR = Coal combustion residuals

MCL = Maximum Contaminant Level

pCi/L = picocuries per liter

J = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.

D = Results reported from dilution

D1 = Sample required dilution due to high concentration of target analyte

M1 = Matrix spike recovery was high; the method control sample recovery was acceptable.

M2 = Matrix spike recovery was low; the method control sample recovery was acceptable.

U = Target analyte was analyzed for, but was below detection limit

UJ = Nondetect result was qualified as estimated at the reporting limit during data review.

V1 = CCV recovery was above method acceptance limits. This target analyte not detected in the sample.



**WILSON LANDFILL - CCR ANALYTICAL SUMMARY**  
MW-114

APPENDIX III CONSTITUENTS	GWPS	GWPS MCL/CCR Rule Value or Background	DATE				Characterization
			4/28/2022	9/28/2022	4/24/2023	10/2/2023	
Boron			<0.10 U	<0.10 U	<0.10 M2, U	<0.10 U	
Calcium			115 D1	130 D1	106 D1, M3	115 D1	
Chloride			40.0	31.6	28.0 D2	32.1	
Fluoride	4.0 mg/L	MCL	0.22	0.22	0.25	0.23	
Sulfate			138 D	151.0	132 D2	162	
pH (Field Measurement)			6.69	6.71	7.83	5.55	
Total Dissolved Solids			1510	864	1150	632	
<b>APPENDIX IV CONSTITUENTS</b>							
Antimony	0.006 mg/L	MCL	<0.005 U	<0.005 U, V1	<0.005 U	<0.005 U	
Arsenic	0.0144 mg/L	Background	0.0025	0.0048	0.002	0.0031	
Barium	2.0 mg/L	MCL	0.067	0.062	0.053	0.070	
Beryllium	0.004 mg/L	MCL	<0.0020 U	<0.0020 U, V1	<0.002 U	<0.0020 U	
Cadmium	0.005 mg/L	MCL	<0.0010 U	<0.0010 U	<0.001 U	<0.0010 U	
Chromium	0.1 mg/L	MCL	<0.0020 U	<0.0020 U	<0.002 U	<0.0020 U	
Cobalt	0.009 mg/L	Background	<0.004 U	<0.004 U	<0.004 U	<0.004 U	
Fluoride	4.0 mg/L	MCL	0.22	0.22	0.25	0.23	
Lead	0.015 mg/L	CCR Rule Value	<0.002 U	<0.002 U	<0.002 U	<0.002 U	
Lithium	0.040 mg/L	CCR Rule Value	0.02	0.02	0.02 M1	0.02	
Mercury	0.002 mg/L	MCL	<0.0005 U	<0.0005 U	<0.000005 U	<0.000005 U	
Molybdenum	0.1 mg/L	CCR Rule Value	0.007 U	0.004 U	0.004 U	0.003 U	
Radium 226	5.0 pCi/L	MCL	1.86 J	1.22 J	2.04 J	3.17 J	
Radium 228							
Selenium	0.05 mg/L	MCL	<0.003 U	<0.003 U	<0.003 U	<0.003 U	
Thallium	0.002 mg/L	MCL	<0.002 U, V1, U	<0.002 U	<0.002 U	<0.0020 U	

\*All results listed in milligrams per liter (mg/L) unless otherwise noted by the Groundwater Protection Standard (GWPS).

CCR = Coal combustion residuals

MCL = Maximum Contaminant Level

pCi/L = picocuries per liter

J = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.

D = Results reported from dilution

D1 = Sample required dilution due to high concentration of target analyte

D2 = Sample required dilution due to matrix interference

M1 = Matrix spike recovery was high; the method control sample recovery was acceptable.

M2 = Matrix spike recovery was low; the method control sample recovery was acceptable.

M3 = The accuracy of the spike recovery value is reduced since the analyte concentration in the sample is disproportionate to spike level. The method control sample recovery was acceptable.

U = Target analyte was analyzed for, but was below detection limit

V1 = CCV recovery was above method acceptance limits. This target analyte not detected in the sample.

## **APPENDIX C - LABORATORY ANALYTICAL REPORTS**

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## Certificate of Analysis 3043158

Dawn Storckman  
Big Rivers Electric Corporation Wilson Station  
PO Box 24  
Henderson, KY 42419

Customer ID: 44-100168  
Report Printed: 01/05/2024 10:47

Project Name: MW-10 Wilson 092-00004

Workorder: 3043158

Dear Dawn Storckman

Enclosed are the analytical results for samples received by the laboratory 04/26/2023 14:00.

The results relate to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services LLC Kentucky - Madisonville

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



#460210 Madisonville, KY  
#460291 Pikeville, KY

Rob Whittington, Project Manager

*This page is included as part of the Analytical Report and must be retained as a permanent record thereof.*



**SAMPLE SUMMARY**

Lab ID	Client Sample ID/Alias	Matrix	Date Collected	Date Received	Sampled By
3043158-01	MW10/	Groundwater	04/26/2023 07:05	04/26/2023 14:00	Travis Sneed
3043158-02	Mercury Field Blank/	Groundwater	04/26/2023 07:05	04/26/2023 14:00	Travis Sneed
3043159-01	MW102/	Groundwater	04/25/2023 09:24	04/26/2023 14:00	Matt Morton
3043159-02	Mercury Field Blank/	Groundwater	04/25/2023 09:24	04/26/2023 14:00	Matt Morton
3043160-01	MW-114/	Groundwater	04/24/2023 13:48	04/24/2023 14:32	Travis Sneed
3043160-02	Mercury Field Blank/	Groundwater	04/24/2023 13:48	04/24/2023 14:32	Travis Sneed
3043161-01	MW105/	Groundwater	04/25/2023 07:48	04/26/2023 14:00	Matt Morton
3043162-01	MW-10D/	Groundwater	04/24/2023 13:35	04/24/2023 14:32	Travis Sneed
3043162-02	Mercury Field Blank/	Groundwater	04/24/2023 13:35	04/24/2023 14:32	Travis Sneed
3043163-01	MW110/	Groundwater	04/25/2023 08:25	04/26/2023 14:00	Travis Sneed
3043163-02	Mercury Field Blank/	Groundwater	04/25/2023 08:25	04/26/2023 14:00	Travis Sneed
3043164-01	MW-111/	Groundwater	04/24/2023 11:56	04/24/2023 14:32	Travis Sneed
3043164-02	Mercury Field Blank/	Groundwater	04/19/2023 00:00	04/24/2023 14:32	
3043165-01	MW-112/	Groundwater	04/24/2023 12:00	04/24/2023 14:32	Travis Sneed
3043165-02	Mercury Field Blank/	Groundwater	04/24/2023 12:00	04/24/2023 14:32	Travis Sneed
3043166-01	MW-113/	Groundwater	04/24/2023 10:15	04/24/2023 14:32	Travis Sneed
3043166-02	Mercury Field Blank/	Groundwater	04/24/2023 10:15	04/24/2023 14:32	
3043167-01	MW104/	Groundwater	04/25/2023 08:40	04/26/2023 14:00	Travis Sneed
3043167-02	Mercury Field Blank/	Groundwater	04/25/2023 08:40	04/26/2023 14:00	Travis Sneed
3043171-01	MW4D/	Groundwater	04/26/2023 10:10	04/26/2023 14:00	Travis Sneed
3043171-02	Mercury Field Blank/	Groundwater	04/26/2023 10:10	04/26/2023 14:00	Travis Sneed
3043172-01	MW5/	Groundwater	04/25/2023 11:20	04/26/2023 14:00	Travis Sneed
3043172-02	Mercury Field Blank/	Groundwater	04/25/2023 11:20	04/26/2023 14:00	Travis Sneed
3043173-01	MW6/	Groundwater	04/25/2023 13:00	04/26/2023 14:00	Travis Sneed
3043173-02	Mercury Field Blank/	Groundwater	04/25/2023 13:00	04/26/2023 14:00	Travis Sneed
3043174-01	MW7/	Groundwater	04/25/2023 13:52	04/26/2023 14:00	Matt Morton
3043174-02	Mercury Field Blank/	Groundwater	04/25/2023 13:52	04/26/2023 14:00	Matt Morton
3043175-01	MW8/	Groundwater	04/26/2023 08:04	04/26/2023 14:00	Matt Morton





Pace Analytical Services, LLC

P.O. Box 907

Madisonville, KY 42431

270.821.7375

[www.pacelabs.com](http://www.pacelabs.com)

### SAMPLE SUMMARY

Lab ID	Client Sample ID/Alias	Matrix	Date Collected	Date Received	Sampled By
3043175-02	Mercury Field Blank/	Groundwater	04/26/2023 08:04	04/26/2023 14:00	Matt Morton
3043176-01	Well Duplicate 1/	Groundwater	04/25/2023 14:30	04/26/2023 14:00	Travis Sneed
3043176-02	Mercury Field Blank/	Groundwater	04/25/2023 14:30	04/26/2023 14:00	Travis Sneed
3043177-01	Well Duplicate 2/	Groundwater	04/25/2023 08:44	04/26/2023 14:00	Travis Sneed
3043177-02	Mercury Field Blank/	Groundwater	04/25/2023 08:44	04/26/2023 14:00	Travis Sneed
3043773-01	Field Blank/	Water	04/25/2023 14:22	04/26/2023 14:00	Matt Morton
3043773-02	Mercury Field Blank/	Water	04/25/2023 14:22	04/26/2023 14:00	Matt Morton



**Pace Analytical Services, LLC**

P.O. Box 907

Madisonville, KY 42431

270.821.7375

[www.pacelabs.com](http://www.pacelabs.com)

<u>LabNumber</u>	<u>Measurement</u>	<u>Value</u>
3043158-01	Field Conductance	3600
	Field pH	5.98
	Field Temp (C)	17.98
3043159-01	Field Conductance	1240
	Field pH	6.84
	Field Temp (C)	15.92
3043160-01	Field Conductance	942
	Field pH	7.83
	Field Temp (C)	17.91
3043161-01	Field Conductance	1310
	Field pH	6.84
	Field Temp (C)	14.60
3043162-01	Field Conductance	3010
	Field pH	6.44
	Field Temp (C)	14.55
3043163-01	Field Conductance	472
	Field pH	6.71
	Field Temp (C)	16.29
3043164-01	Field Conductance	3650
	Field pH	7.24
	Field Temp (C)	17.10
3043165-01	Field Conductance	1440
	Field pH	6.19
	Field Temp (C)	15.35
3043166-01	Field Conductance	2200
	Field pH	7.25
	Field Temp (C)	17.20
3043167-01	Field Conductance	2110
	Field pH	6.81
	Field Temp (C)	15.47
3043171-01	Field Conductance	4560
	Field pH	6.46
	Field Temp (C)	17.16
3043172-01	Field Conductance	4190
	Field pH	6.47
	Field Temp (C)	17.28
3043173-01	Field Conductance	3110
	Field pH	6.45
	Field Temp (C)	17.65
3043174-01	Field Conductance	2780
	Field pH	6.55
	Field Temp (C)	17.65
3043175-01	Field Conductance	1730
	Field pH	6.41
	Field SWL	43.9
	Field Temp (C)	15.12
3043176-01	Field Conductance	3110
	Field pH	6.45
	Field Temp (C)	17.65
3043177-01	Field Conductance	472
	Field pH	6.71
	Field Temp (C)	16.29



**ANALYTICAL RESULTS**

Lab Sample ID: **3043158-01**  
 Description: **MW10**

Sample Collection Date Time: 04/26/2023 07:05  
 Sample Received Date Time: 04/26/2023 14:00

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:41	AKB
<b>Arsenic</b>	<b>0.0006</b>	J	mg/L	0.0010	0.0004	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:41	AKB
<b>Barium</b>	<b>0.009</b>		mg/L	0.004	0.001	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:41	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:41	AKB
<b>Boron</b>	<b>0.66</b>		mg/L	0.10	0.10	SW846 6010 B	04/27/2023 11:44	04/28/2023 14:09	MRWD
Cadmium	ND	u	mg/L	0.0010	0.0001	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:41	AKB
<b>Calcium</b>	<b>448</b>	D1	mg/L	40.0	13.0	SW846 6010 B	04/27/2023 11:44	04/28/2023 14:16	MRWD
Chromium	ND	u	mg/L	0.0020	0.0006	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:41	AKB
<b>Cobalt</b>	<b>0.116</b>		mg/L	0.004	0.004	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:41	AKB
Copper	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:41	AKB
<b>Iron</b>	<b>15.7</b>	D1	mg/L	1.00	0.500	SW846 6010 B	04/27/2023 11:44	04/28/2023 14:13	MRWD
Lead	ND	u	mg/L	0.002	0.0005	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:41	AKB
<b>Lithium</b>	<b>0.009</b>	J	mg/L	0.02	0.005	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:41	AKB
<b>Magnesium</b>	<b>254</b>	D1	mg/L	20.0	9.00	SW846 6010 B	04/27/2023 11:44	04/28/2023 14:16	MRWD
Molybdenum	ND	u	mg/L	0.01	0.002	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:41	AKB
<b>Nickel</b>	<b>0.044</b>		mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:41	AKB
<b>Potassium</b>	<b>3.21</b>		mg/L	0.50	0.22	SW846 6010 B	04/27/2023 11:44	04/28/2023 14:09	MRWD
Selenium	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:41	AKB
<b>Sodium</b>	<b>133</b>	D1	mg/L	26.0	10.0	SW846 6010 B	04/27/2023 11:44	04/28/2023 14:16	MRWD
Thallium	ND	u	mg/L	0.0020	0.0001	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:41	AKB
<b>Zinc</b>	<b>0.02</b>		mg/L	0.02	0.02	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:41	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	M2, u	ng/L	5.0	1.8	EPA 245.7 REV 2	04/28/2023 09:21	04/28/2023 13:06	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>245</b>		mg/L	4		2320 B-2011	04/28/2023 13:16	04/28/2023 13:16	DJK
Carbonate Alkalinity as CaCO3	ND	u	mg/L	4		2320 B-2011	04/28/2023 13:16	04/28/2023 13:16	DJK
<b>Total Alkalinity</b>	<b>245</b>		mg/L	4		2320 B-2011	04/28/2023 13:16	04/28/2023 13:16	DJK
<b>Chemical Oxygen Demand</b>	<b>33</b>		mg/L	13	8	HACH 8000	05/02/2023 13:06	05/03/2023 14:00	HMF
<b>Specific Conductance (Lab)</b>	<b>3370</b>		umhos/cm	1	1	2510 B-2011	04/27/2023 16:51	05/02/2023 14:35	AED
<b>Hardness as CaCO3</b>	<b>1600</b>	D	mg/L	5	5	2340 C (as HACH 8226)	04/28/2023 07:50	04/28/2023 07:50	CLL
<b>Total Dissolved Solids</b>	<b>3100</b>		mg/L	100	100	2540 C-2015	04/27/2023 12:37	04/28/2023 12:04	HAG
<b>Total Organic Carbon</b>	<b>1.3</b>		mg/L	0.5	0.4	5310 C-2014	05/03/2023 10:59	05/06/2023 18:33	HMF

**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
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**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>0.423</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 903.1</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>See Attached Subcontract Report</b>	<b>0.772</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>Radium</b>	<b>1.20</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>See Attached Subcontract Report</b>	<b>1.20</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>16.5</b>	<b>D2</b>	<b>mg/L</b>	<b>5.0</b>	<b>3.6</b>	<b>EPA 300.0 REV 2.1</b>	<b>05/05/2023 05:05</b>	<b>05/05/2023 05:05</b>	<b>CSC</b>
<b>Fluoride</b>	<b>ND</b>	<b>u</b>	<b>mg/L</b>	<b>0.20</b>		<b>EPA 300.0 REV 2.1</b>	<b>05/02/2023 19:56</b>	<b>05/02/2023 19:56</b>	<b>CLS3</b>
<b>Sulfate</b>	<b>536</b>	<b>D2</b>	<b>mg/L</b>	<b>10.0</b>	<b>10.0</b>	<b>EPA 300.0 REV 2.1</b>	<b>05/05/2023 05:05</b>	<b>05/05/2023 05:05</b>	<b>CSC</b>

**ANALYTICAL RESULTS**

Lab Sample ID: **3043158-02**  
 Description: **Mercury Field Blank**

Sample Collection Date Time: **04/26/2023 07:05**  
 Sample Received Date Time: **04/26/2023 14:00**

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Mercury</b>	<b>ND</b>	<b>u</b>	<b>ng/L</b>	<b>5.0</b>	<b>1.8</b>	<b>EPA 245.7 REV 2</b>	<b>04/28/2023 09:21</b>	<b>04/28/2023 13:57</b>	<b>TML</b>





**ANALYTICAL RESULTS**

Lab Sample ID: **3043159-01**  
 Description: **MW102**

Sample Collection Date Time: 04/25/2023 09:24  
 Sample Received Date Time: 04/26/2023 14:00

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:45	AKB
<b>Arsenic</b>	<b>0.0037</b>		mg/L	0.0010	0.0004	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:45	AKB
<b>Barium</b>	<b>0.046</b>		mg/L	0.004	0.001	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:45	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:45	AKB
Boron	ND	u	mg/L	0.10	0.10	SW846 6010 B	04/27/2023 11:44	04/28/2023 14:28	MRWD
Cadmium	ND	u	mg/L	0.0010	0.0001	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:45	AKB
<b>Calcium</b>	<b>84.9</b>	D1	mg/L	4.00	1.30	SW846 6010 B	04/27/2023 11:44	04/28/2023 14:32	MRWD
<b>Chromium</b>	<b>0.0006</b>	J	mg/L	0.0020	0.0006	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:45	AKB
Cobalt	ND	u	mg/L	0.004	0.004	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:45	AKB
<b>Copper</b>	<b>0.001</b>	J	mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:45	AKB
<b>Iron</b>	<b>4.35</b>		mg/L	0.100	0.050	SW846 6010 B	04/27/2023 11:44	04/28/2023 14:28	MRWD
Lead	ND	u	mg/L	0.002	0.0005	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:45	AKB
Lithium	ND	u	mg/L	0.02	0.005	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:45	AKB
<b>Magnesium</b>	<b>39.2</b>	D1	mg/L	2.00	0.900	SW846 6010 B	04/27/2023 11:44	04/28/2023 14:32	MRWD
Molybdenum	ND	u	mg/L	0.01	0.002	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:45	AKB
<b>Nickel</b>	<b>0.002</b>	J	mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:45	AKB
<b>Potassium</b>	<b>1.02</b>		mg/L	0.50	0.22	SW846 6010 B	04/27/2023 11:44	04/28/2023 14:28	MRWD
Selenium	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:45	AKB
<b>Sodium</b>	<b>137</b>	D1	mg/L	26.0	10.0	SW846 6010 B	04/27/2023 11:44	04/28/2023 14:35	MRWD
Thallium	ND	u	mg/L	0.0020	0.0001	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:45	AKB
Zinc	ND	u	mg/L	0.02	0.02	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:45	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	04/27/2023 08:48	04/27/2023 13:03	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>287</b>		mg/L	4		2320 B-2011	04/28/2023 13:21	04/28/2023 13:21	DJK
Carbonate Alkalinity as CaCO3	ND	u	mg/L	4		2320 B-2011	04/28/2023 13:21	04/28/2023 13:21	DJK
<b>Total Alkalinity</b>	<b>287</b>		mg/L	4		2320 B-2011	04/28/2023 13:21	04/28/2023 13:21	DJK
Chemical Oxygen Demand	ND	u	mg/L	13	8	HACH 8000	05/02/2023 13:06	05/03/2023 14:00	HMF
<b>Specific Conductance (Lab)</b>	<b>1210</b>		umhos/cm	1	1	2510 B-2011	04/27/2023 16:51	05/02/2023 14:35	AED
<b>Hardness as CaCO3</b>	<b>326</b>		mg/L	1	1	2340 C (as HACH 8226)	04/28/2023 07:50	04/28/2023 07:50	CLL
<b>Total Dissolved Solids</b>	<b>808</b>		mg/L	50	50	2540 C-2015	04/27/2023 12:37	04/28/2023 12:04	HAG
<b>Total Organic Carbon</b>	<b>1.3</b>		mg/L	0.5	0.4	5310 C-2014	05/03/2023 10:59	05/06/2023 18:54	HMF

**Conventional Chemistry Analysis**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Total Solids</b>	<b>0.0884</b>		%	0.00025		2540 B/G-2015	04/27/2023 13:16	04/27/2023 13:16	HAG



**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>0.140</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 903.1</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>See Attached Subcontract Report</b>	<b>0.173</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>See Attached Subcontract Report</b>	<b>0.313</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>Radium</b>	<b>0.313</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>14.8</b>	<b>D2</b>	<b>mg/L</b>	<b>5.0</b>	<b>3.6</b>	<b>EPA 300.0 REV 2.1</b>	<b>05/05/2023 05:33</b>	<b>05/05/2023 05:33</b>	<b>CSC</b>
<b>Fluoride</b>	<b>0.32</b>		<b>mg/L</b>	<b>0.20</b>		<b>EPA 300.0 REV 2.1</b>	<b>05/02/2023 20:50</b>	<b>05/02/2023 20:50</b>	<b>CLS3</b>
<b>Sulfate</b>	<b>150</b>	<b>D2</b>	<b>mg/L</b>	<b>10.0</b>	<b>10.0</b>	<b>EPA 300.0 REV 2.1</b>	<b>05/05/2023 05:33</b>	<b>05/05/2023 05:33</b>	<b>CSC</b>

**ANALYTICAL RESULTS**

Lab Sample ID: **3043159-02**  
 Description: **Mercury Field Blank**

Sample Collection Date Time: **04/25/2023 09:24**  
 Sample Received Date Time: **04/26/2023 14:00**

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Mercury</b>	<b>ND</b>	<b>u</b>	<b>ng/L</b>	<b>5.0</b>	<b>1.8</b>	<b>EPA 245.7 REV 2</b>	<b>04/27/2023 08:48</b>	<b>04/27/2023 14:05</b>	<b>TML</b>



**ANALYTICAL RESULTS**

Lab Sample ID: **3043160-01**

Description: **MW-114**

Sample Collection Date Time: 04/24/2023 13:48

Sample Received Date Time: 04/24/2023 14:32

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	04/25/2023 10:46	04/26/2023 16:50	AKB
<b>Arsenic</b>	<b>0.0020</b>		mg/L	0.0010	0.0004	SW846-6020 A	04/25/2023 10:46	04/26/2023 16:50	AKB
<b>Barium</b>	<b>0.053</b>		mg/L	0.004	0.001	SW846-6020 A	04/25/2023 10:46	04/26/2023 16:50	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	04/25/2023 10:46	04/26/2023 16:50	AKB
Boron	ND	M2, u	mg/L	0,10	0,10	SW846 6010 B	04/25/2023 10:46	04/26/2023 14:01	MRWD
Cadmium	ND	u	mg/L	0.0010	0.0001	SW846-6020 A	04/25/2023 10:46	04/26/2023 16:50	AKB
<b>Calcium</b>	<b>106</b>	D1, M3	mg/L	20.0	6.50	SW846 6010 B	04/25/2023 10:46	04/26/2023 14:17	MRWD
Chromium	ND	u	mg/L	0.0020	0.0006	SW846-6020 A	04/25/2023 10:46	04/26/2023 16:50	AKB
Cobalt	ND	u	mg/L	0.004	0.004	SW846-6020 A	04/25/2023 10:46	04/26/2023 16:50	AKB
Copper	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/25/2023 10:46	04/26/2023 16:50	AKB
<b>Iron</b>	<b>0.645</b>		mg/L	0.100	0.050	SW846 6010 B	04/25/2023 10:46	04/26/2023 14:01	MRWD
Lead	ND	u	mg/L	0.002	0.0005	SW846-6020 A	04/25/2023 10:46	04/26/2023 16:50	AKB
Lithium	<b>0.02</b>	M1	mg/L	0.02	0.005	SW846-6020 A	04/25/2023 10:46	04/26/2023 16:50	AKB
<b>Magnesium</b>	<b>28.8</b>	D1, M1	mg/L	2.00	0.900	SW846 6010 B	04/25/2023 10:46	04/26/2023 14:14	MRWD
<b>Molybdenum</b>	<b>0.004</b>	J	mg/L	0.01	0.002	SW846-6020 A	04/25/2023 10:46	04/26/2023 16:50	AKB
<b>Nickel</b>	<b>0.003</b>		mg/L	0.003	0.001	SW846-6020 A	04/25/2023 10:46	04/26/2023 16:50	AKB
<b>Potassium</b>	<b>1.65</b>	M1	mg/L	0.50	0.22	SW846 6010 B	04/25/2023 10:46	04/26/2023 14:01	MRWD
Selenium	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/25/2023 10:46	04/26/2023 16:50	AKB
<b>Sodium</b>	<b>71.7</b>	D1, M1	mg/L	2.60	1.00	SW846 6010 B	04/25/2023 10:46	04/26/2023 14:14	MRWD
Thallium	ND	u	mg/L	0.0020	0.0001	SW846-6020 A	04/25/2023 10:46	04/26/2023 16:50	AKB
Zinc	ND	u	mg/L	0.02	0.004	SW846-6020 A	04/25/2023 10:46	04/26/2023 16:50	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	04/26/2023 07:29	04/26/2023 11:18	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>318</b>	M3	mg/L	4		2320 B-2011	04/28/2023 13:26	04/28/2023 13:26	DJK
Carbonate Alkalinity as CaCO3	ND	M3, u	mg/L	4		2320 B-2011	04/28/2023 13:26	04/28/2023 13:26	DJK
<b>Total Alkalinity</b>	<b>318</b>	M3	mg/L	4		2320 B-2011	04/28/2023 13:26	04/28/2023 13:26	DJK
Chemical Oxygen Demand	ND	u	mg/L	13	8	HACH 8000	04/27/2023 11:53	04/28/2023 14:38	HMF
<b>Specific Conductance (Lab)</b>	<b>857</b>		umhos/cm	1	1	2510 B-2011	04/26/2023 08:54	04/26/2023 11:51	JEP
<b>Hardness as CaCO3</b>	<b>400</b>		mg/L	1	1	2340 C (as HACH 8226)	04/28/2023 07:50	04/28/2023 07:50	CLL
<b>Total Dissolved Solids</b>	<b>1150</b>		mg/L	250	250	2540 C-2015	04/26/2023 12:56	04/26/2023 12:56	HAG
<b>Total Organic Carbon</b>	<b>0.9</b>		mg/L	0.5	0.4	5310 C-2014	05/02/2023 12:58	05/03/2023 19:06	HMF



**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>0.065</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 903.1</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>See Attached Subcontract Report</b>	<b>1.97</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>Radium</b>	<b>2.04</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>See Attached Subcontract Report</b>	<b>2.04</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>28.0</b>	<b>D2</b>	<b>mg/L</b>	<b>5.0</b>	<b>3.6</b>	<b>EPA 300.0 REV 2.1</b>	<b>05/05/2023 06:00</b>	<b>05/05/2023 06:00</b>	<b>CSC</b>
<b>Fluoride</b>	<b>0.25</b>		<b>mg/L</b>	<b>0.20</b>		<b>EPA 300.0 REV 2.1</b>	<b>05/02/2023 21:45</b>	<b>05/02/2023 21:45</b>	<b>CLS3</b>
<b>Sulfate</b>	<b>132</b>	<b>D2</b>	<b>mg/L</b>	<b>10.0</b>	<b>10.0</b>	<b>EPA 300.0 REV 2.1</b>	<b>05/05/2023 06:00</b>	<b>05/05/2023 06:00</b>	<b>CSC</b>

**ANALYTICAL RESULTS**

Lab Sample ID: **3043160-02**  
 Description: **Mercury Field Blank**

Sample Collection Date Time: **04/24/2023 13:48**  
 Sample Received Date Time: **04/24/2023 14:32**

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Mercury</b>	<b>ND</b>	<b>u</b>	<b>ng/L</b>	<b>5.0</b>	<b>1.8</b>	<b>EPA 245.7 REV 2</b>	<b>04/26/2023 07:29</b>	<b>04/26/2023 12:03</b>	<b>TML</b>





**ANALYTICAL RESULTS**

Lab Sample ID: **3043161-01**  
 Description: **MW105**

Sample Collection Date Time: **04/25/2023 07:48**  
 Sample Received Date Time: **04/26/2023 14:00**

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:49	AKB
<b>Arsenic</b>	<b>0.0008</b>	J	mg/L	0.0010	0.0004	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:49	AKB
<b>Barium</b>	<b>0.025</b>		mg/L	0.004	0.001	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:49	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:49	AKB
Boron	ND	u	mg/L	0.10	0.10	SW846 6010 B	04/27/2023 11:44	04/28/2023 14:38	MRWD
Cadmium	ND	u	mg/L	0.0010	0.0001	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:49	AKB
<b>Calcium</b>	<b>196</b>	D1	mg/L	40.0	13.0	SW846 6010 B	04/27/2023 11:44	04/28/2023 14:44	MRWD
Chromium	ND	u	mg/L	0.0020	0.0006	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:49	AKB
Cobalt	ND	u	mg/L	0.004	0.004	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:49	AKB
<b>Copper</b>	<b>0.005</b>		mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:49	AKB
<b>Iron</b>	<b>1.39</b>		mg/L	0.100	0.050	SW846 6010 B	04/27/2023 11:44	04/28/2023 14:38	MRWD
Lead	ND	u	mg/L	0.002	0.0005	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:49	AKB
<b>Lithium</b>	<b>0.03</b>		mg/L	0.02	0.005	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:49	AKB
<b>Magnesium</b>	<b>56.6</b>	D1	mg/L	2.00	0.900	SW846 6010 B	04/27/2023 11:44	04/28/2023 14:41	MRWD
Molybdenum	ND	u	mg/L	0.01	0.002	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:49	AKB
<b>Nickel</b>	<b>0.003</b>		mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:49	AKB
<b>Potassium</b>	<b>1.83</b>		mg/L	0.50	0.22	SW846 6010 B	04/27/2023 11:44	04/28/2023 14:38	MRWD
Selenium	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:49	AKB
<b>Sodium</b>	<b>39.8</b>	D1	mg/L	2.60	1.00	SW846 6010 B	04/27/2023 11:44	04/28/2023 14:41	MRWD
Thallium	ND	u	mg/L	0.0020	0.0001	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:49	AKB
<b>Zinc</b>	<b>0.02</b>		mg/L	0.02	0.02	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:49	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	04/27/2023 08:48	04/27/2023 13:09	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>401</b>		mg/L	4		2320 B-2011	04/28/2023 13:32	04/28/2023 13:32	DJK
Carbonate Alkalinity as CaCO3	ND	u	mg/L	4		2320 B-2011	04/28/2023 13:32	04/28/2023 13:32	DJK
<b>Total Alkalinity</b>	<b>401</b>		mg/L	4		2320 B-2011	04/28/2023 13:32	04/28/2023 13:32	DJK
Chemical Oxygen Demand	ND	u	mg/L	13	8	HACH 8000	05/02/2023 13:06	05/03/2023 14:00	HMF
<b>Specific Conductance (Lab)</b>	<b>1300</b>		umhos/cm	1	1	2510 B-2011	04/27/2023 16:51	05/02/2023 14:35	AED
<b>Hardness as CaCO3</b>	<b>660</b>		mg/L	1	1	2340 C (as HACH 8226)	04/28/2023 07:50	04/28/2023 07:50	CLL
<b>Total Dissolved Solids</b>	<b>1440</b>		mg/L	250	250	2540 C-2015	04/27/2023 12:37	04/28/2023 12:04	HAG
<b>Total Organic Carbon</b>	<b>1.0</b>		mg/L	0.5	0.4	5310 C-2014	05/03/2023 10:59	05/06/2023 19:15	HMF

**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
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**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>1.10</b>	_Sub	pCi/L			EPA 903.1	05/22/2023 14:16	05/22/2023 14:33	RCW
<b>See Attached Subcontract Report</b>	<b>1.39</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	05/22/2023 14:16	05/22/2023 14:33	RCW
<b>Radium</b>	<b>2.49</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	05/22/2023 14:16	05/22/2023 14:33	RCW
<b>See Attached Subcontract Report</b>	<b>2.49</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	05/22/2023 14:16	05/22/2023 14:33	RCW

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>11.2</b>		mg/L	0.5	0.4	EPA 300.0 REV 2.1	05/02/2023 19:28	05/02/2023 19:28	CLS3
<b>Fluoride</b>	<b>0.20</b>		mg/L	0.20		EPA 300.0 REV 2.1	05/02/2023 19:28	05/02/2023 19:28	CLS3
<b>Sulfate</b>	<b>769</b>	D	mg/L	10.0	10.0	EPA 300.0 REV 2.1	05/02/2023 19:56	05/02/2023 19:56	CLS3



**ANALYTICAL RESULTS**

Lab Sample ID: **3043162-01**  
 Description: **MW-10D**

Sample Collection Date Time: **04/24/2023 13:35**  
 Sample Received Date Time: **04/24/2023 14:32**

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:20	AKB
<b>Arsenic</b>	<b>0.0025</b>		mg/L	0.0010	0.0004	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:20	AKB
<b>Barium</b>	<b>0.017</b>		mg/L	0.004	0.001	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:20	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:20	AKB
<b>Boron</b>	<b>2.62</b>	D1, M3	mg/L	1.00	1.00	SW846 6010 B	04/26/2023 08:19	04/27/2023 15:06	MRWD
Cadmium	ND	u	mg/L	0.0010	0.0001	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:20	AKB
<b>Calcium</b>	<b>553</b>	D1, M3	mg/L	40.0	13.0	SW846 6010 B	04/26/2023 08:19	04/27/2023 15:09	MRWD
Chromium	ND	u	mg/L	0.0020	0.0006	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:20	AKB
<b>Cobalt</b>	<b>0.004</b>		mg/L	0.004	0.004	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:20	AKB
Copper	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:20	AKB
<b>Iron</b>	<b>12.5</b>	D1	mg/L	1.00	0.500	SW846 6010 B	04/26/2023 08:19	04/27/2023 15:06	MRWD
Lead	ND	u	mg/L	0.002	0.0005	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:20	AKB
<b>Lithium</b>	<b>0.06</b>	M2	mg/L	0.02	0.005	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:20	AKB
<b>Magnesium</b>	<b>120</b>	D1, M3	mg/L	20.0	9.00	SW846 6010 B	04/26/2023 08:19	04/27/2023 15:09	MRWD
<b>Molybdenum</b>	<b>0.006</b>	J	mg/L	0.01	0.002	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:20	AKB
<b>Nickel</b>	<b>0.009</b>		mg/L	0.003	0.001	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:20	AKB
<b>Potassium</b>	<b>10.6</b>	D1	mg/L	5.00	2.20	SW846 6010 B	04/26/2023 08:19	04/27/2023 15:06	MRWD
Selenium	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:20	AKB
<b>Sodium</b>	<b>80.1</b>	D1, M3	mg/L	2.60	1.00	SW846 6010 B	04/26/2023 08:19	04/27/2023 15:06	MRWD
Thallium	ND	u	mg/L	0.0020	0.0001	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:20	AKB
<b>Zinc</b>	<b>0.004</b>	J	mg/L	0.02	0.004	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:20	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	04/26/2023 07:29	04/26/2023 11:24	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>194</b>		mg/L	4		2320 B-2011	04/28/2023 13:39	04/28/2023 13:39	DJK
Carbonate Alkalinity as CaCO3	ND	u	mg/L	4		2320 B-2011	04/28/2023 13:39	04/28/2023 13:39	DJK
<b>Total Alkalinity</b>	<b>194</b>		mg/L	4		2320 B-2011	04/28/2023 13:39	04/28/2023 13:39	DJK
<b>Chemical Oxygen Demand</b>	<b>23</b>		mg/L	13	8	HACH 8000	04/27/2023 11:53	04/28/2023 14:38	HMF
<b>Specific Conductance (Lab)</b>	<b>4300</b>	D	umhos/cm	10	10	2510 B-2011	04/26/2023 08:54	04/26/2023 11:51	JEP
<b>Hardness as CaCO3</b>	<b>1870</b>	D	mg/L	5	5	2340 C (as HACH 8226)	04/28/2023 07:50	04/28/2023 07:50	CLL
<b>Total Dissolved Solids</b>	<b>2510</b>		mg/L	100	100	2540 C-2015	04/26/2023 12:56	04/26/2023 12:56	HAG
<b>Total Organic Carbon</b>	<b>0.9</b>		mg/L	0.5	0.4	5310 C-2014	05/02/2023 12:58	05/03/2023 19:27	HMF



**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
See Attached Subcontract Report	0.00	_Sub	pCi/L			EPA 903.1	05/22/2023 14:16	05/22/2023 14:33	RCW
<b>See Attached Subcontract Report</b>	<b>0.465</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	05/22/2023 14:16	05/22/2023 14:33	RCW
<b>Radium</b>	<b>0.465</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	05/22/2023 14:16	05/22/2023 14:33	RCW
<b>See Attached Subcontract Report</b>	<b>0.465</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	05/22/2023 14:16	05/22/2023 14:33	RCW

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>36.2</b>	D2	mg/L	5.0	3.6	EPA 300.0 REV 2.1	05/05/2023 06:27	05/05/2023 06:27	CSC
<b>Fluoride</b>	<b>0.47</b>		mg/L	0.20		EPA 300.0 REV 2.1	05/02/2023 22:12	05/02/2023 22:12	CLS3
<b>Sulfate</b>	<b>389</b>	D2	mg/L	10.0	10.0	EPA 300.0 REV 2.1	05/05/2023 06:27	05/05/2023 06:27	CSC

**ANALYTICAL RESULTS**

Lab Sample ID: **3043162-02**

Description: **Mercury Field Blank**

Sample Collection Date Time: 04/24/2023 13:35

Sample Received Date Time: 04/24/2023 14:32

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	04/26/2023 07:29	04/26/2023 12:09	TML





**ANALYTICAL RESULTS**

Lab Sample ID: **3043163-01**  
 Description: **MW110**

Sample Collection Date Time: **04/25/2023 08:25**  
 Sample Received Date Time: **04/26/2023 14:00**

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:52	AKB
<b>Arsenic</b>	<b>0.0023</b>		mg/L	0.0010	0.0004	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:52	AKB
<b>Barium</b>	<b>0.057</b>		mg/L	0.004	0.001	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:52	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:52	AKB
Boron	ND	u	mg/L	0.10	0.10	SW846 6010 B	04/27/2023 11:44	04/28/2023 14:47	MRWD
Cadmium	ND	u	mg/L	0.0010	0.0001	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:52	AKB
<b>Calcium</b>	<b>37.7</b>	D1	mg/L	4.00	1.30	SW846 6010 B	04/27/2023 11:44	04/28/2023 14:51	MRWD
Chromium	ND	u	mg/L	0.0020	0.0006	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:52	AKB
Cobalt	ND	u	mg/L	0.004	0.004	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:52	AKB
Copper	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:52	AKB
<b>Iron</b>	<b>4.86</b>		mg/L	0.100	0.050	SW846 6010 B	04/27/2023 11:44	04/28/2023 14:47	MRWD
Lead	ND	u	mg/L	0.002	0.0005	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:52	AKB
Lithium	ND	u	mg/L	0.02	0.005	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:52	AKB
<b>Magnesium</b>	<b>18.8</b>	D1	mg/L	2.00	0.900	SW846 6010 B	04/27/2023 11:44	04/28/2023 14:51	MRWD
Molybdenum	ND	u	mg/L	0.01	0.002	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:52	AKB
Nickel	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:52	AKB
<b>Potassium</b>	<b>0.54</b>		mg/L	0.50	0.22	SW846 6010 B	04/27/2023 11:44	04/28/2023 14:47	MRWD
Selenium	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:52	AKB
<b>Sodium</b>	<b>27.2</b>	D1	mg/L	2.60	1.00	SW846 6010 B	04/27/2023 11:44	04/28/2023 14:51	MRWD
Thallium	ND	u	mg/L	0.0020	0.0001	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:52	AKB
Zinc	ND	u	mg/L	0.02	0.02	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:52	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	04/27/2023 08:48	04/27/2023 13:14	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>149</b>		mg/L	4		2320 B-2011	04/28/2023 13:43	04/28/2023 13:43	DJK
Carbonate Alkalinity as CaCO3	ND	u	mg/L	4		2320 B-2011	04/28/2023 13:43	04/28/2023 13:43	DJK
<b>Total Alkalinity</b>	<b>149</b>		mg/L	4		2320 B-2011	04/28/2023 13:43	04/28/2023 13:43	DJK
<b>Chemical Oxygen Demand</b>	<b>8</b>	J	mg/L	13	8	HACH 8000	05/02/2023 13:06	05/03/2023 14:00	HMF
<b>Specific Conductance (Lab)</b>	<b>451</b>		umhos/cm	1	1	2510 B-2011	04/27/2023 16:51	05/02/2023 14:35	AED
<b>Hardness as CaCO3</b>	<b>128</b>		mg/L	1	1	2340 C (as HACH 8226)	04/28/2023 07:50	04/28/2023 07:50	CLL
<b>Total Dissolved Solids</b>	<b>336</b>		mg/L	100	100	2540 C-2015	04/27/2023 12:37	04/28/2023 12:04	HAG
<b>Total Organic Carbon</b>	<b>1.7</b>		mg/L	0.5	0.4	5310 C-2014	05/03/2023 11:02	05/04/2023 05:18	HMF

**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
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**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>0.256</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 903.1</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>See Attached Subcontract Report</b>	<b>0.290</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>Radium</b>	<b>0.546</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>See Attached Subcontract Report</b>	<b>0.546</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>11.3</b>		<b>mg/L</b>	<b>0.5</b>	<b>0.4</b>	<b>EPA 300.0 REV 2.1</b>	<b>05/02/2023 20:23</b>	<b>05/02/2023 20:23</b>	<b>CLS3</b>
<b>Fluoride</b>	<b>0.27</b>		<b>mg/L</b>	<b>0.20</b>		<b>EPA 300.0 REV 2.1</b>	<b>05/02/2023 20:23</b>	<b>05/02/2023 20:23</b>	<b>CLS3</b>
<b>Sulfate</b>	<b>77.7</b>		<b>mg/L</b>	<b>1.0</b>	<b>1.0</b>	<b>EPA 300.0 REV 2.1</b>	<b>05/02/2023 20:23</b>	<b>05/02/2023 20:23</b>	<b>CLS3</b>

**ANALYTICAL RESULTS**

Lab Sample ID: **3043163-02**  
 Description: **Mercury Field Blank**

Sample Collection Date Time: **04/25/2023 08:25**  
 Sample Received Date Time: **04/26/2023 14:00**

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Mercury</b>	<b>ND</b>	<b>u</b>	<b>ng/L</b>	<b>5.0</b>	<b>1.8</b>	<b>EPA 245.7 REV 2</b>	<b>04/27/2023 08:48</b>	<b>04/27/2023 14:11</b>	<b>TML</b>



**ANALYTICAL RESULTS**

Lab Sample ID: **3043164-01**  
 Description: **MW-111**

Sample Collection Date Time: **04/24/2023 11:56**  
 Sample Received Date Time: **04/24/2023 14:32**

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:22	AKB
<b>Arsenic</b>	<b>0.0024</b>		mg/L	0.0010	0.0004	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:22	AKB
<b>Barium</b>	<b>0.018</b>		mg/L	0.004	0.001	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:22	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:22	AKB
<b>Boron</b>	<b>0.23</b>		mg/L	0.10	0.10	SW846 6010 B	04/26/2023 08:19	04/27/2023 15:12	MRWD
Cadmium	ND	u	mg/L	0.0010	0.0001	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:22	AKB
<b>Calcium</b>	<b>552</b>	D1	mg/L	40.0	13.0	SW846 6010 B	04/26/2023 08:19	04/27/2023 15:28	MRWD
Chromium	ND	u	mg/L	0.0020	0.0006	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:22	AKB
<b>Cobalt</b>	<b>0.011</b>		mg/L	0.004	0.004	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:22	AKB
Copper	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:22	AKB
<b>Iron</b>	<b>9.57</b>		mg/L	0.100	0.050	SW846 6010 B	04/26/2023 08:19	04/27/2023 15:12	MRWD
Lead	ND	u	mg/L	0.002	0.0005	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:22	AKB
<b>Lithium</b>	<b>0.03</b>		mg/L	0.02	0.005	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:22	AKB
<b>Magnesium</b>	<b>270</b>	D1	mg/L	20.0	9.00	SW846 6010 B	04/26/2023 08:19	04/27/2023 15:28	MRWD
<b>Molybdenum</b>	<b>0.003</b>	J	mg/L	0.01	0.002	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:22	AKB
<b>Nickel</b>	<b>0.012</b>		mg/L	0.003	0.001	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:22	AKB
<b>Potassium</b>	<b>6.99</b>		mg/L	0.50	0.22	SW846 6010 B	04/26/2023 08:19	04/27/2023 15:12	MRWD
Selenium	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:22	AKB
<b>Sodium</b>	<b>76.7</b>	D1	mg/L	2.60	1.00	SW846 6010 B	04/26/2023 08:19	04/27/2023 15:25	MRWD
Thallium	ND	u	mg/L	0.0020	0.0001	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:22	AKB
<b>Zinc</b>	<b>0.004</b>	J	mg/L	0.02	0.004	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:22	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	04/26/2023 07:29	04/26/2023 11:29	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>608</b>		mg/L	4		2320 B-2011	04/28/2023 13:47	04/28/2023 13:47	DJK
Carbonate Alkalinity as CaCO3	ND	u	mg/L	4		2320 B-2011	04/28/2023 13:47	04/28/2023 13:47	DJK
<b>Total Alkalinity</b>	<b>608</b>		mg/L	4		2320 B-2011	04/28/2023 13:47	04/28/2023 13:47	DJK
<b>Chemical Oxygen Demand</b>	<b>30</b>		mg/L	13	8	HACH 8000	04/27/2023 11:53	04/28/2023 14:38	HMF
<b>Specific Conductance (Lab)</b>	<b>4960</b>	D	umhos/cm	10	10	2510 B-2011	04/26/2023 08:54	04/26/2023 11:51	JEP
<b>Hardness as CaCO3</b>	<b>2170</b>	D	mg/L	5	5	2340 C (as HACH 8226)	04/28/2023 07:50	04/28/2023 07:50	CLL
<b>Total Dissolved Solids</b>	<b>3220</b>		mg/L	100	100	2540 C-2015	04/26/2023 12:56	04/26/2023 12:56	HAG
<b>Total Organic Carbon</b>	<b>2.7</b>		mg/L	0.5	0.4	5310 C-2014	05/02/2023 12:58	05/03/2023 19:48	HMF

**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
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**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>0.119</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 903.1</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>See Attached Subcontract Report</b>	<b>0.794</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>Radium</b>	<b>0.913</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>See Attached Subcontract Report</b>	<b>0.913</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>ND</b>	<b>D2, U</b>	<b>mg/L</b>	<b>10.0</b>	<b>7.2</b>	<b>EPA 300.0 REV 2.1</b>	<b>05/05/2023 06:55</b>	<b>05/05/2023 06:55</b>	<b>CSC</b>
<b>Fluoride</b>	<b>0.27</b>		<b>mg/L</b>	<b>0.20</b>		<b>EPA 300.0 REV 2.1</b>	<b>05/02/2023 23:07</b>	<b>05/02/2023 23:07</b>	<b>CLS3</b>
<b>Sulfate</b>	<b>399</b>	<b>D2</b>	<b>mg/L</b>	<b>20.0</b>	<b>20.0</b>	<b>EPA 300.0 REV 2.1</b>	<b>05/05/2023 06:55</b>	<b>05/05/2023 06:55</b>	<b>CSC</b>

**ANALYTICAL RESULTS**

Lab Sample ID: **3043164-02**  
 Description: **Mercury Field Blank**

Sample Collection Date Time: **04/19/2023 00:00**  
 Sample Received Date Time: **04/24/2023 14:32**

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Mercury</b>	<b>ND</b>	<b>u</b>	<b>ng/L</b>	<b>5.0</b>	<b>1.8</b>	<b>EPA 245.7 REV 2</b>	<b>04/26/2023 07:29</b>	<b>04/26/2023 12:14</b>	<b>TML</b>





**ANALYTICAL RESULTS**

Lab Sample ID: **3043165-01**  
 Description: **MW-112**

Sample Collection Date Time: **04/24/2023 12:00**  
 Sample Received Date Time: **04/24/2023 14:32**

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:25	AKB
<b>Arsenic</b>	<b>0.0015</b>		mg/L	0.0010	0.0004	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:25	AKB
<b>Barium</b>	<b>0.027</b>		mg/L	0.004	0.001	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:25	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:25	AKB
<b>Boron</b>	<b>0.14</b>		mg/L	0.10	0.10	SW846 6010 B	04/26/2023 08:19	04/27/2023 15:31	MRWD
Cadmium	ND	u	mg/L	0.0010	0.0001	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:25	AKB
<b>Calcium</b>	<b>246</b>	D1	mg/L	40.0	13.0	SW846 6010 B	04/26/2023 08:19	04/27/2023 15:37	MRWD
Chromium	ND	u	mg/L	0.0020	0.0006	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:25	AKB
<b>Cobalt</b>	<b>0.005</b>		mg/L	0.004	0.004	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:25	AKB
Copper	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:25	AKB
<b>Iron</b>	<b>1.79</b>		mg/L	0.100	0.050	SW846 6010 B	04/26/2023 08:19	04/27/2023 15:31	MRWD
Lead	ND	u	mg/L	0.002	0.0005	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:25	AKB
<b>Lithium</b>	<b>0.01</b>	J	mg/L	0.02	0.005	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:25	AKB
<b>Magnesium</b>	<b>66.6</b>	D1	mg/L	2.00	0.900	SW846 6010 B	04/26/2023 08:19	04/27/2023 15:34	MRWD
<b>Molybdenum</b>	<b>0.002</b>	J	mg/L	0.01	0.002	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:25	AKB
<b>Nickel</b>	<b>0.007</b>		mg/L	0.003	0.001	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:25	AKB
<b>Potassium</b>	<b>3.90</b>		mg/L	0.50	0.22	SW846 6010 B	04/26/2023 08:19	04/27/2023 15:31	MRWD
Selenium	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:25	AKB
<b>Sodium</b>	<b>13.7</b>	D1	mg/L	2.60	1.00	SW846 6010 B	04/26/2023 08:19	04/27/2023 15:34	MRWD
Thallium	ND	u	mg/L	0.0020	0.0001	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:25	AKB
<b>Zinc</b>	<b>0.004</b>	J	mg/L	0.02	0.004	SW846-6020 A	04/26/2023 08:19	04/27/2023 12:25	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	04/26/2023 07:29	04/26/2023 11:35	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>365</b>		mg/L	4		2320 B-2011	04/28/2023 13:56	04/28/2023 13:56	DJK
Carbonate Alkalinity as CaCO3	ND	u	mg/L	4		2320 B-2011	04/28/2023 13:56	04/28/2023 13:56	DJK
<b>Total Alkalinity</b>	<b>365</b>		mg/L	4		2320 B-2011	04/28/2023 13:56	04/28/2023 13:56	DJK
<b>Chemical Oxygen Demand</b>	<b>13</b>		mg/L	13	8	HACH 8000	04/27/2023 11:53	04/28/2023 14:38	HMF
<b>Specific Conductance (Lab)</b>	<b>1460</b>		umhos/cm	1	1	2510 B-2011	04/26/2023 08:54	04/26/2023 11:51	JEP
<b>Hardness as CaCO3</b>	<b>812</b>	D	mg/L	2	2	2340 C (as HACH 8226)	04/28/2023 07:50	04/28/2023 07:50	CLL
<b>Total Dissolved Solids</b>	<b>1000</b>		mg/L	250	250	2540 C-2015	04/26/2023 12:56	04/26/2023 12:56	HAG
<b>Total Organic Carbon</b>	<b>2.8</b>		mg/L	0.5	0.4	5310 C-2014	05/02/2023 12:58	05/03/2023 20:10	HMF

**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
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**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>0.206</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 903.1</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>See Attached Subcontract Report</b>	<b>0.547</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>Radium</b>	<b>0.753</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>See Attached Subcontract Report</b>	<b>0.753</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Chloride	ND	D2, u	mg/L	5.0	3.6	EPA 300.0 REV 2.1	05/05/2023 07:22	05/05/2023 07:22	CSC
Fluoride	ND	u	mg/L	0.20		EPA 300.0 REV 2.1	05/03/2023 00:57	05/03/2023 00:57	CLS3
Sulfate	157	D2	mg/L	10.0	10.0	EPA 300.0 REV 2.1	05/05/2023 07:22	05/05/2023 07:22	CSC

**ANALYTICAL RESULTS**

Lab Sample ID: **3043165-02**  
 Description: **Mercury Field Blank**

Sample Collection Date Time: **04/24/2023 12:00**  
 Sample Received Date Time: **04/24/2023 14:32**

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	04/26/2023 07:29	04/26/2023 12:20	TML



**ANALYTICAL RESULTS**

Lab Sample ID: **3043166-01**  
 Description: **MW-113**

Sample Collection Date Time: 04/24/2023 10:15  
 Sample Received Date Time: 04/24/2023 14:32

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	04/25/2023 10:46	04/26/2023 17:06	AKB
<b>Arsenic</b>	<b>0.0278</b>		mg/L	0.0010	0.0004	SW846-6020 A	04/25/2023 10:46	04/26/2023 17:06	AKB
<b>Barium</b>	<b>0.022</b>		mg/L	0.004	0.001	SW846-6020 A	04/25/2023 10:46	04/26/2023 17:06	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	04/25/2023 10:46	04/26/2023 17:06	AKB
Boron	ND	u	mg/L	0.10	0.10	SW846 6010 B	04/25/2023 10:46	04/26/2023 14:20	MRWD
Cadmium	ND	u	mg/L	0.0010	0.0001	SW846-6020 A	04/25/2023 10:46	04/26/2023 17:06	AKB
<b>Calcium</b>	<b>219</b>	D1	mg/L	20.0	6.50	SW846 6010 B	04/25/2023 10:46	04/26/2023 14:26	MRWD
Chromium	ND	u	mg/L	0.0020	0.0006	SW846-6020 A	04/25/2023 10:46	04/26/2023 17:06	AKB
<b>Cobalt</b>	<b>0.006</b>		mg/L	0.004	0.004	SW846-6020 A	04/25/2023 10:46	04/26/2023 17:06	AKB
Copper	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/25/2023 10:46	04/26/2023 17:06	AKB
<b>Iron</b>	<b>9.17</b>		mg/L	0.100	0.050	SW846 6010 B	04/25/2023 10:46	04/26/2023 14:20	MRWD
Lead	ND	u	mg/L	0.002	0.0005	SW846-6020 A	04/25/2023 10:46	04/26/2023 17:06	AKB
<b>Lithium</b>	<b>0.03</b>		mg/L	0.02	0.005	SW846-6020 A	04/25/2023 10:46	04/26/2023 17:06	AKB
<b>Magnesium</b>	<b>122</b>	D1	mg/L	10.0	4.50	SW846 6010 B	04/25/2023 10:46	04/26/2023 14:26	MRWD
<b>Molybdenum</b>	<b>0.003</b>	J	mg/L	0.01	0.002	SW846-6020 A	04/25/2023 10:46	04/26/2023 17:06	AKB
<b>Nickel</b>	<b>0.016</b>		mg/L	0.003	0.001	SW846-6020 A	04/25/2023 10:46	04/26/2023 17:06	AKB
<b>Potassium</b>	<b>2.52</b>		mg/L	0.50	0.22	SW846 6010 B	04/25/2023 10:46	04/26/2023 14:20	MRWD
Selenium	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/25/2023 10:46	04/26/2023 17:06	AKB
<b>Sodium</b>	<b>132</b>	D1	mg/L	13.0	5.00	SW846 6010 B	04/25/2023 10:46	04/26/2023 14:26	MRWD
Thallium	ND	u	mg/L	0.0020	0.0001	SW846-6020 A	04/25/2023 10:46	04/26/2023 17:06	AKB
<b>Zinc</b>	<b>0.005</b>	J	mg/L	0.02	0.004	SW846-6020 A	04/25/2023 10:46	04/26/2023 17:06	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	M2, u	ng/L	5.0	1.8	EPA 245.7 REV 2	04/26/2023 07:29	04/26/2023 11:40	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>430</b>		mg/L	4		2320 B-2011	04/28/2023 14:02	04/28/2023 14:02	DJK
Carbonate Alkalinity as CaCO3	ND	u	mg/L	4		2320 B-2011	04/28/2023 14:02	04/28/2023 14:02	DJK
<b>Total Alkalinity</b>	<b>430</b>		mg/L	4		2320 B-2011	04/28/2023 14:02	04/28/2023 14:02	DJK
<b>Chemical Oxygen Demand</b>	<b>14</b>	Y1	mg/L	13	8	HACH 8000	04/27/2023 11:57	04/28/2023 14:44	HMF
<b>Specific Conductance (Lab)</b>	<b>2200</b>		umhos/cm	1	1	2510 B-2011	04/26/2023 08:54	04/26/2023 11:51	JEP
<b>Hardness as CaCO3</b>	<b>972</b>	D	mg/L	2	2	2340 C (as HACH 8226)	04/28/2023 07:50	04/28/2023 07:50	CLL
<b>Total Dissolved Solids</b>	<b>1650</b>		mg/L	100	100	2540 C-2015	04/26/2023 12:56	04/26/2023 12:56	HAG
<b>Total Organic Carbon</b>	<b>3.6</b>		mg/L	0.5	0.4	5310 C-2014	05/02/2023 12:58	05/03/2023 20:31	HMF

**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
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**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>0.525</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 903.1</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>See Attached Subcontract Report</b>	<b>1.07</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>See Attached Subcontract Report</b>	<b>1.60</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>Radium</b>	<b>1.60</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>12.3</b>	<b>D2</b>	<b>mg/L</b>	<b>5.0</b>	<b>3.6</b>	<b>EPA 300.0 REV 2.1</b>	<b>05/05/2023 07:50</b>	<b>05/05/2023 07:50</b>	<b>CSC</b>
<b>Fluoride</b>	<b>ND</b>	<b>u</b>	<b>mg/L</b>	<b>0.20</b>		<b>EPA 300.0 REV 2.1</b>	<b>05/03/2023 01:52</b>	<b>05/03/2023 01:52</b>	<b>CLS3</b>
<b>Sulfate</b>	<b>228</b>	<b>D2</b>	<b>mg/L</b>	<b>10.0</b>	<b>10.0</b>	<b>EPA 300.0 REV 2.1</b>	<b>05/05/2023 07:50</b>	<b>05/05/2023 07:50</b>	<b>CSC</b>

**ANALYTICAL RESULTS**

Lab Sample ID: **3043166-02**  
 Description: **Mercury Field Blank**

Sample Collection Date Time: **04/24/2023 10:15**  
 Sample Received Date Time: **04/24/2023 14:32**

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Mercury</b>	<b>ND</b>	<b>u</b>	<b>ng/L</b>	<b>5.0</b>	<b>1.8</b>	<b>EPA 245.7 REV 2</b>	<b>04/26/2023 07:29</b>	<b>04/26/2023 12:26</b>	<b>TML</b>





**ANALYTICAL RESULTS**

Lab Sample ID: **3043167-01**  
 Description: **MW104**

Sample Collection Date Time: 04/25/2023 08:40  
 Sample Received Date Time: 04/26/2023 14:00

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:56	AKB
<b>Arsenic</b>	<b>0.0010</b>		mg/L	0.0010	0.0004	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:56	AKB
<b>Barium</b>	<b>0.034</b>		mg/L	0.004	0.001	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:56	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:56	AKB
Boron	ND	u	mg/L	0.10	0.10	SW846 6010 B	04/27/2023 11:44	04/28/2023 15:06	MRWD
Cadmium	ND	u	mg/L	0.0010	0.0001	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:56	AKB
<b>Calcium</b>	<b>319</b>	D1	mg/L	40.0	13.0	SW846 6010 B	04/27/2023 11:44	04/28/2023 15:13	MRWD
<b>Chromium</b>	<b>0.0009</b>	J	mg/L	0.0020	0.0006	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:56	AKB
Cobalt	ND	u	mg/L	0.004	0.004	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:56	AKB
Copper	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:56	AKB
<b>Iron</b>	<b>3.24</b>		mg/L	0.100	0.050	SW846 6010 B	04/27/2023 11:44	04/28/2023 15:06	MRWD
Lead	ND	u	mg/L	0.002	0.0005	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:56	AKB
<b>Lithium</b>	<b>0.03</b>		mg/L	0.02	0.005	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:56	AKB
<b>Magnesium</b>	<b>87.3</b>	D1	mg/L	2.00	0.900	SW846 6010 B	04/27/2023 11:44	04/28/2023 15:09	MRWD
Molybdenum	ND	u	mg/L	0.01	0.002	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:56	AKB
<b>Nickel</b>	<b>0.002</b>	J	mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:56	AKB
<b>Potassium</b>	<b>2.74</b>		mg/L	0.50	0.22	SW846 6010 B	04/27/2023 11:44	04/28/2023 15:06	MRWD
Selenium	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:56	AKB
<b>Sodium</b>	<b>78.8</b>	D1	mg/L	2.60	1.00	SW846 6010 B	04/27/2023 11:44	04/28/2023 15:09	MRWD
Thallium	ND	u	mg/L	0.0020	0.0001	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:56	AKB
Zinc	ND	u	mg/L	0.02	0.02	SW846-6020 A	04/27/2023 11:44	04/28/2023 15:56	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	04/27/2023 08:48	04/27/2023 13:20	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>397</b>		mg/L	4		2320 B-2011	04/28/2023 14:35	04/28/2023 14:35	DJK
Carbonate Alkalinity as CaCO3	ND	u	mg/L	4		2320 B-2011	04/28/2023 14:35	04/28/2023 14:35	DJK
<b>Total Alkalinity</b>	<b>397</b>		mg/L	4		2320 B-2011	04/28/2023 14:35	04/28/2023 14:35	DJK
Chemical Oxygen Demand	ND	u	mg/L	13	8	HACH 8000	05/02/2023 13:06	05/03/2023 14:00	HMF
<b>Specific Conductance (Lab)</b>	<b>1910</b>		umhos/cm	1	1	2510 B-2011	04/27/2023 16:51	05/02/2023 14:35	AED
<b>Hardness as CaCO3</b>	<b>960</b>	D	mg/L	2	2	2340 C (as HACH 8226)	04/28/2023 07:50	04/28/2023 07:50	CLL
<b>Total Dissolved Solids</b>	<b>1620</b>		mg/L	250	250	2540 C-2015	04/27/2023 12:37	04/28/2023 12:04	HAG
<b>Total Organic Carbon</b>	<b>0.9</b>		mg/L	0.5	0.4	5310 C-2014	05/03/2023 11:02	05/04/2023 05:39	HMF

**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
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**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>0.773</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 903.1</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>See Attached Subcontract Report</b>	<b>0.942</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>Radium</b>	<b>1.72</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>See Attached Subcontract Report</b>	<b>1.72</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>10.7</b>		<b>mg/L</b>	<b>0.5</b>	<b>0.4</b>	<b>EPA 300.0 REV 2.1</b>	<b>05/02/2023 20:51</b>	<b>05/02/2023 20:51</b>	<b>CLS3</b>
<b>Fluoride</b>	<b>ND</b>	<b>u</b>	<b>mg/L</b>	<b>0.20</b>		<b>EPA 300.0 REV 2.1</b>	<b>05/02/2023 20:51</b>	<b>05/02/2023 20:51</b>	<b>CLS3</b>
<b>Sulfate</b>	<b>1710</b>	<b>D</b>	<b>mg/L</b>	<b>10.0</b>	<b>10.0</b>	<b>EPA 300.0 REV 2.1</b>	<b>05/02/2023 21:18</b>	<b>05/02/2023 21:18</b>	<b>CLS3</b>

**ANALYTICAL RESULTS**

Lab Sample ID: **3043167-02**  
 Description: **Mercury Field Blank**

Sample Collection Date Time: **04/25/2023 08:40**  
 Sample Received Date Time: **04/26/2023 14:00**

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Mercury</b>	<b>ND</b>	<b>u</b>	<b>ng/L</b>	<b>5.0</b>	<b>1.8</b>	<b>EPA 245.7 REV 2</b>	<b>04/27/2023 08:48</b>	<b>04/27/2023 14:16</b>	<b>TML</b>



**ANALYTICAL RESULTS**

Lab Sample ID: **3043171-01**  
 Description: **MW4D**

Sample Collection Date Time: 04/26/2023 10:10  
 Sample Received Date Time: 04/26/2023 14:00

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:06	AKB
<b>Arsenic</b>	<b>0.0045</b>		mg/L	0.0010	0.0004	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:06	AKB
<b>Barium</b>	<b>0.021</b>		mg/L	0.004	0.001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:06	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:06	AKB
<b>Boron</b>	<b>9.48</b>	D1	mg/L	1.00	1.00	SW846 6010 B	04/27/2023 11:44	04/28/2023 15:57	MRWD
Cadmium	ND	u	mg/L	0.0010	0.0001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:06	AKB
<b>Calcium</b>	<b>721</b>	D1	mg/L	40.0	13.0	SW846 6010 B	04/27/2023 11:44	04/28/2023 16:00	MRWD
<b>Chromium</b>	<b>0.0010</b>	J	mg/L	0.0020	0.0006	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:06	AKB
<b>Cobalt</b>	<b>0.022</b>		mg/L	0.004	0.004	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:06	AKB
<b>Copper</b>	<b>0.003</b>		mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:06	AKB
<b>Iron</b>	<b>18.6</b>	D1	mg/L	1.00	0.500	SW846 6010 B	04/27/2023 11:44	04/28/2023 15:57	MRWD
<b>Lead</b>	<b>0.0006</b>	J	mg/L	0.002	0.0005	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:06	AKB
<b>Lithium</b>	<b>0.12</b>		mg/L	0.02	0.005	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:06	AKB
<b>Magnesium</b>	<b>273</b>	D1	mg/L	20.0	9.00	SW846 6010 B	04/27/2023 11:44	04/28/2023 16:00	MRWD
<b>Molybdenum</b>	<b>0.008</b>	J	mg/L	0.01	0.002	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:06	AKB
<b>Nickel</b>	<b>0.042</b>		mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:06	AKB
<b>Potassium</b>	<b>38.4</b>	D1	mg/L	5.00	2.20	SW846 6010 B	04/27/2023 11:44	04/28/2023 15:57	MRWD
<b>Selenium</b>	<b>0.001</b>	J	mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:06	AKB
<b>Sodium</b>	<b>233</b>	D1	mg/L	26.0	10.0	SW846 6010 B	04/27/2023 11:44	04/28/2023 16:00	MRWD
<b>Thallium</b>	<b>0.0001</b>	J	mg/L	0.0020	0.0001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:06	AKB
<b>Zinc</b>	<b>0.04</b>		mg/L	0.02	0.02	SW846-6020 A	04/27/2023 11:44	04/28/2023 16:30	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	M2, u	ng/L	5.0	1.8	EPA 245.7 REV 2	04/28/2023 09:21	04/28/2023 13:29	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>368</b>		mg/L	4		2320 B-2011	04/28/2023 14:56	04/28/2023 14:56	DJK
Carbonate Alkalinity as CaCO3	ND	u	mg/L	4		2320 B-2011	04/28/2023 14:56	04/28/2023 14:56	DJK
<b>Total Alkalinity</b>	<b>368</b>		mg/L	4		2320 B-2011	04/28/2023 14:56	04/28/2023 14:56	DJK
<b>Chemical Oxygen Demand</b>	<b>51</b>		mg/L	13	8	HACH 8000	05/02/2023 13:06	05/03/2023 14:00	HMF
<b>Specific Conductance (Lab)</b>	<b>4900</b>		umhos/cm	1	1	2510 B-2011	04/27/2023 16:51	05/02/2023 14:35	CMB
<b>Hardness as CaCO3</b>	<b>2590</b>	D	mg/L	5	5	2340 C (as HACH 8226)	04/28/2023 07:50	04/28/2023 07:50	CLL
<b>Total Dissolved Solids</b>	<b>3590</b>		mg/L	100	100	2540 C-2015	04/27/2023 12:37	04/28/2023 12:04	HAG
<b>Total Organic Carbon</b>	<b>0.9</b>		mg/L	0.5	0.4	5310 C-2014	05/03/2023 11:02	05/04/2023 07:03	HMF

**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
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**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>0.337</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 903.1</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>See Attached Subcontract Report</b>	<b>0.878</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>Radium</b>	<b>1.22</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>See Attached Subcontract Report</b>	<b>1.22</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>289</b>	<b>D2</b>	<b>mg/L</b>	<b>5.0</b>	<b>3.6</b>	<b>EPA 300.0 REV 2.1</b>	<b>05/04/2023 22:42</b>	<b>05/04/2023 22:42</b>	<b>CSC</b>
<b>Fluoride</b>	<b>ND</b>	<b>D2, U</b>	<b>mg/L</b>	<b>2.00</b>		<b>EPA 300.0 REV 2.1</b>	<b>05/03/2023 21:59</b>	<b>05/03/2023 21:59</b>	<b>CSC</b>
<b>Sulfate</b>	<b>641</b>	<b>D2</b>	<b>mg/L</b>	<b>10.0</b>	<b>10.0</b>	<b>EPA 300.0 REV 2.1</b>	<b>05/04/2023 22:42</b>	<b>05/04/2023 22:42</b>	<b>CSC</b>

**ANALYTICAL RESULTS**

Lab Sample ID: **3043171-02**  
 Description: **Mercury Field Blank**

Sample Collection Date Time: **04/26/2023 10:10**  
 Sample Received Date Time: **04/26/2023 14:00**

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Mercury</b>	<b>ND</b>	<b>u</b>	<b>ng/L</b>	<b>5.0</b>	<b>1.8</b>	<b>EPA 245.7 REV 2</b>	<b>04/28/2023 09:21</b>	<b>04/28/2023 14:20</b>	<b>TML</b>





**ANALYTICAL RESULTS**

Lab Sample ID: **3043172-01**  
 Description: **MW5**

Sample Collection Date Time: **04/25/2023 11:20**  
 Sample Received Date Time: **04/26/2023 14:00**

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:08	AKB
<b>Arsenic</b>	<b>0.0050</b>		mg/L	0.0010	0.0004	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:08	AKB
<b>Barium</b>	<b>0.011</b>		mg/L	0.004	0.001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:08	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:08	AKB
<b>Boron</b>	<b>0.75</b>		mg/L	0.10	0.10	SW846 6010 B	04/27/2023 11:44	04/28/2023 16:03	MRWD
Cadmium	ND	u	mg/L	0.0010	0.0001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:08	AKB
<b>Calcium</b>	<b>635</b>	D1	mg/L	40.0	13.0	SW846 6010 B	04/27/2023 11:44	04/28/2023 16:10	MRWD
Chromium	ND	u	mg/L	0.0020	0.0006	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:08	AKB
<b>Cobalt</b>	<b>0.007</b>		mg/L	0.004	0.004	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:08	AKB
Copper	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:08	AKB
<b>Iron</b>	<b>7.99</b>		mg/L	0.100	0.050	SW846 6010 B	04/27/2023 11:44	04/28/2023 16:03	MRWD
Lead	ND	u	mg/L	0.002	0.0005	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:08	AKB
<b>Lithium</b>	<b>0.03</b>		mg/L	0.02	0.005	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:08	AKB
<b>Magnesium</b>	<b>301</b>	D1	mg/L	20.0	9.00	SW846 6010 B	04/27/2023 11:44	04/28/2023 16:10	MRWD
<b>Molybdenum</b>	<b>0.003</b>	J	mg/L	0.01	0.002	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:08	AKB
<b>Nickel</b>	<b>0.005</b>		mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:08	AKB
<b>Potassium</b>	<b>9.12</b>		mg/L	0.50	0.22	SW846 6010 B	04/27/2023 11:44	04/28/2023 16:03	MRWD
Selenium	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:08	AKB
<b>Sodium</b>	<b>89.8</b>	D1	mg/L	2.60	1.00	SW846 6010 B	04/27/2023 11:44	04/28/2023 16:06	MRWD
Thallium	ND	u	mg/L	0.0020	0.0001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:08	AKB
Zinc	ND	u	mg/L	0.02	0.02	SW846-6020 A	04/27/2023 11:44	04/28/2023 16:34	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	04/27/2023 08:48	04/27/2023 13:26	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>500</b>		mg/L	4		2320 B-2011	04/28/2023 15:03	04/28/2023 15:03	DJK
Carbonate Alkalinity as CaCO3	ND	u	mg/L	4		2320 B-2011	04/28/2023 15:03	04/28/2023 15:03	DJK
<b>Total Alkalinity</b>	<b>500</b>		mg/L	4		2320 B-2011	04/28/2023 15:03	04/28/2023 15:03	DJK
<b>Chemical Oxygen Demand</b>	<b>21</b>		mg/L	13	8	HACH 8000	05/02/2023 13:06	05/03/2023 14:00	HMF
<b>Specific Conductance (Lab)</b>	<b>3970</b>		umhos/cm	1	1	2510 B-2011	04/27/2023 16:51	05/02/2023 14:35	CMB
<b>Hardness as CaCO3</b>	<b>2410</b>	D	mg/L	5	5	2340 C (as HACH 8226)	04/28/2023 07:50	04/28/2023 07:50	CLL
<b>Total Dissolved Solids</b>	<b>3650</b>		mg/L	100	100	2540 C-2015	04/27/2023 12:37	04/28/2023 12:04	HAG
<b>Total Organic Carbon</b>	<b>1.7</b>		mg/L	0.5	0.4	5310 C-2014	05/03/2023 11:02	05/04/2023 07:24	HMF

**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
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**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>0.227</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 903.1</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>See Attached Subcontract Report</b>	<b>0.810</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>See Attached Subcontract Report</b>	<b>1.04</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>Radium</b>	<b>1.04</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>92.7</b>	<b>D2</b>	<b>mg/L</b>	<b>10.0</b>	<b>7.2</b>	<b>EPA 300.0 REV 2.1</b>	<b>05/04/2023 23:09</b>	<b>05/04/2023 23:09</b>	<b>CSC</b>
<b>Fluoride</b>	<b>ND</b>	<b>v1, u</b>	<b>mg/L</b>	<b>0.20</b>		<b>EPA 300.0 REV 2.1</b>	<b>05/03/2023 01:52</b>	<b>05/03/2023 01:52</b>	<b>CLS3</b>
<b>Sulfate</b>	<b>4710</b>		<b>mg/L</b>	<b>20.0</b>	<b>20.0</b>	<b>EPA 300.0 REV 2.1</b>	<b>05/03/2023 02:19</b>	<b>05/03/2023 02:19</b>	<b>CLS3</b>

**ANALYTICAL RESULTS**

Lab Sample ID: **3043172-02**

Description: **Mercury Field Blank**

Sample Collection Date Time: **04/25/2023 11:20**

Sample Received Date Time: **04/26/2023 14:00**

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Mercury</b>	<b>ND</b>	<b>u</b>	<b>ng/L</b>	<b>5.0</b>	<b>1.8</b>	<b>EPA 245.7 REV 2</b>	<b>04/27/2023 08:48</b>	<b>04/27/2023 14:22</b>	<b>TML</b>



**ANALYTICAL RESULTS**

Lab Sample ID: **3043173-01**  
 Description: **MW6**

Sample Collection Date Time: **04/25/2023 13:00**  
 Sample Received Date Time: **04/26/2023 14:00**

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:11	AKB
<b>Arsenic</b>	<b>0.0050</b>		mg/L	0.0010	0.0004	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:11	AKB
<b>Barium</b>	<b>0.012</b>		mg/L	0.004	0.001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:11	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:11	AKB
<b>Boron</b>	<b>0.87</b>		mg/L	0.10	0.10	SW846 6010 B	04/27/2023 11:44	04/28/2023 16:22	MRWD
Cadmium	ND	u	mg/L	0.0010	0.0001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:11	AKB
<b>Calcium</b>	<b>461</b>	D1	mg/L	40.0	13.0	SW846 6010 B	04/27/2023 11:44	04/28/2023 16:29	MRWD
<b>Chromium</b>	<b>0.0008</b>	J	mg/L	0.0020	0.0006	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:11	AKB
<b>Cobalt</b>	<b>0.007</b>		mg/L	0.004	0.004	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:11	AKB
Copper	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:11	AKB
<b>Iron</b>	<b>5.51</b>		mg/L	0.100	0.050	SW846 6010 B	04/27/2023 11:44	04/28/2023 16:22	MRWD
Lead	ND	u	mg/L	0.002	0.0005	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:11	AKB
<b>Lithium</b>	<b>0.04</b>		mg/L	0.02	0.005	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:11	AKB
<b>Magnesium</b>	<b>221</b>	D1	mg/L	20.0	9.00	SW846 6010 B	04/27/2023 11:44	04/28/2023 16:29	MRWD
<b>Molybdenum</b>	<b>0.006</b>	J	mg/L	0.01	0.002	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:11	AKB
<b>Nickel</b>	<b>0.014</b>		mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:11	AKB
<b>Potassium</b>	<b>7.51</b>		mg/L	0.50	0.22	SW846 6010 B	04/27/2023 11:44	04/28/2023 16:22	MRWD
Selenium	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:11	AKB
<b>Sodium</b>	<b>35.5</b>	D1	mg/L	2.60	1.00	SW846 6010 B	04/27/2023 11:44	04/28/2023 16:25	MRWD
Thallium	ND	u	mg/L	0.0020	0.0001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:11	AKB
<b>Zinc</b>	<b>0.02</b>		mg/L	0.02	0.02	SW846-6020 A	04/27/2023 11:44	04/28/2023 16:38	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	04/27/2023 08:48	04/27/2023 13:31	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>478</b>		mg/L	4		2320 B-2011	04/28/2023 15:10	04/28/2023 15:10	DJK
Carbonate Alkalinity as CaCO3	ND	u	mg/L	4		2320 B-2011	04/28/2023 15:10	04/28/2023 15:10	DJK
<b>Total Alkalinity</b>	<b>478</b>		mg/L	4		2320 B-2011	04/28/2023 15:10	04/28/2023 15:10	DJK
<b>Chemical Oxygen Demand</b>	<b>13</b>		mg/L	13	8	HACH 8000	05/02/2023 13:06	05/03/2023 14:00	HMF
<b>Specific Conductance (Lab)</b>	<b>2950</b>		umhos/cm	1	1	2510 B-2011	04/27/2023 16:51	05/02/2023 14:35	CMB
<b>Hardness as CaCO3</b>	<b>1790</b>	D	mg/L	5	5	2340 C (as HACH 8226)	04/28/2023 07:50	04/28/2023 07:50	CLL
<b>Total Dissolved Solids</b>	<b>2300</b>		mg/L	100	100	2540 C-2015	04/27/2023 12:37	04/28/2023 12:04	HAG
<b>Total Organic Carbon</b>	<b>1.9</b>		mg/L	0.5	0.4	5310 C-2014	05/03/2023 11:02	05/04/2023 07:45	HMF

**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
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**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>0.602</b>	_Sub	pCi/L			EPA 903.1	05/22/2023 14:16	05/22/2023 14:33	RCW
<b>See Attached Subcontract Report</b>	<b>1.04</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	05/22/2023 14:16	05/22/2023 14:33	RCW
<b>Radium</b>	<b>1.64</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	05/22/2023 14:16	05/22/2023 14:33	RCW
<b>See Attached Subcontract Report</b>	<b>1.64</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	05/22/2023 14:16	05/22/2023 14:33	RCW

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>10.9</b>	D2	mg/L	5.0	3.6	EPA 300.0 REV 2.1	05/04/2023 23:36	05/04/2023 23:36	CSC
Fluoride	ND	v1, u	mg/L	0.20		EPA 300.0 REV 2.1	05/03/2023 02:47	05/03/2023 02:47	CLS3
<b>Sulfate</b>	<b>432</b>	D2	mg/L	10.0	10.0	EPA 300.0 REV 2.1	05/04/2023 23:36	05/04/2023 23:36	CSC

**ANALYTICAL RESULTS**

Lab Sample ID: **3043173-02**  
 Description: **Mercury Field Blank**

Sample Collection Date Time: 04/25/2023 13:00  
 Sample Received Date Time: 04/26/2023 14:00

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	04/27/2023 08:48	04/27/2023 14:28	TML





**ANALYTICAL RESULTS**

Lab Sample ID: **3043174-01**  
 Description: **MW7**

Sample Collection Date Time: **04/25/2023 13:52**  
 Sample Received Date Time: **04/26/2023 14:00**

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:13	AKB
<b>Arsenic</b>	<b>0.0037</b>		mg/L	0.0010	0.0004	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:13	AKB
<b>Barium</b>	<b>0.012</b>		mg/L	0.004	0.001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:13	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:13	AKB
<b>Boron</b>	<b>2.85</b>	D1	mg/L	1.00	1.00	SW846 6010 B	04/27/2023 11:44	04/28/2023 16:35	MRWD
Cadmium	ND	u	mg/L	0.0010	0.0001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:13	AKB
<b>Calcium</b>	<b>464</b>	D1	mg/L	40.0	13.0	SW846 6010 B	04/27/2023 11:44	04/28/2023 16:38	MRWD
<b>Chromium</b>	<b>0.0013</b>	J	mg/L	0.0020	0.0006	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:13	AKB
Cobalt	ND	u	mg/L	0.004	0.004	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:13	AKB
<b>Copper</b>	<b>0.002</b>	J	mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:13	AKB
<b>Iron</b>	<b>4.80</b>		mg/L	0.100	0.050	SW846 6010 B	04/27/2023 11:44	04/28/2023 16:32	MRWD
Lead	ND	u	mg/L	0.002	0.0005	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:13	AKB
<b>Lithium</b>	<b>0.02</b>		mg/L	0.02	0.005	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:13	AKB
<b>Magnesium</b>	<b>171</b>	D1	mg/L	20.0	9.00	SW846 6010 B	04/27/2023 11:44	04/28/2023 16:38	MRWD
<b>Molybdenum</b>	<b>0.006</b>	J	mg/L	0.01	0.002	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:13	AKB
<b>Nickel</b>	<b>0.005</b>		mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:13	AKB
<b>Potassium</b>	<b>6.20</b>		mg/L	0.50	0.22	SW846 6010 B	04/27/2023 11:44	04/28/2023 16:32	MRWD
Selenium	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:13	AKB
<b>Sodium</b>	<b>44.8</b>	D1	mg/L	2.60	1.00	SW846 6010 B	04/27/2023 11:44	04/28/2023 16:35	MRWD
Thallium	ND	u	mg/L	0.0020	0.0001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:13	AKB
Zinc	ND	u	mg/L	0.02	0.02	SW846-6020 A	04/27/2023 11:44	04/28/2023 16:42	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	04/27/2023 08:48	04/27/2023 13:37	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>369</b>		mg/L	4		2320 B-2011	04/28/2023 15:17	04/28/2023 15:17	DJK
Carbonate Alkalinity as CaCO3	ND	u	mg/L	4		2320 B-2011	04/28/2023 15:17	04/28/2023 15:17	DJK
<b>Total Alkalinity</b>	<b>369</b>		mg/L	4		2320 B-2011	04/28/2023 15:17	04/28/2023 15:17	DJK
<b>Chemical Oxygen Demand</b>	<b>18</b>		mg/L	13	8	HACH 8000	05/02/2023 13:06	05/03/2023 14:00	HMF
<b>Specific Conductance (Lab)</b>	<b>2710</b>		umhos/cm	1	1	2510 B-2011	04/27/2023 16:51	05/02/2023 14:35	CMB
<b>Hardness as CaCO3</b>	<b>2060</b>	D	mg/L	5	5	2340 C (as HACH 8226)	04/28/2023 07:50	04/28/2023 07:50	CLL
<b>Total Dissolved Solids</b>	<b>2540</b>		mg/L	100	100	2540 C-2015	04/27/2023 12:37	04/28/2023 12:04	HAG
<b>Total Organic Carbon</b>	<b>1.4</b>		mg/L	0.5	0.4	5310 C-2014	05/03/2023 11:02	05/04/2023 08:06	HMF

**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
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**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>-0.069</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 903.1</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>See Attached Subcontract Report</b>	<b>0.924</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>Radium</b>	<b>0.924</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>See Attached Subcontract Report</b>	<b>0.924</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>94.5</b>		<b>mg/L</b>	<b>0.5</b>	<b>0.4</b>	<b>EPA 300.0 REV 2.1</b>	<b>05/03/2023 03:41</b>	<b>05/03/2023 03:41</b>	<b>CLS3</b>
<b>Fluoride</b>	<b>0.25</b>		<b>mg/L</b>	<b>0.20</b>		<b>EPA 300.0 REV 2.1</b>	<b>05/03/2023 03:41</b>	<b>05/03/2023 03:41</b>	<b>CLS3</b>
<b>Sulfate</b>	<b>2300</b>	<b>D, M3</b>	<b>mg/L</b>	<b>20.0</b>	<b>20.0</b>	<b>EPA 300.0 REV 2.1</b>	<b>05/03/2023 04:09</b>	<b>05/03/2023 04:09</b>	<b>CLS3</b>

**ANALYTICAL RESULTS**

Lab Sample ID: **3043174-02**  
 Description: **Mercury Field Blank**

Sample Collection Date Time: **04/25/2023 13:52**  
 Sample Received Date Time: **04/26/2023 14:00**

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Mercury</b>	<b>ND</b>	<b>u</b>	<b>ng/L</b>	<b>5.0</b>	<b>1.8</b>	<b>EPA 245.7 REV 2</b>	<b>04/27/2023 08:48</b>	<b>04/27/2023 14:33</b>	<b>TML</b>



**ANALYTICAL RESULTS**

Lab Sample ID: **3043175-01**  
 Description: **MW8**

Sample Collection Date Time: **04/26/2023 08:04**  
 Sample Received Date Time: **04/26/2023 14:00**

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:15	AKB
<b>Arsenic</b>	<b>0.0047</b>		mg/L	0.0010	0.0004	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:15	AKB
<b>Barium</b>	<b>0.018</b>		mg/L	0.004	0.001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:15	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:15	AKB
Boron	ND	u	mg/L	0.10	0.10	SW846 6010 B	04/27/2023 11:44	04/28/2023 16:41	MRWD
Cadmium	ND	u	mg/L	0.0010	0.0001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:15	AKB
<b>Calcium</b>	<b>218</b>	D1	mg/L	40.0	13.0	SW846 6010 B	04/27/2023 11:44	04/28/2023 16:47	MRWD
<b>Chromium</b>	<b>0.0008</b>	J	mg/L	0.0020	0.0006	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:15	AKB
Cobalt	ND	u	mg/L	0.004	0.004	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:15	AKB
Copper	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:15	AKB
<b>Iron</b>	<b>18.1</b>	D1	mg/L	1.00	0.500	SW846 6010 B	04/27/2023 11:44	04/28/2023 16:44	MRWD
Lead	ND	u	mg/L	0.002	0.0005	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:15	AKB
<b>Lithium</b>	<b>0.008</b>	J	mg/L	0.02	0.005	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:15	AKB
<b>Magnesium</b>	<b>115</b>	D1	mg/L	20.0	9.00	SW846 6010 B	04/27/2023 11:44	04/28/2023 16:47	MRWD
<b>Molybdenum</b>	<b>0.01</b>		mg/L	0.01	0.002	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:15	AKB
<b>Nickel</b>	<b>0.002</b>	J	mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:15	AKB
<b>Potassium</b>	<b>2.63</b>		mg/L	0.50	0.22	SW846 6010 B	04/27/2023 11:44	04/28/2023 16:41	MRWD
Selenium	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:15	AKB
<b>Sodium</b>	<b>33.9</b>	D1	mg/L	2.60	1.00	SW846 6010 B	04/27/2023 11:44	04/28/2023 16:44	MRWD
Thallium	ND	u	mg/L	0.0020	0.0001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:15	AKB
Zinc	ND	u	mg/L	0.02	0.02	SW846-6020 A	04/27/2023 11:44	04/28/2023 16:45	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	04/28/2023 09:21	04/28/2023 13:34	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>313</b>	M3	mg/L	4		2320 B-2011	04/28/2023 15:24	04/28/2023 15:24	DJK
Carbonate Alkalinity as CaCO3	ND	u, M3	mg/L	4		2320 B-2011	04/28/2023 15:24	04/28/2023 15:24	DJK
<b>Total Alkalinity</b>	<b>313</b>	M3	mg/L	4		2320 B-2011	04/28/2023 15:24	04/28/2023 15:24	DJK
<b>Chemical Oxygen Demand</b>	<b>13</b>		mg/L	13	8	HACH 8000	05/02/2023 13:06	05/03/2023 14:00	HMF
<b>Specific Conductance (Lab)</b>	<b>1720</b>		umhos/cm	1	1	2510 B-2011	04/27/2023 16:51	05/02/2023 14:35	CMB
<b>Hardness as CaCO3</b>	<b>1960</b>	D	mg/L	5	5	2340 C (as HACH 8226)	04/28/2023 07:50	04/28/2023 07:50	CLL
<b>Total Dissolved Solids</b>	<b>1110</b>		mg/L	250	250	2540 C-2015	04/27/2023 12:37	04/28/2023 12:04	HAG
<b>Total Organic Carbon</b>	<b>3.1</b>		mg/L	0.5	0.4	5310 C-2014	05/03/2023 11:02	05/04/2023 08:27	HMF

**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
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**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>0.839</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 903.1</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>See Attached Subcontract Report</b>	<b>0.819</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>Radium</b>	<b>1.66</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>See Attached Subcontract Report</b>	<b>1.66</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>4.2</b>	<b>D2</b>	<b>mg/L</b>	<b>5.0</b>	<b>3.6</b>	<b>EPA 300.0 REV 2.1</b>	<b>05/05/2023 16:46</b>	<b>05/05/2023 16:46</b>	<b>CSC</b>
<b>Fluoride</b>	<b>ND</b>	<b>D2, v1, u</b>	<b>mg/L</b>	<b>2.00</b>		<b>EPA 300.0 REV 2.1</b>	<b>05/05/2023 16:46</b>	<b>05/05/2023 16:46</b>	<b>CSC</b>
<b>Sulfate</b>	<b>721</b>	<b>D2</b>	<b>mg/L</b>	<b>10.0</b>	<b>10.0</b>	<b>EPA 300.0 REV 2.1</b>	<b>05/05/2023 16:46</b>	<b>05/05/2023 16:46</b>	<b>CSC</b>

**ANALYTICAL RESULTS**

Lab Sample ID: **3043175-02**  
 Description: **Mercury Field Blank**

Sample Collection Date Time: **04/26/2023 08:04**  
 Sample Received Date Time: **04/26/2023 14:00**

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Mercury</b>	<b>ND</b>	<b>u</b>	<b>ng/L</b>	<b>5.0</b>	<b>1.8</b>	<b>EPA 245.7 REV 2</b>	<b>04/28/2023 09:21</b>	<b>04/28/2023 14:25</b>	<b>TML</b>





**ANALYTICAL RESULTS**

Lab Sample ID: **3043176-01**  
 Description: **Well Duplicate 1**

Sample Collection Date Time: **04/25/2023 14:30**  
 Sample Received Date Time: **04/26/2023 14:00**

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:33	AKB
<b>Arsenic</b>	<b>0.0045</b>		mg/L	0.0010	0.0004	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:33	AKB
<b>Barium</b>	<b>0.011</b>		mg/L	0.004	0.001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:33	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:33	AKB
<b>Boron</b>	<b>0.86</b>		mg/L	0.10	0.10	SW846 6010 B	04/27/2023 11:44	04/28/2023 17:00	MRWD
Cadmium	ND	u	mg/L	0.0010	0.0001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:33	AKB
<b>Calcium</b>	<b>473</b>	D1	mg/L	40.0	13.0	SW846 6010 B	04/27/2023 11:44	04/28/2023 17:06	MRWD
Chromium	ND	u	mg/L	0.0020	0.0006	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:33	AKB
<b>Cobalt</b>	<b>0.007</b>		mg/L	0.004	0.004	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:33	AKB
Copper	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:33	AKB
<b>Iron</b>	<b>5.14</b>		mg/L	0.100	0.050	SW846 6010 B	04/27/2023 11:44	04/28/2023 17:00	MRWD
Lead	ND	u	mg/L	0.002	0.0005	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:33	AKB
<b>Lithium</b>	<b>0.04</b>		mg/L	0.02	0.005	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:33	AKB
<b>Magnesium</b>	<b>227</b>	D1	mg/L	20.0	9.00	SW846 6010 B	04/27/2023 11:44	04/28/2023 17:06	MRWD
<b>Molybdenum</b>	<b>0.006</b>	J	mg/L	0.01	0.002	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:33	AKB
<b>Nickel</b>	<b>0.014</b>		mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:33	AKB
<b>Potassium</b>	<b>7.54</b>		mg/L	0.50	0.22	SW846 6010 B	04/27/2023 11:44	04/28/2023 17:00	MRWD
Selenium	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:33	AKB
<b>Sodium</b>	<b>35.8</b>	D1	mg/L	2.60	1.00	SW846 6010 B	04/27/2023 11:44	04/28/2023 17:03	MRWD
Thallium	ND	u	mg/L	0.0020	0.0001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:33	AKB
<b>Zinc</b>	<b>0.02</b>		mg/L	0.02	0.02	SW846-6020 A	04/27/2023 11:44	04/28/2023 16:49	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	04/28/2023 09:21	04/28/2023 13:40	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>479</b>		mg/L	4		2320 B-2011	04/28/2023 15:29	04/28/2023 15:29	DJK
Carbonate Alkalinity as CaCO3	ND	u	mg/L	4		2320 B-2011	04/28/2023 15:29	04/28/2023 15:29	DJK
<b>Total Alkalinity</b>	<b>479</b>		mg/L	4		2320 B-2011	04/28/2023 15:29	04/28/2023 15:29	DJK
<b>Chemical Oxygen Demand</b>	<b>11</b>	J	mg/L	13	8	HACH 8000	05/02/2023 13:06	05/03/2023 14:00	HMF
<b>Specific Conductance (Lab)</b>	<b>2960</b>		umhos/cm	1	1	2510 B-2011	04/27/2023 16:51	05/02/2023 14:35	CMB
<b>Hardness as CaCO3</b>	<b>1850</b>	D	mg/L	5	5	2340 C (as HACH 8226)	04/28/2023 07:50	04/28/2023 07:50	CLL
<b>Total Dissolved Solids</b>	<b>2430</b>		mg/L	100	100	2540 C-2015	04/27/2023 12:37	04/28/2023 12:04	HAG
<b>Total Organic Carbon</b>	<b>1.8</b>		mg/L	0.5	0.4	5310 C-2014	05/05/2023 16:40	05/07/2023 06:06	HMF

**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
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**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>0.118</b>	_Sub	pCi/L			EPA 903.1	05/22/2023 14:16	05/22/2023 14:33	RCW
<b>See Attached Subcontract Report</b>	<b>0.696</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	05/22/2023 14:16	05/22/2023 14:33	RCW
<b>See Attached Subcontract Report</b>	<b>0.814</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	05/22/2023 14:16	05/22/2023 14:33	RCW
<b>Radium</b>	<b>0.814</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	05/22/2023 14:16	05/22/2023 14:33	RCW

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>26.1</b>	D2	mg/L	5.0	3.6	EPA 300.0 REV 2.1	05/05/2023 17:13	05/05/2023 17:13	CSC
Fluoride	ND	D2, v1, u	mg/L	2.00		EPA 300.0 REV 2.1	05/05/2023 17:13	05/05/2023 17:13	CSC
<b>Sulfate</b>	<b>1470</b>	D2	mg/L	10.0	10.0	EPA 300.0 REV 2.1	05/05/2023 17:13	05/05/2023 17:13	CSC

**ANALYTICAL RESULTS**

Lab Sample ID: **3043176-02**

Description: **Mercury Field Blank**

Sample Collection Date Time: 04/25/2023 14:30

Sample Received Date Time: 04/26/2023 14:00

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	04/28/2023 09:21	04/28/2023 14:31	TML



**ANALYTICAL RESULTS**

Lab Sample ID: **3043177-01**  
 Description: **Well Duplicate 2**

Sample Collection Date Time: **04/25/2023 08:44**  
 Sample Received Date Time: **04/26/2023 14:00**

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:35	AKB
<b>Arsenic</b>	<b>0.0016</b>		mg/L	0.0010	0.0004	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:35	AKB
<b>Barium</b>	<b>0.053</b>		mg/L	0.004	0.001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:35	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:35	AKB
Boron	ND	u	mg/L	0.10	0.10	SW846 6010 B	04/27/2023 11:44	04/28/2023 17:10	MRWD
Cadmium	ND	u	mg/L	0.0010	0.0001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:35	AKB
<b>Calcium</b>	<b>40.2</b>	D1	mg/L	4.00	1.30	SW846 6010 B	04/27/2023 11:44	04/28/2023 17:13	MRWD
Chromium	ND	u	mg/L	0.0020	0.0006	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:35	AKB
Cobalt	ND	u	mg/L	0.004	0.004	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:35	AKB
Copper	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:35	AKB
<b>Iron</b>	<b>3.96</b>		mg/L	0.100	0.050	SW846 6010 B	04/27/2023 11:44	04/28/2023 17:10	MRWD
Lead	ND	u	mg/L	0.002	0.0005	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:35	AKB
Lithium	ND	u	mg/L	0.02	0.005	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:35	AKB
<b>Magnesium</b>	<b>20.0</b>	D1	mg/L	2.00	0.900	SW846 6010 B	04/27/2023 11:44	04/28/2023 17:13	MRWD
Molybdenum	ND	u	mg/L	0.01	0.002	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:35	AKB
Nickel	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:35	AKB
<b>Potassium</b>	<b>0.56</b>		mg/L	0.50	0.22	SW846 6010 B	04/27/2023 11:44	04/28/2023 17:10	MRWD
Selenium	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:35	AKB
<b>Sodium</b>	<b>28.5</b>	D1	mg/L	2.60	1.00	SW846 6010 B	04/27/2023 11:44	04/28/2023 17:13	MRWD
Thallium	ND	u	mg/L	0.0020	0.0001	SW846-6020 A	04/27/2023 11:44	05/01/2023 16:35	AKB
Zinc	ND	u	mg/L	0.02	0.02	SW846-6020 A	04/27/2023 11:44	04/28/2023 16:53	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	04/27/2023 08:48	04/27/2023 13:42	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>149</b>	M3	mg/L	4		2320 B-2011	04/28/2023 16:14	04/28/2023 16:14	DJK
Carbonate Alkalinity as CaCO3	ND	u, M3	mg/L	4		2320 B-2011	04/28/2023 16:14	04/28/2023 16:14	DJK
<b>Total Alkalinity</b>	<b>149</b>	M3	mg/L	4		2320 B-2011	04/28/2023 16:14	04/28/2023 16:14	DJK
<b>Chemical Oxygen Demand</b>	<b>8</b>	J	mg/L	13	8	HACH 8000	05/02/2023 13:06	05/03/2023 14:00	HMF
<b>Specific Conductance (Lab)</b>	<b>482</b>		umhos/cm	1	1	2510 B-2011	04/27/2023 16:51	05/02/2023 14:35	CMB
<b>Hardness as CaCO3</b>	<b>194</b>		mg/L	1	1	2340 C (as HACH 8226)	04/28/2023 07:50	04/28/2023 07:50	CLL
<b>Total Dissolved Solids</b>	<b>420</b>		mg/L	100	100	2540 C-2015	04/27/2023 12:37	04/28/2023 12:04	HAG
<b>Total Organic Carbon</b>	<b>1.7</b>		mg/L	0.5	0.4	5310 C-2014	05/05/2023 16:40	05/07/2023 06:27	HMF

**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
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**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>0.769</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 903.1</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>See Attached Subcontract Report</b>	<b>0.231</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>Radium</b>	<b>1.00</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>See Attached Subcontract Report</b>	<b>1.00</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>10.6</b>	<b>D2</b>	<b>mg/L</b>	<b>5.0</b>	<b>3.6</b>	<b>EPA 300.0 REV 2.1</b>	<b>05/05/2023 17:41</b>	<b>05/05/2023 17:41</b>	<b>CSC</b>
<b>Fluoride</b>	<b>ND</b>	<b>D2, v1, u</b>	<b>mg/L</b>	<b>2.00</b>		<b>EPA 300.0 REV 2.1</b>	<b>05/05/2023 17:41</b>	<b>05/05/2023 17:41</b>	<b>CSC</b>
<b>Sulfate</b>	<b>76.6</b>	<b>D2</b>	<b>mg/L</b>	<b>10.0</b>	<b>10.0</b>	<b>EPA 300.0 REV 2.1</b>	<b>05/05/2023 17:41</b>	<b>05/05/2023 17:41</b>	<b>CSC</b>

**ANALYTICAL RESULTS**

Lab Sample ID: **3043177-02**  
 Description: **Mercury Field Blank**

Sample Collection Date Time: **04/25/2023 08:44**  
 Sample Received Date Time: **04/26/2023 14:00**

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Mercury</b>	<b>ND</b>	<b>u</b>	<b>ng/L</b>	<b>5.0</b>	<b>1.8</b>	<b>EPA 245.7 REV 2</b>	<b>04/27/2023 08:48</b>	<b>04/27/2023 14:39</b>	<b>TML</b>





**ANALYTICAL RESULTS**

Lab Sample ID: **3043773-01**  
 Description: **Field Blank**

Sample Collection Date Time: **04/25/2023 14:22**  
 Sample Received Date Time: **04/26/2023 14:00**

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	04/28/2023 12:26	05/02/2023 14:51	AKB
Arsenic	ND	u	mg/L	0.0010	0.0004	SW846-6020 A	04/28/2023 12:26	05/02/2023 14:51	AKB
Barium	ND	u	mg/L	0.004	0.001	SW846-6020 A	04/28/2023 12:26	05/02/2023 14:51	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	04/28/2023 12:26	05/02/2023 14:51	AKB
Boron	ND	u	mg/L	0.10	0.10	SW846 6010 B	04/28/2023 12:26	05/01/2023 14:26	MRWD
Cadmium	ND	u	mg/L	0.0010	0.0001	SW846-6020 A	04/28/2023 12:26	05/02/2023 14:51	AKB
Calcium	ND	u	mg/L	0.40	0.13	SW846 6010 B	04/28/2023 12:26	05/01/2023 14:26	MRWD
Chromium	ND	u	mg/L	0.0020	0.0006	SW846-6020 A	04/28/2023 12:26	05/02/2023 14:51	AKB
Cobalt	ND	u	mg/L	0.004	0.004	SW846-6020 A	04/28/2023 12:26	05/02/2023 14:51	AKB
Copper	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/28/2023 12:26	05/02/2023 14:51	AKB
Iron	ND	u	mg/L	0.100	0.050	SW846 6010 B	04/28/2023 12:26	05/01/2023 14:26	MRWD
Lead	ND	u	mg/L	0.002	0.0005	SW846-6020 A	04/28/2023 12:26	05/02/2023 14:51	AKB
Lithium	ND	u	mg/L	0.02	0.005	SW846-6020 A	04/28/2023 12:26	05/02/2023 14:51	AKB
Magnesium	ND	u	mg/L	0.200	0.090	SW846 6010 B	04/28/2023 12:26	05/01/2023 14:26	MRWD
Molybdenum	ND	u	mg/L	0.01	0.002	SW846-6020 A	04/28/2023 12:26	05/03/2023 14:25	AKB
Nickel	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/28/2023 12:26	05/02/2023 14:51	AKB
Potassium	ND	u	mg/L	0.50	0.22	SW846 6010 B	04/28/2023 12:26	05/01/2023 14:26	MRWD
Selenium	ND	u	mg/L	0.003	0.001	SW846-6020 A	04/28/2023 12:26	05/02/2023 14:51	AKB
Sodium	ND	u	mg/L	0.26	0.10	SW846 6010 B	04/28/2023 12:26	05/02/2023 14:21	MRWD
Thallium	ND	u	mg/L	0.0020	0.0001	SW846-6020 A	04/28/2023 12:26	05/02/2023 14:51	AKB
Zinc	ND	u	mg/L	0.02	0.02	SW846-6020 A	04/28/2023 12:26	05/02/2023 14:51	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Mercury</b>	<b>12.1</b>		ng/L	5.0	1.8	EPA 245.7 REV 2	04/28/2023 09:21	04/28/2023 13:46	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Bicarbonate Alkalinity as CaCO3	ND	u	mg/L	4		2320 B-2011	04/28/2023 16:18	04/28/2023 16:18	DJK
Carbonate Alkalinity as CaCO3	ND	u	mg/L	4		2320 B-2011	04/28/2023 16:18	04/28/2023 16:18	DJK
Total Alkalinity	ND	u	mg/L	4		2320 B-2011	04/28/2023 16:18	04/28/2023 16:18	DJK
Chemical Oxygen Demand	ND	u	mg/L	13	8	HACH 8000	05/04/2023 09:46	05/04/2023 14:30	HMF
<b>Specific Conductance (Lab)</b>	<b>2</b>		umhos/cm	1	1	2510 B-2011	04/27/2023 16:51	05/02/2023 14:35	CMB
<b>Hardness as CaCO3</b>	<b>8</b>		mg/L	1	1	2340 C (as HACH 8226)	04/28/2023 07:50	04/28/2023 07:50	CLL
<b>pH (Lab)</b>	<b>5.79</b>	H3	Std. Units	0.10	0.10	SM 4500-H+ B-2011	04/27/2023 16:49	05/02/2023 13:55	AED
<b>Total Dissolved Solids</b>	<b>60</b>		mg/L	50	50	2540 C-2015	04/27/2023 12:37	04/28/2023 12:04	HAG
Total Organic Carbon	ND	u	mg/L	0.5	0.4	5310 C-2014	05/05/2023 16:43	05/08/2023 00:42	HMF

**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
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**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>-0.114</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 903.1</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>See Attached Subcontract Report</b>	<b>0.803</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>Radium</b>	<b>0.803</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>
<b>See Attached Subcontract Report</b>	<b>0.803</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>05/22/2023 14:16</b>	<b>05/22/2023 14:33</b>	<b>RCW</b>

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>0.4</b>		<b>mg/L</b>	<b>0.5</b>	<b>0.4</b>	<b>EPA 300.0 REV 2.1</b>	<b>05/05/2023 19:03</b>	<b>05/05/2023 19:03</b>	<b>CSC</b>
Fluoride	ND	v1, u	mg/L	0.20		EPA 300.0 REV 2.1	05/05/2023 19:03	05/05/2023 19:03	CSC
Sulfate	ND	u	mg/L	1.0	1.0	EPA 300.0 REV 2.1	05/05/2023 19:03	05/05/2023 19:03	CSC

**ANALYTICAL RESULTS**

Lab Sample ID: **3043773-02**  
 Description: **Mercury Field Blank**

Sample Collection Date Time: **04/25/2023 14:22**  
 Sample Received Date Time: **04/26/2023 14:00**

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	04/28/2023 09:21	04/28/2023 14:37	TML



**Notes for work order 3043158**

- Samples collected by PACE personnel are done so in accordance with procedures set forth in PACE field services SOPs .
- Results contained in this report are only representative of the samples received.
- PACE does not provide interpretation of these results unless otherwise stated .
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identification based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.

**Qualifiers**

_Sub	See subcontractors report.
A-04	CCV meets method criteria.
D	Results reported from dilution.
D1	Sample required dilution due to high concentration of target analyte.
D2	Sample required dilution due to matrix interference.
E	Concentration exceeds calibration range
H3	Sample received and analyzed past holding time.
J	Estimated value.
L2	The associated blank spike recovery was below method acceptance limits.
M1	Matrix spike recovery was high; the method control sample recovery was acceptable.
M2	Matrix spike recovery was low; the method control sample recovery was acceptable.
M3	The accuracy of the spike recovery value is reduced since the analyte concentration in the sample is disproportionate to spike level. The method control sample recovery was acceptable.
U	Target analyte was analyzed for, but was below detection limit (the value associated with the qualifier is the laboratory method detection limit in our LIMS system).
V1	CCV recovery was above method acceptance limits. This target analyte not detected in the sample.
Y1	Sample RPD exceeded the method control limit.
Y5	MS/MSD RPD exceeded the method control limit.

**Standard Qualifiers/Acronyms**

MDL	Method Detection Limit
MRL	Minimum Reporting Limit
ND	Not Detected
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
% Rec	Percent Recovery
RPD	Relative Percent Difference
>	Greater than
<	Less than



**Metals by SW846 6000 Series Methods Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch BCD2170 - EPA 200.2**

**Blank (BCD2170-BLK1)**

Prepared: 4/25/2023 10:46, Analyzed: 4/26/2023 16:46

Molybdenum	ND	0.01	mg/L							U
Antimony	ND	0.005	mg/L							U
Arsenic	ND	0.0010	mg/L							U
Barium	ND	0.004	mg/L							U
Beryllium	ND	0.0020	mg/L							U
Cadmium	ND	0.0010	mg/L							U
Chromium	ND	0.0020	mg/L							U
Cobalt	ND	0.004	mg/L							U
Copper	ND	0.003	mg/L							U
Lead	ND	0.002	mg/L							U
Lithium	ND	0.02	mg/L							U
Nickel	ND	0.003	mg/L							U
Selenium	ND	0.003	mg/L							U
Thallium	ND	0.0020	mg/L							U
Zinc	ND	0.02	mg/L							U

**Blank (BCD2170-BLK2)**

Prepared: 4/25/2023 10:46, Analyzed: 4/26/2023 13:51

Boron	ND	0.10	mg/L							U
Calcium	ND	0.40	mg/L							U
Iron	ND	0.100	mg/L							U
Magnesium	ND	0.200	mg/L							U
Potassium	ND	0.50	mg/L							U
Sodium	ND	0.26	mg/L							U

**LCS (BCD2170-BS1)**

Prepared: 4/25/2023 10:46, Analyzed: 4/26/2023 16:48

Molybdenum	0.07	0.01	mg/L	0.0625		105	85-115			
Antimony	0.067	0.005	mg/L	0.0625		107	85-115			
Arsenic	0.0631	0.0010	mg/L	0.0625		101	85-115			
Barium	0.061	0.004	mg/L	0.0625		97.7	85-115			
Beryllium	0.0630	0.0020	mg/L	0.0625		101	85-115			
Cadmium	0.0639	0.0010	mg/L	0.0625		102	85-115			
Chromium	0.0646	0.0020	mg/L	0.0625		103	85-115			
Cobalt	0.064	0.004	mg/L	0.0625		103	85-115			
Copper	0.063	0.003	mg/L	0.0625		101	85-115			
Lead	0.063	0.002	mg/L	0.0625		100	85-115			
Lithium	0.06	0.02	mg/L	0.0625		101	85-115			
Nickel	0.065	0.003	mg/L	0.0625		104	85-115			
Selenium	0.064	0.003	mg/L	0.0625		103	85-115			
Thallium	0.0630	0.0020	mg/L	0.0625		101	85-115			
Zinc	0.06	0.02	mg/L	0.0625		103	85-115			





**Metals by SW846 6000 Series Methods Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch BCD2170 - EPA 200.2**

**LCS (BCD2170-BS2)**

Prepared: 4/25/2023 10:46, Analyzed: 4/26/2023 13:55

Boron	0.12	0.10	mg/L	0.125		99.8	85-115			
Calcium	6.35	0.40	mg/L	6.25		102	85-115			
Iron	6.23	0.100	mg/L	6.25		99.6	85-115			
Magnesium	6.23	0.200	mg/L	6.25		99.7	85-115			
Potassium	6.21	0.50	mg/L	6.25		99.4	85-115			
Sodium	5.96	0.26	mg/L	6.25		95.3	85-115			

**Matrix Spike (BCD2170-MS1)**

Source: 3043160-01

Prepared: 4/25/2023 10:46, Analyzed: 4/26/2023 17:17

Antimony	0.070	0.050	mg/L	0.0625	ND	112	80-120			D2
Molybdenum	0.07	0.10	mg/L	0.0625	ND	108	80-120			D2, J
Arsenic	0.0646	0.0100	mg/L	0.0625	ND	103	80-120			D2
Barium	0.120	0.040	mg/L	0.0625	0.053	107	80-120			D2
Beryllium	0.0676	0.0200	mg/L	0.0625	ND	108	80-120			D2
Cadmium	0.0640	0.0100	mg/L	0.0625	ND	102	80-120			D2
Chromium	0.0645	0.0200	mg/L	0.0625	ND	103	80-120			D2
Cobalt	0.064	0.040	mg/L	0.0625	ND	102	80-120			D2
Copper	0.063	0.030	mg/L	0.0625	ND	101	80-120			D2
Lead	0.065	0.020	mg/L	0.0625	ND	105	80-120			D2
Lithium	0.09	0.20	mg/L	0.0625	ND	139	80-120			M1, D2, J
Nickel	0.066	0.030	mg/L	0.0625	ND	105	80-120			D2
Selenium	0.062	0.030	mg/L	0.0625	ND	99.2	80-120			D2
Thallium	0.0674	0.0200	mg/L	0.0625	ND	108	80-120			D2
Zinc	0.06	0.20	mg/L	0.0625	ND	101	80-120			D2, J

**Matrix Spike (BCD2170-MS2)**

Source: 3043160-01

Prepared: 4/25/2023 10:46, Analyzed: 4/26/2023 14:39

Boron	ND	1.00	mg/L	0.125	ND		80-120			D2, M2, U
Calcium	110	4.00	mg/L	6.25	106	61.7	80-120			D2, M3
Iron	6.88	1.00	mg/L	6.25	0.645	99.7	80-120			D2
Magnesium	33.8	2.00	mg/L	6.25	28.8	80.3	80-120			D2, M1
Potassium	8.02	5.00	mg/L	6.25	ND	128	80-120			D2, M1
Sodium	79.7	2.60	mg/L	6.25	71.7	127	80-120			D2, M1



**Metals by SW846 6000 Series Methods Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch BCD2170 - EPA 200.2**

**Matrix Spike Dup (BCD2170-MSD1) Source: 3043160-01**

Prepared: 4/25/2023 10:46, Analyzed: 4/26/2023 17:19

Molybdenum	0.07	0.10	mg/L	0.0625	ND	110	80-120	1.43	20	D2, J
Antimony	0.070	0.050	mg/L	0.0625	ND	111	80-120	0.630	20	D2
Arsenic	0.0655	0.0100	mg/L	0.0625	ND	105	80-120	1.26	20	D2
Barium	0.121	0.040	mg/L	0.0625	0.053	110	80-120	1.33	20	D2
Beryllium	0.0662	0.0200	mg/L	0.0625	ND	106	80-120	2.11	20	D2
Cadmium	0.0645	0.0100	mg/L	0.0625	ND	103	80-120	0.840	20	D2
Chromium	0.0652	0.0200	mg/L	0.0625	ND	104	80-120	1.03	20	D2
Cobalt	0.065	0.040	mg/L	0.0625	ND	105	80-120	2.24	20	D2
Copper	0.064	0.030	mg/L	0.0625	ND	102	80-120	0.959	20	D2
Lead	0.066	0.020	mg/L	0.0625	ND	106	80-120	1.46	20	D2
Lithium	0.09	0.20	mg/L	0.0625	ND	138	80-120	0.864	20	D2, M1, J
Nickel	0.067	0.030	mg/L	0.0625	ND	107	80-120	1.75	20	D2
Selenium	0.065	0.030	mg/L	0.0625	ND	105	80-120	5.32	20	D2
Thallium	0.0673	0.0200	mg/L	0.0625	ND	108	80-120	0.119	20	D2
Zinc	0.07	0.20	mg/L	0.0625	ND	105	80-120	4.23	20	D2, J

**Matrix Spike Dup (BCD2170-MSD2) Source: 3043160-01**

Prepared: 4/25/2023 10:46, Analyzed: 4/26/2023 14:51

Boron	ND	1.00	mg/L	0.125	ND		80-120		20	D2, M2, U
Calcium	113	4.00	mg/L	6.25	106	116	80-120	3.02	20	D2
Iron	7.06	1.00	mg/L	6.25	0.645	103	80-120	2.60	20	D2
Magnesium	35.1	2.00	mg/L	6.25	28.8	102	80-120	3.85	20	D2, M1
Potassium	8.22	5.00	mg/L	6.25	ND	132	80-120	2.41	20	D2, M1
Sodium	80.3	2.60	mg/L	6.25	71.7	137	80-120	0.774	20	D2, M1

**Post Spike (BCD2170-PS1) Source: 3043160-01**

Prepared: 4/25/2023 10:46, Analyzed: 4/26/2023 17:22

Antimony	65.1		ug/L	62.5	0.276	104	75-125			D2
Molybdenum	69.8		ug/L	62.5	3.79	106	75-125			D2
Arsenic	64.6		ug/L	62.5	1.96	100	75-125			D2
Barium	119		ug/L	62.5	52.6	106	75-125			D2
Beryllium	64.9		ug/L	62.5	0.0110	104	75-125			D2
Cadmium	65.2		ug/L	62.5	0.0340	104	75-125			D2
Chromium	65.1		ug/L	62.5	0.292	104	75-125			D2
Cobalt	65.8		ug/L	62.5	1.08	104	75-125			D2
Copper	64.6		ug/L	62.5	0.605	102	75-125			D2
Lead	66.8		ug/L	62.5	0.179	107	75-115			D2
Lithium	85.2		ug/L	62.5	17.0	109	75-125			D2
Nickel	66.6		ug/L	62.5	2.76	102	75-125			D2
Selenium	63.2		ug/L	62.5	0.069	101	75-125			D2
Thallium	67.6		ug/L	62.5	0.0940	108	75-125			D2
Zinc	64.5		ug/L	62.5	3.27	97.9	75-125			D2



**Metals by SW846 6000 Series Methods Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch BCD2170 - EPA 200.2**

**Post Spike (BCD2170-PS2)**

**Source: 3043160-01**

Prepared: 4/25/2023 10:46, Analyzed: 4/26/2023 14:55

Boron	155		ug/L	125	27.3	102	75-125			D2
Calcium	112000		ug/L	6250	106000	94.5	75-125			D2, M3
Iron	7060		ug/L	6250	645	103	75-125			D2
Magnesium	34700		ug/L	6250	28800	94.4	75-125			D2, M1
Potassium	8000		ug/L	6250	1650	102	75-125			D2
Sodium	78600		ug/L	6250	71700	110	75-125			D2

**Batch BCD2229 - EPA 200.2**

**Blank (BCD2229-BLK1)**

Prepared: 4/26/2023 8:19, Analyzed: 4/27/2023 12:16

Antimony	ND	0.005	mg/L							U
Molybdenum	ND	0.01	mg/L							U
Arsenic	ND	0.0010	mg/L							U
Barium	ND	0.004	mg/L							U
Beryllium	ND	0.0020	mg/L							U
Cadmium	ND	0.0010	mg/L							U
Chromium	ND	0.0020	mg/L							U
Cobalt	ND	0.004	mg/L							U
Copper	ND	0.003	mg/L							U
Lead	ND	0.002	mg/L							U
Lithium	ND	0.02	mg/L							U
Nickel	ND	0.003	mg/L							U
Selenium	ND	0.003	mg/L							U
Thallium	ND	0.0020	mg/L							U
Zinc	0.004	0.02	mg/L							J

**Blank (BCD2229-BLK2)**

Prepared: 4/26/2023 8:19, Analyzed: 4/27/2023 14:53

Boron	ND	0.10	mg/L							U
Calcium	ND	0.40	mg/L							U
Iron	ND	0.100	mg/L							U
Magnesium	ND	0.200	mg/L							U
Potassium	ND	0.50	mg/L							U
Sodium	ND	0.26	mg/L							U



**Metals by SW846 6000 Series Methods Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch BCD2229 - EPA 200.2**

**LCS (BCD2229-BS1)**

Prepared: 4/26/2023 8:19, Analyzed: 4/27/2023 12:18

Molybdenum	0.06	0.01	mg/L	0.0625		103	85-115			
Antimony	0.067	0.005	mg/L	0.0625		107	85-115			
Arsenic	0.0645	0.0010	mg/L	0.0625		103	85-115			
Barium	0.063	0.004	mg/L	0.0625		101	85-115			
Beryllium	0.0647	0.0020	mg/L	0.0625		104	85-115			
Cadmium	0.0646	0.0010	mg/L	0.0625		103	85-115			
Chromium	0.0654	0.0020	mg/L	0.0625		105	85-115			
Cobalt	0.065	0.004	mg/L	0.0625		104	85-115			
Copper	0.064	0.003	mg/L	0.0625		103	85-115			
Lead	0.062	0.002	mg/L	0.0625		99.2	85-115			
Lithium	0.06	0.02	mg/L	0.0625		104	85-115			
Nickel	0.065	0.003	mg/L	0.0625		104	85-115			
Selenium	0.065	0.003	mg/L	0.0625		104	85-115			
Thallium	0.0625	0.0020	mg/L	0.0625		100	85-115			
Zinc	0.07	0.02	mg/L	0.0625		107	85-115			

**LCS (BCD2229-BS2)**

Prepared: 4/26/2023 8:19, Analyzed: 4/27/2023 14:56

Boron	0.13	0.10	mg/L	0.125		102	85-115			
Calcium	6.37	0.40	mg/L	6.25		102	85-115			
Iron	6.36	0.100	mg/L	6.25		102	85-115			
Magnesium	6.24	0.200	mg/L	6.25		99.9	85-115			
Potassium	6.31	0.50	mg/L	6.25		101	85-115			
Sodium	5.92	0.26	mg/L	6.25		94.8	85-115			

**Matrix Spike (BCD2229-MS1)**

Source: 3043162-01

Prepared: 4/26/2023 8:19, Analyzed: 4/27/2023 12:29

Molybdenum	0.07	0.01	mg/L	0.0625	0.006	95.9	80-120			
Antimony	0.066	0.005	mg/L	0.0625	ND	105	80-120			
Arsenic	0.0662	0.0010	mg/L	0.0625	0.0025	102	80-120			
Barium	0.079	0.004	mg/L	0.0625	0.017	99.1	80-120			
Beryllium	0.0514	0.0020	mg/L	0.0625	ND	82.2	80-120			
Cadmium	0.0585	0.0010	mg/L	0.0625	ND	93.5	80-120			
Chromium	0.0600	0.0020	mg/L	0.0625	ND	95.9	80-120			
Cobalt	0.061	0.004	mg/L	0.0625	0.004	90.3	80-120			
Copper	0.053	0.003	mg/L	0.0625	ND	84.8	80-120			
Lead	0.057	0.002	mg/L	0.0625	ND	90.8	80-120			
Lithium	0.10	0.02	mg/L	0.0625	0.06	70.0	80-120			M2
Nickel	0.063	0.003	mg/L	0.0625	0.009	86.8	80-120			
Selenium	0.067	0.003	mg/L	0.0625	ND	107	80-120			
Thallium	0.0572	0.0020	mg/L	0.0625	ND	91.5	80-120			
Zinc	0.06	0.02	mg/L	0.0625	0.004	88.9	80-120			





**Metals by SW846 6000 Series Methods Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch BCD2229 - EPA 200.2**

**Matrix Spike (BCD2229-MS2) Source: 3043162-01**

Prepared: 4/26/2023 8:19, Analyzed: 4/27/2023 15:40

Boron	2.61	0.10	mg/L	0.125	2.62	NR	80-120			M3
Calcium	517	0.40	mg/L	6.25	553	NR	80-120			M3, E
Iron	17.7	0.100	mg/L	6.25	12.5	84.0	80-120			
Magnesium	76.6	0.200	mg/L	6.25	120	NR	80-120			M3
Potassium	16.9	0.50	mg/L	6.25	10.6	101	80-120			
Sodium	85.5	0.26	mg/L	6.25	80.1	86.6	80-120			M3

**Matrix Spike Dup (BCD2229-MSD1) Source: 3043162-01**

Prepared: 4/26/2023 8:19, Analyzed: 4/27/2023 12:44

Molybdenum	0.07	0.01	mg/L	0.0625	0.006	96.9	80-120	0.896	20	
Antimony	0.067	0.005	mg/L	0.0625	ND	107	80-120	1.97	20	
Arsenic	0.0665	0.0010	mg/L	0.0625	0.0025	102	80-120	0.466	20	
Barium	0.079	0.004	mg/L	0.0625	0.017	98.5	80-120	0.446	20	
Beryllium	0.0522	0.0020	mg/L	0.0625	ND	83.4	80-120	1.54	20	
Cadmium	0.0585	0.0010	mg/L	0.0625	ND	93.5	80-120	0.00	20	
Chromium	0.0598	0.0020	mg/L	0.0625	ND	95.7	80-120	0.200	20	
Cobalt	0.061	0.004	mg/L	0.0625	0.004	90.3	80-120	0.0330	20	
Copper	0.053	0.003	mg/L	0.0625	ND	84.4	80-120	0.503	20	
Lead	0.056	0.002	mg/L	0.0625	ND	89.9	80-120	0.926	20	
Lithium	0.10	0.02	mg/L	0.0625	0.06	74.1	80-120	2.49	20	M2
Nickel	0.064	0.003	mg/L	0.0625	0.009	87.3	80-120	0.537	20	
Selenium	0.068	0.003	mg/L	0.0625	ND	109	80-120	2.19	20	
Thallium	0.0571	0.0020	mg/L	0.0625	ND	91.3	80-120	0.159	20	
Zinc	0.06	0.02	mg/L	0.0625	0.004	93.5	80-120	5.11	20	

**Matrix Spike Dup (BCD2229-MSD2) Source: 3043162-01**

Prepared: 4/26/2023 8:19, Analyzed: 4/27/2023 15:44

Boron	2.71	0.10	mg/L	0.125	2.62	70.9	80-120	3.74	20	M3
Calcium	524	0.40	mg/L	6.25	553	NR	80-120	1.46	20	M3, E
Iron	17.9	0.100	mg/L	6.25	12.5	87.0	80-120	1.03	20	
Magnesium	77.1	0.200	mg/L	6.25	120	NR	80-120	0.694	20	M3
Potassium	17.1	0.50	mg/L	6.25	10.6	104	80-120	1.07	20	
Sodium	87.0	0.26	mg/L	6.25	80.1	109	80-120	1.64	20	M3



**Metals by SW846 6000 Series Methods Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch BCD2229 - EPA 200.2**

**Post Spike (BCD2229-PS1) Source: 3043162-01**

Prepared: 4/26/2023 8:19, Analyzed: 4/27/2023 12:46

Antimony	61.5		ug/L	62.5	0.333	97.9	75-125			
Molybdenum	65.5		ug/L	62.5	6.38	94.5	75-125			
Arsenic	64.1		ug/L	62.5	2.47	98.7	75-125			
Barium	76.3		ug/L	62.5	17.0	94.8	75-125			
Beryllium	50.3		ug/L	62.5	0.0620	80.4	75-125			
Cadmium	57.7		ug/L	62.5	0.0300	92.3	75-125			
Chromium	57.9		ug/L	62.5	0.194	92.4	75-125			
Cobalt	58.5		ug/L	62.5	4.12	87.0	75-125			
Copper	51.3		ug/L	62.5	0.234	81.7	75-125			
Lead	54.7		ug/L	62.5	-0.201	87.5	75-115			
Lithium	98.4		ug/L	62.5	56.1	67.7	75-125			M2
Nickel	61.5		ug/L	62.5	8.93	84.1	75-125			
Selenium	65.8		ug/L	62.5	0.439	105	75-125			
Thallium	55.8		ug/L	62.5	0.0700	89.2	75-125			
Zinc	55.0		ug/L	62.5	3.69	82.0	75-125			

**Post Spike (BCD2229-PS2)**

**Source: 3043162-01**

Prepared: 4/26/2023 8:19, Analyzed: 4/27/2023 15:47

Boron	2640		ug/L	125	2620	18.6	75-125			M3
Calcium	517000		ug/L	6250	553000	NR	75-125			M3
Iron	17500		ug/L	6250	12500	81.1	75-125			
Magnesium	76300		ug/L	6250	120000	NR	75-125			M3
Potassium	16700		ug/L	6250	10600	98.1	75-125			
Sodium	85400		ug/L	6250	80100	84.1	75-125			M3

**Batch BCD2496 - EPA 200.2**

**Blank (BCD2496-BLK1)**

Prepared: 4/27/2023 11:44, Analyzed: 4/28/2023 13:50

Boron	ND	0.10	mg/L							U
Calcium	ND	0.40	mg/L							U
Iron	ND	0.100	mg/L							U
Magnesium	ND	0.200	mg/L							U
Potassium	ND	0.50	mg/L							U
Sodium	ND	0.26	mg/L							U



**Metals by SW846 6000 Series Methods Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch BCD2496 - EPA 200.2**

**Blank (BCD2496-BLK2)**

Prepared: 4/27/2023 11:44, Analyzed: 4/28/2023 15:30

Molybdenum	ND	0.01	mg/L							U
Antimony	ND	0.005	mg/L							U
Arsenic	ND	0.0010	mg/L							U
Barium	ND	0.004	mg/L							U
Beryllium	ND	0.0020	mg/L							U
Cadmium	ND	0.0010	mg/L							U
Chromium	ND	0.0020	mg/L							U
Cobalt	ND	0.004	mg/L							U
Copper	ND	0.003	mg/L							U
Lead	ND	0.002	mg/L							U
Lithium	ND	0.02	mg/L							U
Nickel	ND	0.003	mg/L							U
Selenium	ND	0.003	mg/L							U
Thallium	ND	0.0020	mg/L							U
Zinc	ND	0.02	mg/L							U

**LCS (BCD2496-BS1)**

Prepared: 4/27/2023 11:44, Analyzed: 4/28/2023 13:54

Boron	0.13	0.10	mg/L	0.125		100	85-115			
Calcium	6.41	0.40	mg/L	6.25		102	85-115			
Iron	6.29	0.100	mg/L	6.25		101	85-115			
Magnesium	6.23	0.200	mg/L	6.25		99.6	85-115			
Potassium	6.30	0.50	mg/L	6.25		101	85-115			
Sodium	5.93	0.26	mg/L	6.25		94.9	85-115			

**LCS (BCD2496-BS2)**

Prepared: 4/27/2023 11:44, Analyzed: 4/28/2023 15:33

Molybdenum	0.06	0.01	mg/L	0.0625		101	85-115			
Antimony	0.070	0.005	mg/L	0.0625		112	85-115			
Arsenic	0.0630	0.0010	mg/L	0.0625		101	85-115			
Barium	0.069	0.004	mg/L	0.0625		110	85-115			
Beryllium	0.0679	0.0020	mg/L	0.0625		109	85-115			
Cadmium	0.0682	0.0010	mg/L	0.0625		109	85-115			
Chromium	0.0644	0.0020	mg/L	0.0625		103	85-115			
Cobalt	0.063	0.004	mg/L	0.0625		101	85-115			
Copper	0.063	0.003	mg/L	0.0625		101	85-115			
Lead	0.068	0.002	mg/L	0.0625		108	85-115			
Lithium	0.07	0.02	mg/L	0.0625		109	85-115			
Nickel	0.063	0.003	mg/L	0.0625		102	85-115			
Selenium	0.067	0.003	mg/L	0.0625		107	85-115			
Thallium	0.0685	0.0020	mg/L	0.0625		110	85-115			
Zinc	0.07	0.02	mg/L	0.0625		105	85-115			



**Metals by SW846 6000 Series Methods Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch BCD2496 - EPA 200.2</b>										
<b>Matrix Spike (BCD2496-MS1) Source: 3043157-01</b>										
Prepared: 4/27/2023 11:44, Analyzed: 4/28/2023 17:19										
Boron	ND	1.00	mg/L	0.125	ND		80-120			D2, U
Calcium	552	4.00	mg/L	6.25	521	488	80-120			D2, M3
Iron	71.5	1.00	mg/L	6.25	58.7	203	80-120			D2, M1
Magnesium	193	2.00	mg/L	6.25	196	NR	80-120			D2, M3
Potassium	15.2	5.00	mg/L	6.25	8.15	113	80-120			D2
Sodium	109	2.60	mg/L	6.25	94.8	221	80-120			D2, M3
<b>Matrix Spike (BCD2496-MS2) Source: 3043170-01</b>										
Prepared: 4/27/2023 11:44, Analyzed: 4/28/2023 17:25										
Boron	1.53	1.00	mg/L	0.125	1.45	60.2	80-120			D2
Calcium	339	4.00	mg/L	6.25	385	NR	80-120			D2, M3
Iron	23.4	1.00	mg/L	6.25	18.1	83.4	80-120			D2
Magnesium	94.3	2.00	mg/L	6.25	95.0	NR	80-120			M1, D2
Potassium	15.8	5.00	mg/L	6.25	9.60	99.4	80-120			D2
Sodium	74.5	2.60	mg/L	6.25	74.3	2.98	80-120			D2, M2
<b>Matrix Spike (BCD2496-MS3) Source: 3043157-01</b>										
Prepared: 4/27/2023 11:44, Analyzed: 4/28/2023 17:16										
Antimony	0.064	0.005	mg/L	0.0625	ND	103	80-120			
Molybdenum	0.06	0.01	mg/L	0.0625	0.002	91.9	80-120			
Arsenic	0.0647	0.0010	mg/L	0.0625	0.0016	101	80-120			
Barium	0.070	0.004	mg/L	0.0625	0.007	101	80-120			
Beryllium	0.0583	0.0020	mg/L	0.0625	ND	93.2	80-120			
Cadmium	0.0617	0.0010	mg/L	0.0625	0.0035	93.0	80-120			
Chromium	0.0637	0.0020	mg/L	0.0625	0.0006	102	80-120			
Cobalt	0.344	0.004	mg/L	0.0625	0.290	86.8	80-120			
Copper	0.060	0.003	mg/L	0.0625	ND	96.1	80-120			
Lead	0.059	0.002	mg/L	0.0625	ND	94.9	80-120			
Lithium	0.21	0.02	mg/L	0.0625	0.15	108	80-120			
Nickel	0.706	0.003	mg/L	0.0625	0.657	78.7	80-120			M2
Selenium	0.056	0.003	mg/L	0.0625	ND	88.8	80-120			
Thallium	0.0610	0.0020	mg/L	0.0625	0.0003	97.2	80-120			
Zinc	0.98	0.02	mg/L	0.0625	1.02	NR	80-120			M3, E



**Metals by SW846 6000 Series Methods Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch BCD2496 - EPA 200.2**

**Matrix Spike (BCD2496-MS4) Source: 3043170-01**

Prepared: 4/27/2023 11:44, Analyzed: 4/28/2023 17:27

Antimony	0.066	0.005	mg/L	0.0625	ND	106	80-120			
Molybdenum	0.08	0.01	mg/L	0.0625	0.01	99.2	80-120			
Arsenic	0.0706	0.0010	mg/L	0.0625	0.0074	101	80-120			
Barium	0.078	0.004	mg/L	0.0625	0.013	104	80-120			
Beryllium	0.0582	0.0020	mg/L	0.0625	ND	93.0	80-120			
Cadmium	0.0606	0.0010	mg/L	0.0625	0.0001	96.8	80-120			
Chromium	0.0646	0.0020	mg/L	0.0625	0.0006	102	80-120			
Cobalt	0.087	0.004	mg/L	0.0625	0.026	97.2	80-120			
Copper	0.063	0.003	mg/L	0.0625	0.003	96.2	80-120			
Lead	0.060	0.002	mg/L	0.0625	ND	96.6	80-120			
Lithium	0.12	0.02	mg/L	0.0625	0.05	113	80-120			
Nickel	0.103	0.003	mg/L	0.0625	0.040	99.2	80-120			
Selenium	0.059	0.003	mg/L	0.0625	ND	95.0	80-120			
Thallium	0.0612	0.0020	mg/L	0.0625	ND	98.0	80-120			
Zinc	0.10	0.02	mg/L	0.0625	0.04	97.6	80-120			

**Matrix Spike Dup (BCD2496-MSD1) Source: 3043157-01**

Prepared: 4/27/2023 11:44, Analyzed: 4/28/2023 17:22

Boron	ND	1.00	mg/L	0.125	ND		80-120		20	D2, U
Calcium	514	4.00	mg/L	6.25	521	NR	80-120	7.01	20	D2, M3
Iron	66.3	1.00	mg/L	6.25	58.7	121	80-120	7.46	20	D2, M1
Magnesium	181	2.00	mg/L	6.25	196	NR	80-120	6.68	20	D2, M3
Potassium	14.3	5.00	mg/L	6.25	8.15	98.1	80-120	6.14	20	D2
Sodium	102	2.60	mg/L	6.25	94.8	118	80-120	6.11	20	D2, M3

**Matrix Spike Dup (BCD2496-MSD2) Source: 3043170-01**

Prepared: 4/27/2023 11:44, Analyzed: 4/28/2023 17:38

Boron	1.58	1.00	mg/L	0.125	1.45	102	80-120	3.32	20	D2
Calcium	354	4.00	mg/L	6.25	385	NR	80-120	4.37	20	D2, M3
Iron	24.2	1.00	mg/L	6.25	18.1	96.3	80-120	3.40	20	D2
Magnesium	97.9	2.00	mg/L	6.25	95.0	47.6	80-120	3.74	20	D2, M1
Potassium	16.3	5.00	mg/L	6.25	9.60	107	80-120	3.06	20	D2
Sodium	77.9	2.60	mg/L	6.25	74.3	56.6	80-120	4.40	20	D2





**Metals by SW846 6000 Series Methods Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch BCD2496 - EPA 200.2**

**Matrix Spike Dup (BCD2496-MSD3) Source: 3043157-01**

Prepared: 4/27/2023 11:44, Analyzed: 4/28/2023 17:23

Antimony	0.065	0.005	mg/L	0.0625	ND	104	80-120	0.653	20	
Molybdenum	0.06	0.01	mg/L	0.0625	0.002	92.1	80-120	0.134	20	
Arsenic	0.0652	0.0010	mg/L	0.0625	0.0016	102	80-120	0.789	20	
Barium	0.070	0.004	mg/L	0.0625	0.007	101	80-120	0.486	20	
Beryllium	0.0567	0.0020	mg/L	0.0625	ND	90.8	80-120	2.64	20	
Cadmium	0.0624	0.0010	mg/L	0.0625	0.0035	94.2	80-120	1.20	20	
Chromium	0.0644	0.0020	mg/L	0.0625	0.0006	103	80-120	1.05	20	
Cobalt	0.346	0.004	mg/L	0.0625	0.290	89.5	80-120	0.487	20	
Copper	0.061	0.003	mg/L	0.0625	ND	97.3	80-120	1.24	20	
Lead	0.059	0.002	mg/L	0.0625	ND	95.2	80-120	0.309	20	
Lithium	0.21	0.02	mg/L	0.0625	0.15	105	80-120	0.931	20	
Nickel	0.709	0.003	mg/L	0.0625	0.657	83.7	80-120	0.442	20	
Selenium	0.056	0.003	mg/L	0.0625	ND	90.4	80-120	1.76	20	
Thallium	0.0612	0.0020	mg/L	0.0625	0.0003	97.5	80-120	0.313	20	
Zinc	0.98	0.02	mg/L	0.0625	1.02	NR	80-120	0.0499	20	M3, E

**Matrix Spike Dup (BCD2496-MSD4) Source: 3043170-01**

Prepared: 4/27/2023 11:44, Analyzed: 4/28/2023 17:31

Antimony	0.065	0.005	mg/L	0.0625	ND	105	80-120	0.960	20	
Molybdenum	0.08	0.01	mg/L	0.0625	0.01	101	80-120	1.32	20	
Arsenic	0.0707	0.0010	mg/L	0.0625	0.0074	101	80-120	0.116	20	
Barium	0.077	0.004	mg/L	0.0625	0.013	102	80-120	1.49	20	
Beryllium	0.0573	0.0020	mg/L	0.0625	ND	91.7	80-120	1.43	20	
Cadmium	0.0599	0.0010	mg/L	0.0625	0.0001	95.6	80-120	1.19	20	
Chromium	0.0654	0.0020	mg/L	0.0625	0.0006	104	80-120	1.24	20	
Cobalt	0.087	0.004	mg/L	0.0625	0.026	98.6	80-120	1.02	20	
Copper	0.064	0.003	mg/L	0.0625	0.003	96.7	80-120	0.497	20	
Lead	0.060	0.002	mg/L	0.0625	ND	95.3	80-120	1.37	20	
Lithium	0.12	0.02	mg/L	0.0625	0.05	111	80-120	1.32	20	
Nickel	0.103	0.003	mg/L	0.0625	0.040	100	80-120	0.740	20	
Selenium	0.063	0.003	mg/L	0.0625	ND	100	80-120	5.57	20	
Thallium	0.0603	0.0020	mg/L	0.0625	ND	96.5	80-120	1.51	20	
Zinc	0.10	0.02	mg/L	0.0625	0.04	94.7	80-120	1.80	20	



**Metals by SW846 6000 Series Methods Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch BCD2496 - EPA 200.2**

**Post Spike (BCD2496-PS1) Source: 3043157-01**

Prepared: 4/27/2023 11:44, Analyzed: 4/28/2023 17:41

Boron	136		ug/L	125	185	NR	75-125			D2
Calcium	6580		ug/L	6250	521000	NR	75-125			M2, D2
Iron	6480		ug/L	6250	58700	NR	75-125			D2, M2
Magnesium	6570		ug/L	6250	196000	NR	75-125			D2, M2
Potassium	6640		ug/L	6250	8150	NR	75-125			D2, M2
Sodium	6090		ug/L	6250	94800	NR	75-125			D2, M2

**Post Spike (BCD2496-PS2) Source: 3043157-01**

Prepared: 4/27/2023 11:44, Analyzed: 4/28/2023 17:35

Antimony	58.7		ug/L	62.5	0.131	93.7	75-125			
Molybdenum	64.6		ug/L	62.5	2.27	99.7	75-125			
Arsenic	63.4		ug/L	62.5	1.60	98.8	75-125			
Barium	64.7		ug/L	62.5	7.07	92.2	75-125			
Beryllium	61.0		ug/L	62.5	0.190	97.3	75-125			
Cadmium	62.4		ug/L	62.5	3.54	94.1	75-125			
Chromium	65.6		ug/L	62.5	0.563	104	75-125			
Cobalt	63.8		ug/L	62.5	290	NR	75-125			M2
Copper	64.1		ug/L	62.5	0.641	102	75-125			
Lead	61.6		ug/L	62.5	0.030	98.4	75-115			
Lithium	63.6		ug/L	62.5	146	NR	75-125			M2
Nickel	64.5		ug/L	62.5	657	NR	75-125			M2
Selenium	65.7		ug/L	62.5	0.285	105	75-125			
Thallium	62.2		ug/L	62.5	0.253	99.1	75-125			
Zinc	67.6		ug/L	62.5	1020	NR	75-125			M2

**Batch BCD2654 - EPA 200.2**

**Blank (BCD2654-BLK1)**

Prepared: 4/28/2023 12:26, Analyzed: 5/1/2023 14:16

Boron	ND	0.10	mg/L							U
Calcium	ND	0.40	mg/L							U
Iron	ND	0.100	mg/L							U
Magnesium	ND	0.200	mg/L							U
Potassium	ND	0.50	mg/L							U
Sodium	ND	0.26	mg/L							U



**Metals by SW846 6000 Series Methods Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch BCD2654 - EPA 200.2**

**Blank (BCD2654-BLK2)**

Prepared: 4/28/2023 12:26, Analyzed: 5/2/2023 14:15

Sodium	ND	0.26	mg/L							U
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**Blank (BCD2654-BLK3)**

Prepared: 4/28/2023 12:26, Analyzed: 5/2/2023 14:43

Antimony	ND	0.005	mg/L							U
Molybdenum	ND	0.01	mg/L							U
Arsenic	ND	0.0010	mg/L							U
Barium	ND	0.004	mg/L							U
Beryllium	ND	0.0020	mg/L							U
Cadmium	ND	0.0010	mg/L							U
Chromium	ND	0.0020	mg/L							U
Cobalt	ND	0.004	mg/L							U
Copper	ND	0.003	mg/L							U
Lead	ND	0.002	mg/L							U
Lithium	ND	0.02	mg/L							U
Nickel	ND	0.003	mg/L							U
Selenium	ND	0.003	mg/L							U
Thallium	ND	0.0020	mg/L							U
Zinc	ND	0.02	mg/L							U

**LCS (BCD2654-BS1)**

Prepared: 4/28/2023 12:26, Analyzed: 5/1/2023 14:19

Boron	0.13	0.10	mg/L	0.125		100	85-115			
Calcium	6.38	0.40	mg/L	6.25		102	85-115			
Iron	6.32	0.100	mg/L	6.25		101	85-115			
Magnesium	6.29	0.200	mg/L	6.25		101	85-115			
Potassium	6.37	0.50	mg/L	6.25		102	85-115			
Sodium	5.27	0.26	mg/L	6.25		84.4	85-115			L2

**LCS (BCD2654-BS2)**

Prepared: 4/28/2023 12:26, Analyzed: 5/2/2023 14:18

Sodium	5.49	0.26	mg/L	6.25		87.8	85-115			
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**Metals by SW846 6000 Series Methods Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch BCD2654 - EPA 200.2**

**LCS (BCD2654-BS3)**

Prepared: 4/28/2023 12:26, Analyzed: 5/2/2023 14:47

Molybdenum	0.06	0.01	mg/L	0.0625		91.4	85-115			
Antimony	0.062	0.005	mg/L	0.0625		99.7	85-115			
Arsenic	0.0581	0.0010	mg/L	0.0625		92.9	85-115			
Barium	0.063	0.004	mg/L	0.0625		100	85-115			
Beryllium	0.0615	0.0020	mg/L	0.0625		98.4	85-115			
Cadmium	0.0613	0.0010	mg/L	0.0625		98.1	85-115			
Chromium	0.0585	0.0020	mg/L	0.0625		93.7	85-115			
Cobalt	0.058	0.004	mg/L	0.0625		92.0	85-115			
Copper	0.058	0.003	mg/L	0.0625		92.7	85-115			
Lead	0.061	0.002	mg/L	0.0625		98.1	85-115			
Lithium	0.06	0.02	mg/L	0.0625		98.2	85-115			
Nickel	0.059	0.003	mg/L	0.0625		93.8	85-115			
Selenium	0.062	0.003	mg/L	0.0625		99.2	85-115			
Thallium	0.0624	0.0020	mg/L	0.0625		99.8	85-115			
Zinc	0.06	0.02	mg/L	0.0625		93.0	85-115			

**Matrix Spike (BCD2654-MS1)**

Source: 3043773-01

Prepared: 4/28/2023 12:26, Analyzed: 5/1/2023 14:39

Boron	0.12	0.10	mg/L	0.125	ND	99.4	80-120			
Calcium	6.39	0.40	mg/L	6.25	ND	102	80-120			
Iron	6.27	0.100	mg/L	6.25	ND	100	80-120			
Magnesium	6.23	0.200	mg/L	6.25	ND	99.7	80-120			
Potassium	6.29	0.50	mg/L	6.25	ND	101	80-120			
Sodium	5.24	0.26	mg/L	6.25	ND	83.8	80-120			

**Matrix Spike (BCD2654-MS2)**

Source: 3043773-01

Prepared: 4/28/2023 12:26, Analyzed: 5/2/2023 14:58

Antimony	0.063	0.005	mg/L	0.0625	ND	101	80-120			
Molybdenum	0.06	0.01	mg/L	0.0625	ND	93.9	80-120			
Arsenic	0.0600	0.0010	mg/L	0.0625	ND	96.0	80-120			
Barium	0.063	0.004	mg/L	0.0625	ND	101	80-120			
Beryllium	0.0625	0.0020	mg/L	0.0625	ND	100	80-120			
Cadmium	0.0627	0.0010	mg/L	0.0625	ND	100	80-120			
Chromium	0.0611	0.0020	mg/L	0.0625	ND	97.7	80-120			
Cobalt	0.059	0.004	mg/L	0.0625	ND	95.0	80-120			
Copper	0.059	0.003	mg/L	0.0625	ND	95.1	80-120			
Lead	0.062	0.002	mg/L	0.0625	ND	99.3	80-120			
Lithium	0.06	0.02	mg/L	0.0625	ND	98.8	80-120			
Nickel	0.059	0.003	mg/L	0.0625	ND	94.7	80-120			
Selenium	0.063	0.003	mg/L	0.0625	ND	101	80-120			
Thallium	0.0625	0.0020	mg/L	0.0625	ND	100	80-120			
Zinc	0.06	0.02	mg/L	0.0625	ND	98.8	80-120			



**Metals by SW846 6000 Series Methods Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch BCD2654 - EPA 200.2**

**Matrix Spike Dup (BCD2654-MSD1) Source: 3043773-01**

Prepared: 4/28/2023 12:26, Analyzed: 5/1/2023 14:42

Boron	0.13	0.10	mg/L	0.125	ND	101	80-120	1.20	20	
Calcium	6.39	0.40	mg/L	6.25	ND	102	80-120	0.0194	20	
Iron	6.27	0.100	mg/L	6.25	ND	100	80-120	0.0290	20	
Magnesium	6.23	0.200	mg/L	6.25	ND	99.7	80-120	0.0448	20	
Potassium	6.30	0.50	mg/L	6.25	ND	101	80-120	0.283	20	
Sodium	5.24	0.26	mg/L	6.25	ND	83.8	80-120	0.00191	20	

**Matrix Spike Dup (BCD2654-MSD2) Source: 3043773-01**

Prepared: 4/28/2023 12:26, Analyzed: 5/2/2023 15:02

Molybdenum	0.06	0.01	mg/L	0.0625	ND	90.9	80-120	3.25	20	
Antimony	0.060	0.005	mg/L	0.0625	ND	96.4	80-120	5.00	20	
Arsenic	0.0580	0.0010	mg/L	0.0625	ND	92.8	80-120	3.38	20	
Barium	0.061	0.004	mg/L	0.0625	ND	97.0	80-120	4.39	20	
Beryllium	0.0597	0.0020	mg/L	0.0625	ND	95.6	80-120	4.59	20	
Cadmium	0.0596	0.0010	mg/L	0.0625	ND	95.4	80-120	5.07	20	
Chromium	0.0589	0.0020	mg/L	0.0625	ND	94.2	80-120	3.69	20	
Cobalt	0.058	0.004	mg/L	0.0625	ND	92.3	80-120	2.92	20	
Copper	0.058	0.003	mg/L	0.0625	ND	92.6	80-120	2.58	20	
Lead	0.059	0.002	mg/L	0.0625	ND	95.0	80-120	4.46	20	
Lithium	0.06	0.02	mg/L	0.0625	ND	94.3	80-120	4.67	20	
Nickel	0.058	0.003	mg/L	0.0625	ND	92.8	80-120	2.01	20	
Selenium	0.062	0.003	mg/L	0.0625	ND	98.7	80-120	2.08	20	
Thallium	0.0596	0.0020	mg/L	0.0625	ND	95.3	80-120	4.77	20	
Zinc	0.06	0.02	mg/L	0.0625	ND	94.9	80-120	4.07	20	

**Post Spike (BCD2654-PS1) Source: 3043773-01**

Prepared: 4/28/2023 12:26, Analyzed: 5/1/2023 14:45

Boron	125		ug/L	125	1.77	98.7	75-125			
Calcium	6420		ug/L	6250	77.7	101	75-125			
Iron	6290		ug/L	6250	11.3	100	75-125			
Magnesium	6260		ug/L	6250	5.75	100	75-125			
Potassium	6360		ug/L	6250	115	99.9	75-125			
Sodium	5250		ug/L	6250	29.7	83.6	75-125			





**Metals by SW846 6000 Series Methods Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch BCD2654 - EPA 200.2</b>										
<b>Post Spike (BCD2654-PS2) Source: 3043773-01</b>										
Prepared: 4/28/2023 12:26, Analyzed: 5/2/2023 15:06										
Antimony	59.1		ug/L	62.5	0.159	94.4	75-125			
Molybdenum	57.4		ug/L	62.5	0.02	91.8	75-125			
Arsenic	59.3		ug/L	62.5	-0.0018	94.8	75-125			
Barium	61.0		ug/L	62.5	0.153	97.4	75-125			
Beryllium	59.9		ug/L	62.5	-0.0112	95.8	75-125			
Cadmium	60.2		ug/L	62.5	0.0049	96.3	75-125			
Chromium	60.1		ug/L	62.5	0.256	95.7	75-125			
Cobalt	58.4		ug/L	62.5	-0.005	93.4	75-125			
Copper	58.8		ug/L	62.5	0.417	93.5	75-125			
Lead	59.8		ug/L	62.5	0.445	95.0	75-115			
Lithium	58.9		ug/L	62.5	0.05	94.2	75-125			
Nickel	59.3		ug/L	62.5	0.191	94.6	75-125			
Selenium	61.6		ug/L	62.5	0.019	98.5	75-125			
Thallium	59.9		ug/L	62.5	0.0429	95.8	75-125			
Zinc	59.7		ug/L	62.5	3.65	89.6	75-125			



**Metals by EPA 200 Series Methods Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch BCD2317 - Default Prep Metals</b>										
<b>Blank (BCD2317-BLK1)</b>										
Prepared: 4/26/2023 7:29, Analyzed: 4/26/2023 10:38										
Mercury	ND	5.0	ng/L							U
Mercury	ND	5.0	ng/L							U
<b>Blank (BCD2317-BLK2)</b>										
Prepared: 4/26/2023 7:29, Analyzed: 4/26/2023 10:44										
Mercury	ND	5.0	ng/L							U
Mercury	ND	5.0	ng/L							U
<b>Blank (BCD2317-BLK3)</b>										
Prepared: 4/26/2023 7:29, Analyzed: 4/26/2023 10:50										
Mercury	ND	5.0	ng/L							U
Mercury	ND	5.0	ng/L							U
<b>LCS (BCD2317-BS1)</b>										
Prepared: 4/26/2023 7:29, Analyzed: 4/26/2023 11:01										
Mercury	46.4	5.0	ng/L	50.0		92.9	76-113			
Mercury	46.4	5.0	ng/L	50.0		92.9	76-113			
<b>Matrix Spike (BCD2317-MS1) Source: 3043162-01</b>										
Prepared: 4/26/2023 7:29, Analyzed: 4/26/2023 12:37										
Mercury	32.6	5.0	ng/L	50.0	ND	65.3	63-111			
Mercury	32.6	5.0	ng/L	50.0	ND	65.3	63-111			
<b>Matrix Spike (BCD2317-MS2) Source: 3043166-01</b>										
Prepared: 4/26/2023 7:29, Analyzed: 4/26/2023 12:48										
Mercury	22.4	5.0	ng/L	50.0	ND	44.9	63-111			M2
Mercury	22.4	5.0	ng/L	50.0	ND	44.9	63-111			M2
<b>Matrix Spike Dup (BCD2317-MSD1) Source: 3043162-01</b>										
Prepared: 4/26/2023 7:29, Analyzed: 4/26/2023 12:43										
Mercury	33.9	5.0	ng/L	50.0	ND	67.9	63-111	3.91	18	
Mercury	33.9	5.0	ng/L	50.0	ND	67.9	63-111	3.91	18	
<b>Matrix Spike Dup (BCD2317-MSD2) Source: 3043166-01</b>										
Prepared: 4/26/2023 7:29, Analyzed: 4/26/2023 12:54										
Mercury	25.4	5.0	ng/L	50.0	ND	50.7	63-111	12.2	18	M2
Mercury	25.4	5.0	ng/L	50.0	ND	50.7	63-111	12.2	18	M2



**Metals by EPA 200 Series Methods Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch BCD2461 - Default Prep Metals</b>										
<b>Blank (BCD2461-BLK1)</b>										
Prepared: 4/27/2023 8:48, Analyzed: 4/27/2023 12:18										
Mercury	ND	5.0	ng/L							U
Mercury	ND	5.0	ng/L							U
<b>Blank (BCD2461-BLK2)</b>										
Prepared: 4/27/2023 8:48, Analyzed: 4/27/2023 12:23										
Mercury	ND	5.0	ng/L							U
Mercury	ND	5.0	ng/L							U
<b>Blank (BCD2461-BLK3)</b>										
Prepared: 4/27/2023 8:48, Analyzed: 4/27/2023 12:29										
Mercury	ND	5.0	ng/L							U
Mercury	ND	5.0	ng/L							U
<b>LCS (BCD2461-BS1)</b>										
Prepared: 4/27/2023 8:48, Analyzed: 4/27/2023 12:40										
Mercury	49.4	5.0	ng/L	50.0		98.8	76-113			
Mercury	49.4	5.0	ng/L	50.0		98.8	76-113			
<b>Matrix Spike (BCD2461-MS1) Source: 3043157-01</b>										
Prepared: 4/27/2023 8:48, Analyzed: 4/27/2023 14:50										
Mercury	24.9	5.0	ng/L	50.0	ND	49.9	63-111			M2
Mercury	24.9	5.0	ng/L	50.0	ND	49.9	63-111			M2
<b>Matrix Spike (BCD2461-MS2) Source: 3043163-01</b>										
Prepared: 4/27/2023 8:48, Analyzed: 4/27/2023 15:02										
Mercury	40.2	5.0	ng/L	50.0	ND	80.4	63-111			
Mercury	40.2	5.0	ng/L	50.0	ND	80.4	63-111			
<b>Matrix Spike Dup (BCD2461-MSD1) Source: 3043157-01</b>										
Prepared: 4/27/2023 8:48, Analyzed: 4/27/2023 14:56										
Mercury	30.7	5.0	ng/L	50.0	ND	61.3	63-111	20.5	18	M2, Y5
Mercury	30.7	5.0	ng/L	50.0	ND	61.3	63-111	20.5	18	M2, Y5
<b>Matrix Spike Dup (BCD2461-MSD2) Source: 3043163-01</b>										
Prepared: 4/27/2023 8:48, Analyzed: 4/27/2023 15:07										
Mercury	41.1	5.0	ng/L	50.0	ND	82.3	63-111	2.22	18	
Mercury	41.1	5.0	ng/L	50.0	ND	82.3	63-111	2.22	18	



**Metals by EPA 200 Series Methods Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch BCD2622 - Default Prep Metals</b>										
<b>Blank (BCD2622-BLK1)</b>										
Prepared: 4/28/2023 9:21, Analyzed: 4/28/2023 12:32										
Mercury	ND	5.0	ng/L							U
Mercury	ND	5.0	ng/L							U
<b>Blank (BCD2622-BLK2)</b>										
Prepared: 4/28/2023 9:21, Analyzed: 4/28/2023 12:38										
Mercury	ND	5.0	ng/L							U
Mercury	ND	5.0	ng/L							U
<b>Blank (BCD2622-BLK3)</b>										
Prepared: 4/28/2023 9:21, Analyzed: 4/28/2023 12:44										
Mercury	ND	5.0	ng/L							U
Mercury	ND	5.0	ng/L							U
<b>LCS (BCD2622-BS1)</b>										
Prepared: 4/28/2023 9:21, Analyzed: 4/28/2023 12:55										
Mercury	51.8	5.0	ng/L	50.0		104	76-113			
Mercury	51.8	5.0	ng/L	50.0		104	76-113			
<b>Matrix Spike (BCD2622-MS1) Source: 3043158-01</b>										
Prepared: 4/28/2023 9:21, Analyzed: 4/28/2023 15:39										
Mercury	29.5	5.0	ng/L	50.0	ND	58.9	63-111			M2
Mercury	29.5	5.0	ng/L	50.0	ND	58.9	63-111			M2
<b>Matrix Spike (BCD2622-MS2) Source: 3043171-01</b>										
Prepared: 4/28/2023 9:21, Analyzed: 4/28/2023 15:50										
Mercury	28.9	5.0	ng/L	50.0	ND	57.8	63-111			M2
Mercury	28.9	5.0	ng/L	50.0	ND	57.8	63-111			M2
<b>Matrix Spike Dup (BCD2622-MSD1) Source: 3043158-01</b>										
Prepared: 4/28/2023 9:21, Analyzed: 4/28/2023 15:45										
Mercury	33.5	5.0	ng/L	50.0	ND	67.0	63-111	12.8	18	
Mercury	33.5	5.0	ng/L	50.0	ND	67.0	63-111	12.8	18	
<b>Matrix Spike Dup (BCD2622-MSD2) Source: 3043171-01</b>										
Prepared: 4/28/2023 9:21, Analyzed: 4/28/2023 15:56										
Mercury	29.3	5.0	ng/L	50.0	ND	58.6	63-111	1.44	18	M2
Mercury	29.3	5.0	ng/L	50.0	ND	58.6	63-111	1.44	18	M2



**Conventional Chemistry Analyses Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch BCD2037 - Default Prep Micro</b>										
<b>Blank (BCD2037-BLK1)</b>										
Prepared: 4/26/2023 8:54, Analyzed: 4/26/2023 11:51										
Specific Conductance (Lab)	ND	1	umhos/cm							U
<b>LCS (BCD2037-BS1)</b>										
Prepared: 4/26/2023 8:54, Analyzed: 4/26/2023 11:51										
Specific Conductance (Lab)	1400		umhos/cm	1410		99.2	80-120			
<b>Duplicate (BCD2037-DUP1) Source: 3043903-01</b>										
Prepared: 4/26/2023 8:54, Analyzed: 4/26/2023 11:51										
Specific Conductance (Lab)	157	1	umhos/cm		157			0.0636	0.938	
<b>Duplicate (BCD2037-DUP2) Source: 3044417-01</b>										
Prepared: 4/26/2023 8:54, Analyzed: 4/26/2023 11:51										
Specific Conductance (Lab)	7	1	umhos/cm		7			0.404	0.938	
<b>Batch BCD2348 - Default Prep Wet Chem</b>										
<b>Blank (BCD2348-BLK1)</b>										
Prepared: 4/26/2023 12:56, Analyzed: 4/26/2023 12:56										
Total Dissolved Solids	ND	25	mg/L							U
<b>LCS (BCD2348-BS1)</b>										
Prepared: 4/26/2023 12:56, Analyzed: 4/26/2023 12:56										
Total Dissolved Solids	1480	25	mg/L	1500		98.3	80-120			
<b>Duplicate (BCD2348-DUP1) Source: 3023765-01</b>										
Prepared: 4/26/2023 12:56, Analyzed: 4/26/2023 12:56										
Total Dissolved Solids	126	25	mg/L		121			4.05	10	
<b>Duplicate (BCD2348-DUP2) Source: 3044378-01</b>										
Prepared: 4/26/2023 12:56, Analyzed: 4/26/2023 12:56										
Total Dissolved Solids	625	125	mg/L		650			3.92	10	
<b>Batch BCD2507 - Default Prep Wet Chem</b>										
<b>Blank (BCD2507-BLK1)</b>										
Prepared: 4/28/2023 7:50, Analyzed: 4/28/2023 7:50										
Hardness as CaCO3	ND	1	mg/L							U





**Conventional Chemistry Analyses Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch BCD2507 - Default Prep Wet Chem</b>										
<b>LCS (BCD2507-BS1)</b>										
Prepared: 4/28/2023 7:50, Analyzed: 4/28/2023 7:50										
Hardness as CaCO3	228	1	mg/L	225		101	80-120			
<b>Duplicate (BCD2507-DUP1) Source: 3043163-01</b>										
Prepared: 4/28/2023 7:50, Analyzed: 4/28/2023 7:50										
Hardness as CaCO3	132	1	mg/L		128			3.08	10	
<b>Matrix Spike (BCD2507-MS1) Source: 3043163-01</b>										
Prepared: 4/28/2023 7:50, Analyzed: 4/28/2023 7:50										
Hardness as CaCO3	460	1	mg/L	318	128	104	80-120			
<b>Batch BCD2508 - Default Prep Wet Chem</b>										
<b>Blank (BCD2508-BLK1)</b>										
Prepared: 4/28/2023 7:50, Analyzed: 4/28/2023 7:50										
Hardness as CaCO3	ND	1	mg/L							U
<b>LCS (BCD2508-BS1)</b>										
Prepared: 4/28/2023 7:50, Analyzed: 4/28/2023 7:50										
Hardness as CaCO3	230	1	mg/L	225		102	80-120			
<b>Duplicate (BCD2508-DUP1) Source: 3043685-02</b>										
Prepared: 4/28/2023 7:50, Analyzed: 4/28/2023 7:50										
Hardness as CaCO3	188	1	mg/L		190			1.06	10	
<b>Matrix Spike (BCD2508-MS1) Source: 3043685-02</b>										
Prepared: 4/28/2023 7:50, Analyzed: 4/28/2023 7:50										
Hardness as CaCO3	520	1	mg/L	318	190	104	80-120			
<b>Batch BCD2510 - Default Prep Wet Chem</b>										
<b>Blank (BCD2510-BLK1)</b>										
Prepared: 4/27/2023 11:53, Analyzed: 4/28/2023 14:38										
Chemical Oxygen Demand	ND	13	mg/L							U



Conventional Chemistry Analyses Madisonville - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch BCD2510 - Default Prep Wet Chem</b>										
<b>LCS (BCD2510-BS1)</b>										
Prepared: 4/27/2023 11:53, Analyzed: 4/28/2023 14:38										
Chemical Oxygen Demand	132	13	mg/L	125		106	90-110			
<b>Duplicate (BCD2510-DUP1) Source: 3040598-01</b>										
Prepared: 4/27/2023 11:53, Analyzed: 4/28/2023 14:38										
Chemical Oxygen Demand	23	13	mg/L		20			14.0	25	
<b>Matrix Spike (BCD2510-MS1) Source: 3040598-01</b>										
Prepared: 4/27/2023 11:53, Analyzed: 4/28/2023 14:38										
Chemical Oxygen Demand	292	13	mg/L	250	20	109	90-110			
<b>Matrix Spike Dup (BCD2510-MSD1) Source: 3040598-01</b>										
Prepared: 4/27/2023 11:53, Analyzed: 4/28/2023 14:38										
Chemical Oxygen Demand	296	13	mg/L	250	20	110	90-110	1.36	10	
<b>Batch BCD2514 - Default Prep Wet Chem</b>										
<b>Blank (BCD2514-BLK1)</b>										
Prepared: 4/27/2023 11:57, Analyzed: 4/28/2023 14:44										
Chemical Oxygen Demand	ND	13	mg/L							U
<b>LCS (BCD2514-BS1)</b>										
Prepared: 4/27/2023 11:57, Analyzed: 4/28/2023 14:44										
Chemical Oxygen Demand	129	13	mg/L	125		103	90-110			
<b>Duplicate (BCD2514-DUP1) Source: 3043166-01</b>										
Prepared: 4/27/2023 11:57, Analyzed: 4/28/2023 14:44										
Chemical Oxygen Demand	19	13	mg/L		14			30.3	25	Y1
<b>Matrix Spike (BCD2514-MS1) Source: 3043166-01</b>										
Prepared: 4/27/2023 11:57, Analyzed: 4/28/2023 14:44										
Chemical Oxygen Demand	285	13	mg/L	250	14	108	90-110			
<b>Matrix Spike Dup (BCD2514-MSD1) Source: 3043166-01</b>										
Prepared: 4/27/2023 11:57, Analyzed: 4/28/2023 14:44										
Chemical Oxygen Demand	272	13	mg/L	250	14	103	90-110	4.67	10	



Conventional Chemistry Analyses Madisonville - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch BCD2523 - Default Prep Wet Chem</b>										
<b>Blank (BCD2523-BLK1)</b>										
Prepared: 4/27/2023 12:37, Analyzed: 4/28/2023 12:04										
Total Dissolved Solids	ND	25	mg/L							U
<b>LCS (BCD2523-BS1)</b>										
Prepared: 4/27/2023 12:37, Analyzed: 4/28/2023 12:04										
Total Dissolved Solids	1480	25	mg/L	1500		98.4	80-120			
<b>Duplicate (BCD2523-DUP1) Source: 3043157-01</b>										
Prepared: 4/27/2023 12:37, Analyzed: 4/28/2023 12:04										
Total Dissolved Solids	3300	100	mg/L		3340			0.964	10	
<b>Duplicate (BCD2523-DUP2) Source: 3050646-01</b>										
Prepared: 4/27/2023 12:37, Analyzed: 4/28/2023 12:04										
Total Dissolved Solids	304	100	mg/L		316			3.87	10	
<b>Batch BCD2582 - Default Prep Micro</b>										
<b>Blank (BCD2582-BLK1)</b>										
Prepared: 4/27/2023 16:51, Analyzed: 5/2/2023 14:35										
Specific Conductance (Lab)	ND	1	umhos/cm							U
<b>LCS (BCD2582-BS1)</b>										
Prepared: 4/27/2023 16:51, Analyzed: 5/2/2023 14:35										
Specific Conductance (Lab)	1420		umhos/cm	1410		101	80-120			
<b>Duplicate (BCD2582-DUP1) Source: 3043170-01</b>										
Prepared: 4/27/2023 16:51, Analyzed: 5/2/2023 14:35										
Specific Conductance (Lab)	2330	1	umhos/cm		2330			0.00	0.938	
<b>Duplicate (BCD2582-DUP2) Source: 3043773-01</b>										
Prepared: 4/27/2023 16:51, Analyzed: 5/2/2023 14:35										
Specific Conductance (Lab)	2	1	umhos/cm		2			3.28	0.938	Y1
<b>Batch BCD2583 - Default Prep Micro</b>										
<b>LCS (BCD2583-BS1)</b>										
Prepared: 4/27/2023 16:49, Analyzed: 5/2/2023 13:55										
pH (Lab)	5.08		Std. Units	5.00		102	98.8-101.2			A-04



**Conventional Chemistry Analyses Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch BCD2583 - Default Prep Micro**

Duplicate (BCD2583-DUP1)

Source: 3043959-01

Prepared: 4/27/2023 16:49, Analyzed: 5/2/2023 13:55

pH (Lab)	7.12	0.10	Std. Units		7.06			0.846	10	
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**Batch BCD2635 - Default Prep Wet Chem**

Blank (BCD2635-BLK1)

Prepared: 4/28/2023 13:02, Analyzed: 4/28/2023 13:02

Bicarbonate Alkalinity as CaCO3	ND	4	mg/L							U
Carbonate Alkalinity as CaCO3	ND	4	mg/L							U
Total Alkalinity	ND	4	mg/L							U

Blank (BCD2635-BLK2)

Prepared: 4/28/2023 14:26, Analyzed: 4/28/2023 14:26

Total Alkalinity	ND	4	mg/L							U
Carbonate Alkalinity as CaCO3	ND	4	mg/L							U
Bicarbonate Alkalinity as CaCO3	ND	4	mg/L							U

Blank (BCD2635-BLK3)

Prepared: 4/28/2023 15:53, Analyzed: 4/28/2023 15:53

Carbonate Alkalinity as CaCO3	ND	4	mg/L							U
Bicarbonate Alkalinity as CaCO3	ND	4	mg/L							U
Total Alkalinity	ND	4	mg/L							U

LCS (BCD2635-BS1)

Prepared: 4/28/2023 14:21, Analyzed: 4/28/2023 14:21

Total Alkalinity	248	4	mg/L	250		99.0	80-120			
Carbonate Alkalinity as CaCO3	213	4	mg/L	0.00			0-200			
Bicarbonate Alkalinity as CaCO3	34	4	mg/L	0.00			0-200			

LCS (BCD2635-BS2)

Prepared: 4/28/2023 15:48, Analyzed: 4/28/2023 15:48

Total Alkalinity	249	4	mg/L	250		99.7	80-120			
Carbonate Alkalinity as CaCO3	206	4	mg/L	0.00			0-200			
Bicarbonate Alkalinity as CaCO3	43	4	mg/L	0.00			0-200			



**Conventional Chemistry Analyses Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch BCD2635 - Default Prep Wet Chem</b>										
<b>Duplicate (BCD2635-DUP1) Source: 3043160-01</b>										
Prepared: 4/28/2023 14:09, Analyzed: 4/28/2023 14:09										
Carbonate Alkalinity as CaCO3	ND	4	mg/L		ND				10	U
Bicarbonate Alkalinity as CaCO3	319	4	mg/L		318			0.409	10	
Total Alkalinity	319	4	mg/L		318			0.409	10	
<b>Duplicate (BCD2635-DUP2) Source: 3043175-01</b>										
Prepared: 4/28/2023 15:37, Analyzed: 4/28/2023 15:37										
Carbonate Alkalinity as CaCO3	ND	4	mg/L		ND				10	U
Total Alkalinity	312	4	mg/L		313			0.256	10	
Bicarbonate Alkalinity as CaCO3	312	4	mg/L		313			0.256	10	
<b>Matrix Spike (BCD2635-MS1) Source: 3043160-01</b>										
Prepared: 4/28/2023 14:15, Analyzed: 4/28/2023 14:15										
Total Alkalinity	335	4	mg/L	50.0	318	35.0	80-120			M3
<b>Matrix Spike (BCD2635-MS2) Source: 3043175-01</b>										
Prepared: 4/28/2023 15:42, Analyzed: 4/28/2023 15:42										
Total Alkalinity	323	4	mg/L	50.0	313	18.6	80-120			M3
<b>Batch BCD2636 - Default Prep Wet Chem</b>										
<b>Blank (BCD2636-BLK1)</b>										
Prepared: 4/28/2023 16:02, Analyzed: 4/28/2023 16:02										
Carbonate Alkalinity as CaCO3	ND	4	mg/L							U
Bicarbonate Alkalinity as CaCO3	ND	4	mg/L							U
Total Alkalinity	ND	4	mg/L							U
<b>Blank (BCD2636-BLK2)</b>										
Prepared: 4/28/2023 16:39, Analyzed: 4/28/2023 16:39										
Total Alkalinity	ND	4	mg/L							U
Carbonate Alkalinity as CaCO3	ND	4	mg/L							U
Bicarbonate Alkalinity as CaCO3	ND	4	mg/L							U





Conventional Chemistry Analyses Madisonville - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch BCD2636 - Default Prep Wet Chem</b>										
<b>LCS (BCD2636-BS1)</b>										
Prepared: 4/28/2023 16:34, Analyzed: 4/28/2023 16:34										
Total Alkalinity	251	4	mg/L	250		100	80-120			
Carbonate Alkalinity as CaCO3	201	4	mg/L	0.00			0-200			
Bicarbonate Alkalinity as CaCO3	50	4	mg/L	0.00			0-200			
<b>Duplicate (BCD2636-DUP1) Source: 3043177-01</b>										
Prepared: 4/28/2023 16:26, Analyzed: 4/28/2023 16:26										
Carbonate Alkalinity as CaCO3	ND	4	mg/L		ND				10	U
Total Alkalinity	149	4	mg/L		149			0.00	10	
Bicarbonate Alkalinity as CaCO3	149	4	mg/L		149			0.00	10	
<b>Matrix Spike (BCD2636-MS1) Source: 3043177-01</b>										
Prepared: 4/28/2023 16:30, Analyzed: 4/28/2023 16:30										
Total Alkalinity	186	4	mg/L	50.0	149	72.8	80-120			M3
<b>Batch BCE0200 - Default Prep Wet Chem</b>										
<b>Blank (BCE0200-BLK1)</b>										
Prepared: 5/2/2023 12:58, Analyzed: 5/3/2023 16:18										
Total Organic Carbon	ND	0.5	mg/L							U
<b>LCS (BCE0200-BS1)</b>										
Prepared: 5/2/2023 12:58, Analyzed: 5/3/2023 16:39										
Total Organic Carbon	5.0	0.5	mg/L	5.00		100	80-120			
<b>Duplicate (BCE0200-DUP1) Source: 3043160-01</b>										
Prepared: 5/2/2023 12:58, Analyzed: 5/3/2023 21:55										
Total Organic Carbon	1.0	0.5	mg/L		0.9			10.3	25	
<b>Duplicate (BCE0200-DUP2) Source: 3043638-01</b>										
Prepared: 5/2/2023 12:58, Analyzed: 5/4/2023 3:11										
Total Organic Carbon	1.9	0.5	mg/L		1.7			8.48	25	
<b>Matrix Spike (BCE0200-MS1) Source: 3043162-01</b>										
Prepared: 5/2/2023 12:58, Analyzed: 5/3/2023 22:16										
Total Organic Carbon	3.4	0.5	mg/L	2.50	0.9	100	80-120			



Conventional Chemistry Analyses Madisonville - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch BCE0200 - Default Prep Wet Chem</b>										
<b>Matrix Spike (BCE0200-MS2) Source: 3043638-02</b>										
Prepared: 5/2/2023 12:58, Analyzed: 5/4/2023 3:32										
Total Organic Carbon	6.2	0.5	mg/L	5.00	1.2	98.6	80-120			
<b>Batch BCE0201 - Default Prep Wet Chem</b>										
<b>Blank (BCE0201-BLK1)</b>										
Prepared: 5/2/2023 13:06, Analyzed: 5/3/2023 14:00										
Chemical Oxygen Demand	ND	13	mg/L							U
<b>LCS (BCE0201-BS1)</b>										
Prepared: 5/2/2023 13:06, Analyzed: 5/3/2023 14:00										
Chemical Oxygen Demand	123	13	mg/L	125		98.4	90-110			
<b>Duplicate (BCE0201-DUP1) Source: 3043157-01</b>										
Prepared: 5/2/2023 13:06, Analyzed: 5/3/2023 14:00										
Chemical Oxygen Demand	43	13	mg/L		39			9.76	25	
<b>Matrix Spike (BCE0201-MS1) Source: 3043157-01</b>										
Prepared: 5/2/2023 13:06, Analyzed: 5/3/2023 14:00										
Chemical Oxygen Demand	294	13	mg/L	250	39	102	90-110			
<b>Matrix Spike Dup (BCE0201-MSD1) Source: 3043157-01</b>										
Prepared: 5/2/2023 13:06, Analyzed: 5/3/2023 14:00										
Chemical Oxygen Demand	301	13	mg/L	250	39	105	90-110	2.35	10	
<b>Batch BCE0318 - Default Prep Wet Chem</b>										
<b>Blank (BCE0318-BLK1)</b>										
Prepared: 5/3/2023 10:59, Analyzed: 5/6/2023 17:09										
Total Organic Carbon	ND	0.5	mg/L							U
<b>LCS (BCE0318-BS1)</b>										
Prepared: 5/3/2023 10:59, Analyzed: 5/6/2023 17:30										
Total Organic Carbon	5.0	0.5	mg/L	5.00		99.6	80-120			



Conventional Chemistry Analyses Madisonville - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch BCE0318 - Default Prep Wet Chem</b>										
<b>Duplicate (BCE0318-DUP1)</b>		<b>Source: 3043157-01</b>								
Prepared: 5/3/2023 10:59, Analyzed: 5/6/2023 22:44										
Total Organic Carbon	2.0	0.5	mg/L		2.0			0.890	25	
<b>Duplicate (BCE0318-DUP2)</b>		<b>Source: 3043159-01</b>								
Prepared: 5/3/2023 10:59, Analyzed: 5/7/2023 3:59										
Total Organic Carbon	1.3	0.5	mg/L		1.3			2.69	25	
<b>Matrix Spike (BCE0318-MS1)</b>		<b>Source: 3043158-01</b>								
Prepared: 5/3/2023 10:59, Analyzed: 5/6/2023 23:05										
Total Organic Carbon	3.5	0.5	mg/L	2.50	1.3	89.7	80-120			
<b>Matrix Spike (BCE0318-MS2)</b>		<b>Source: 3043161-01</b>								
Prepared: 5/3/2023 10:59, Analyzed: 5/7/2023 4:20										
Total Organic Carbon	5.9	0.5	mg/L	5.00	1.0	97.2	80-120			
<b>Batch BCE0319 - Default Prep Wet Chem</b>										
<b>Blank (BCE0319-BLK1)</b>										
Prepared: 5/3/2023 11:02, Analyzed: 5/4/2023 4:15										
Total Organic Carbon	ND	0.5	mg/L							U
<b>LCS (BCE0319-BS1)</b>										
Prepared: 5/3/2023 11:02, Analyzed: 5/4/2023 4:36										
Total Organic Carbon	4.8	0.5	mg/L	5.00		95.7	80-120			
<b>Duplicate (BCE0319-DUP1)</b>		<b>Source: 3043163-01</b>								
Prepared: 5/3/2023 11:02, Analyzed: 5/4/2023 9:52										
Total Organic Carbon	1.8	0.5	mg/L		1.7			3.25	25	
<b>Duplicate (BCE0319-DUP2)</b>		<b>Source: 3043174-01</b>								
Prepared: 5/3/2023 11:02, Analyzed: 5/6/2023 16:06										
Total Organic Carbon	1.4	0.5	mg/L		1.4			1.33	25	
<b>Matrix Spike (BCE0319-MS1)</b>		<b>Source: 3043167-01</b>								
Prepared: 5/3/2023 11:02, Analyzed: 5/4/2023 10:13										
Total Organic Carbon	3.4	0.5	mg/L	2.50	0.9	103	80-120			



Conventional Chemistry Analyses Madisonville - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch BCE0319 - Default Prep Wet Chem</b>										
<b>Matrix Spike (BCE0319-MS2) Source: 3043175-01</b>										
Prepared: 5/3/2023 11:02, Analyzed: 5/6/2023 16:27										
Total Organic Carbon	8.4	0.5	mg/L	5.00	3.1	106	80-120			
<b>Batch BCE0451 - Default Prep Wet Chem</b>										
<b>Blank (BCE0451-BLK1)</b>										
Prepared: 5/4/2023 9:46, Analyzed: 5/4/2023 14:30										
Chemical Oxygen Demand	ND	13	mg/L							U
<b>LCS (BCE0451-BS1)</b>										
Prepared: 5/4/2023 9:46, Analyzed: 5/4/2023 14:30										
Chemical Oxygen Demand	130	13	mg/L	125		104	90-110			
<b>Duplicate (BCE0451-DUP1) Source: 3044398-01</b>										
Prepared: 5/4/2023 9:46, Analyzed: 5/4/2023 14:30										
Chemical Oxygen Demand	9	13	mg/L		ND				25	J
<b>Matrix Spike (BCE0451-MS1) Source: 3044398-01</b>										
Prepared: 5/4/2023 9:46, Analyzed: 5/4/2023 14:30										
Chemical Oxygen Demand	271	13	mg/L	250	ND	108	90-110			
<b>Matrix Spike Dup (BCE0451-MSD1) Source: 3044398-01</b>										
Prepared: 5/4/2023 9:46, Analyzed: 5/4/2023 14:30										
Chemical Oxygen Demand	273	13	mg/L	250	ND	109	90-110	0.735	10	
<b>Batch BCE0691 - Default Prep Wet Chem</b>										
<b>Blank (BCE0691-BLK1)</b>										
Prepared: 5/5/2023 16:40, Analyzed: 5/7/2023 5:03										
Total Organic Carbon	ND	0.5	mg/L							U
<b>LCS (BCE0691-BS1)</b>										
Prepared: 5/5/2023 16:40, Analyzed: 5/7/2023 5:24										
Total Organic Carbon	4.9	0.5	mg/L	5.00		97.7	80-120			



Conventional Chemistry Analyses Madisonville - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch BCE0691 - Default Prep Wet Chem</b>										
<b>Duplicate (BCE0691-DUP1)</b>		<b>Source: 3043176-01</b>								
Prepared: 5/5/2023 16:40, Analyzed: 5/7/2023 10:40										
Total Organic Carbon	1.7	0.5	mg/L		1.8			9.04	25	
<b>Duplicate (BCE0691-DUP2)</b>		<b>Source: 3044087-01</b>								
Prepared: 5/5/2023 16:40, Analyzed: 5/7/2023 15:56										
Total Organic Carbon	2.2	0.5	mg/L		2.1			3.09	25	
<b>Matrix Spike (BCE0691-MS1)</b>		<b>Source: 3043177-01</b>								
Prepared: 5/5/2023 16:40, Analyzed: 5/7/2023 11:01										
Total Organic Carbon	4.2	0.5	mg/L	2.50	1.7	101	80-120			
<b>Matrix Spike (BCE0691-MS2)</b>		<b>Source: 3044087-02</b>								
Prepared: 5/5/2023 16:40, Analyzed: 5/7/2023 16:17										
Total Organic Carbon	6.1	0.5	mg/L	5.00	1.3	95.9	80-120			
<b>Batch BCE0692 - Default Prep Wet Chem</b>										
<b>Blank (BCE0692-BLK1)</b>										
Prepared: 5/5/2023 16:43, Analyzed: 5/7/2023 16:59										
Total Organic Carbon	ND	0.5	mg/L							U
<b>LCS (BCE0692-BS1)</b>										
Prepared: 5/5/2023 16:43, Analyzed: 5/7/2023 17:20										
Total Organic Carbon	4.9	0.5	mg/L	5.00		97.7	80-120			
<b>Duplicate (BCE0692-DUP1)</b>		<b>Source: 3042548-01</b>								
Prepared: 5/5/2023 16:43, Analyzed: 5/7/2023 22:36										
Total Organic Carbon	1.5	0.5	mg/L		1.5			0.425	25	
<b>Duplicate (BCE0692-DUP2)</b>		<b>Source: 3044468-07</b>								
Prepared: 5/5/2023 16:43, Analyzed: 5/8/2023 3:53										
Total Organic Carbon	1.5	0.5	mg/L		1.3			11.9	25	
<b>Matrix Spike (BCE0692-MS1)</b>		<b>Source: 3042548-02</b>								
Prepared: 5/5/2023 16:43, Analyzed: 5/7/2023 22:57										
Total Organic Carbon	3.7	0.5	mg/L	2.50	1.4	95.2	80-120			





**Conventional Chemistry Analyses Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch BCE0692 - Default Prep Wet Chem</b>										
<b>Matrix Spike (BCE0692-MS2) Source: 3044468-09</b>										
Prepared: 5/5/2023 16:43, Analyzed: 5/8/2023 4:14										
Total Organic Carbon	6.3	0.5	mg/L	5.00	1.3	101	80-120			



**Conventional Chemistry Analysis - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch BCD2521 - Default Prep Wet Chem</b>										
<b>Blank (BCD2521-BLK1)</b>										
Prepared: 4/27/2023 13:16, Analyzed: 4/27/2023 13:16										
Total Solids	ND	0.00025	%							U
<b>LCS (BCD2521-BS1)</b>										
Prepared: 4/27/2023 13:16, Analyzed: 4/27/2023 13:16										
Total Solids	0.00940	0.00025	%	0.0100		94.0	80-120			
<b>Duplicate (BCD2521-DUP1) Source: 3040922-01</b>										
Prepared: 4/27/2023 13:16, Analyzed: 4/27/2023 13:16										
Total Solids	0.873	0.00417	%		0.900			3.01	10	



**Ion Chromatography Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch BCE0226 - Default Prep IC**

**Blank (BCE0226-BLK1)**

Prepared: 5/2/2023 19:01, Analyzed: 5/2/2023 19:01

Chloride	ND	0.5	mg/L							U
Sulfate	ND	1.0	mg/L							U
Fluoride	ND	0.20	mg/L							U

**Blank (BCE0226-BLK2)**

Prepared: 5/5/2023 4:10, Analyzed: 5/5/2023 4:10

Sulfate	ND	1.0	mg/L							U
Chloride	ND	0.5	mg/L							U

**LCS (BCE0226-BS1)**

Prepared: 5/2/2023 18:34, Analyzed: 5/2/2023 18:34

Sulfate	23.1		mg/L	25.0		92.3	90-110			
Chloride	11.6		mg/L	12.5		92.7	90-110			
Fluoride	4.55		mg/L	5.00		91.0	90-110			

**LCS (BCE0226-BS2)**

Prepared: 5/5/2023 3:43, Analyzed: 5/5/2023 3:43

Chloride	12.4		mg/L	12.5		99.6	90-110			
Sulfate	25.1		mg/L	25.0		100	90-110			

**Matrix Spike (BCE0226-MS1)**

Source: 3043902-02

Prepared: 5/3/2023 4:09, Analyzed: 5/3/2023 4:09

Chloride	111		mg/L	125	4.3	85.0	80-120			D
Sulfate	229		mg/L	250	14.3	85.9	80-120			D
Fluoride	48.2		mg/L	50.0	0.53	95.2	80-120			D

**Matrix Spike Dup (BCE0226-MSD1)**

Source: 3043902-02

Prepared: 5/3/2023 4:36, Analyzed: 5/3/2023 4:36

Sulfate	246		mg/L	250	14.3	92.6	80-120	7.04	20	D
Fluoride	51.6		mg/L	50.0	0.53	102	80-120	6.92	20	D
Chloride	119		mg/L	125	4.3	91.4	80-120	6.99	10	D



**Ion Chromatography Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch BCE0236 - Default Prep IC</b>										
<b>Blank (BCE0236-BLK1)</b>										
Prepared: 5/2/2023 18:34, Analyzed: 5/2/2023 18:34										
Sulfate	ND	1.0	mg/L							U
Fluoride	ND	0.20	mg/L							U
Chloride	ND	0.5	mg/L							U
<b>Blank (BCE0236-BLK2)</b>										
Prepared: 5/3/2023 20:10, Analyzed: 5/3/2023 20:10										
Sulfate	ND	1.0	mg/L							U
Chloride	ND	0.5	mg/L							U
Fluoride	ND	0.20	mg/L							U
<b>Blank (BCE0236-BLK3)</b>										
Prepared: 5/5/2023 9:39, Analyzed: 5/5/2023 9:39										
Sulfate	ND	1.0	mg/L							U
Chloride	ND	0.5	mg/L							U
<b>LCS (BCE0236-BS1)</b>										
Prepared: 5/2/2023 18:06, Analyzed: 5/2/2023 18:06										
Fluoride	5.06		mg/L	5.00		101	90-110			
Chloride	12.1		mg/L	12.5		96.5	90-110			
Sulfate	24.7		mg/L	25.0		99.0	90-110			
<b>LCS (BCE0236-BS2)</b>										
Prepared: 5/3/2023 19:43, Analyzed: 5/3/2023 19:43										
Fluoride	4.51		mg/L	5.00		90.2	90-110			
Chloride	11.0		mg/L	12.5		88.2	90-110			L2
Sulfate	22.4		mg/L	25.0		89.6	90-110			L2
<b>LCS (BCE0236-BS3)</b>										
Prepared: 5/5/2023 9:12, Analyzed: 5/5/2023 9:12										
Chloride	12.9		mg/L	12.5		103	90-110			
Sulfate	25.9		mg/L	25.0		104	90-110			
<b>Matrix Spike (BCE0236-MS1) Source: 3043174-01</b>										
Prepared: 5/3/2023 5:58, Analyzed: 5/3/2023 5:58										
Chloride	332		mg/L	250	85.0	98.7	80-120			D
Fluoride	88.3		mg/L	100	0.22	88.1	80-120			D
Sulfate	1920		mg/L	500	2070	NR	80-120			D, M3



**Ion Chromatography Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch BCE0236 - Default Prep IC**

**Matrix Spike Dup (BCE0236-MSD1) Source: 3043174-01**

Prepared: 5/3/2023 6:26, Analyzed: 5/3/2023 6:26

Chloride	338		mg/L	250	85.0	101	80-120	1.93	10	D
Sulfate	1760		mg/L	500	2070	NR	80-120	8.21	20	D, M3
Fluoride	100		mg/L	100	0.22	100	80-120	12.6	20	D

**Batch BCE0359 - Default Prep IC**

**Blank (BCE0359-BLK1)**

Prepared: 5/5/2023 14:51, Analyzed: 5/5/2023 14:51

Chloride	ND	0.5	mg/L							U
Fluoride	ND	0.20	mg/L							U
Sulfate	ND	1.0	mg/L							U

**LCS (BCE0359-BS1)**

Prepared: 5/5/2023 14:23, Analyzed: 5/5/2023 14:23

Sulfate	25.3		mg/L	25.0		101	90-110			
Fluoride	5.34		mg/L	5.00		107	90-110			
Chloride	12.6		mg/L	12.5		100	90-110			

**Matrix Spike (BCE0359-MS1) Source: 3043175-01**

Prepared: 5/4/2023 6:12, Analyzed: 5/4/2023 6:12

Fluoride	50.4	2.22	mg/L	55.6	ND	90.8	80-120			D
Chloride	ND	5.6	mg/L	139	4.2	NR	80-120			D2, M2, U
Sulfate	856	11.1	mg/L	278	721	48.5	80-120			D2, M2

**Matrix Spike Dup (BCE0359-MSD1) Source: 3043175-01**

Prepared: 5/4/2023 6:39, Analyzed: 5/4/2023 6:39

Chloride	ND	5.6	mg/L	139	4.2	NR	80-120		10	D2, M2, U
Fluoride	59.4	2.22	mg/L	55.6	ND	107	80-120	16.3	20	
Sulfate	835	11.1	mg/L	278	721	41.2	80-120	2.42	20	D2, M2





**Certified Analyses included in this Report**

<b>Analyte</b>	<b>Certifications</b>
<b>2320 B-2011 in Water</b>	
Bicarbonate Alkalinity as CaCO <sub>3</sub>	KY Drinking Water Mdv (00030) TN Drinking Water (02819) VA NELAC MDV (460210)
Carbonate Alkalinity as CaCO <sub>3</sub>	KY Drinking Water Mdv (00030) TN Drinking Water (02819) VA NELAC MDV (460210)
Total Alkalinity	KY Drinking Water Mdv (00030) KY Wastewater Mdv (00030) TN Drinking Water (02819) VA NELAC MDV (460210) MS Drinking Water MADV
<b>2340 C (as HACH 8226) in Water</b>	
Hardness as CaCO <sub>3</sub>	KY Wastewater Mdv (00030) TN Drinking Water (02819) VA NELAC MDV (460210)
<b>2510 B-2011 in Water</b>	
Specific Conductance (Lab)	KY Drinking Water Mdv (00030) VA NELAC MDV (460210) TN Drinking Water (02819) WV Wastewater Madisonville (241), 825 Industrial Rd Madisonville, KY 42431 FL Drinking Water Mdv (E871159)
<b>2540 C-2015 in Water</b>	
Total Dissolved Solids	KY Drinking Water Mdv (00030) VA NELAC MDV (460210) KY Wastewater Mdv (00030) TN Drinking Water (02819) WV Wastewater Madisonville (241), 825 Industrial Rd Madisonville, KY 42431 MS Drinking Water MADV
<b>5310 C-2014 in Water</b>	
Total Organic Carbon	KY Drinking Water Mdv (00030) VA NELAC MDV (460210) KY Wastewater Mdv (00030) TN Drinking Water (02819) ADEM Drinking Water Mdv (41880) WV Wastewater Madisonville (241), 825 Industrial Rd Madisonville, KY 42431 MS Drinking Water MADV
<b>EPA 245.7 REV 2 in Water</b>	
Mercury	VA NELAC MDV (460210) KY Wastewater Mdv (00030)
Mercury	VA NELAC MDV (460210) KY Wastewater Mdv (00030) WV Wastewater Madisonville (241), 825 Industrial Rd Madisonville, KY 42431
<b>EPA 300.0 REV 2.1 in Water</b>	
Chloride	KY Drinking Water Mdv (00030) KY Wastewater Mdv (00030) TN Drinking Water (02819) WV Wastewater Madisonville (241), 825 Industrial Rd Madisonville, KY 42431 MS Drinking Water MADV VA NELAC MDV (460210)
Fluoride	KY Drinking Water Mdv (00030) IN Drinking Water Mdv (C-KY-02) KY Wastewater Mdv (00030) WV Drinking Water Mdv (9959 M) TN Drinking Water (02819) ADEM Drinking Water Mdv (41880) WV Wastewater Madisonville (241), 825 Industrial Rd Madisonville, KY 42431 VA NELAC MDV (460210) MS Drinking Water MADV
Sulfate	KY Drinking Water Mdv (00030) VA NELAC MDV (460210) KY Wastewater Mdv (00030) TN Drinking Water (02819) WV Wastewater Madisonville (241), 825 Industrial Rd Madisonville, KY 42431
<b>HACH 8000 in Water</b>	
Chemical Oxygen Demand	KY Wastewater Mdv (00030) VA NELAC MDV (460210) WV Wastewater Madisonville (241), 825 Industrial Rd Madisonville, KY 42431
<b>SM 4500-H+ B-2011 in Water</b>	
pH (Lab)	KY Drinking Water Mdv (00030) TN Drinking Water (02819)
<b>SW846 6010 B in Water</b>	
Calcium	VA NELAC MDV (460210)



**Sample Acceptance Checklist for Work Order 3043158**

Shipped By: Client

Temperature: 0.60° Celcius

**Condition**

Check if Custody Seals are Present/Intact	<input type="checkbox"/>
Check if Custody Signatures are Present	<input checked="" type="checkbox"/>
Check if Collector Signature Present	<input checked="" type="checkbox"/>
Check if bottles are intact	<input checked="" type="checkbox"/>
Check if bottles are correct	<input checked="" type="checkbox"/>
Check if bottles have sufficient volume	<input checked="" type="checkbox"/>
Check if samples received on ice	<input checked="" type="checkbox"/>
Check if VOA headspace is acceptable	<input type="checkbox"/>
Check if samples received in holding time.	<input checked="" type="checkbox"/>
Check if samples are preserved properly	<input checked="" type="checkbox"/>

# Chain of Custody

Scheduled for: **04/19/2023**



**Client:** Big Rivers Electric Corporation Wilson Station

**Report To:**  
Big Rivers Electric Corporation Wilson Station  
Dawn Storkman  
PO Box 24  
Henderson, KY 42419

**Invoice To:**  
Big Rivers Electric Corporation Wilson Station  
Dawn Storkman  
PO Box 24  
Henderson, KY 42419

**Project:** MW-10 Wilson 092-00001

Phone: (270) 844-6000  
PWS ID#: \_\_\_\_\_  
State: Ky

PO# \_\_\_\_\_  
Quoted# \_\_\_\_\_

Please Print Legibly

Collected by (Signature): [Signature]  
\*required information\*

Compliance Monitoring? Yes  No

Samples Chlorinated? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below.

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # 3043158 Sample ID#	*required information* Date (mm/dd/yy) Collection Time (24 hr)	Bottle and Preservative	Container	Sample Description	Composite	Sample Analysis Requested
3043158-01 A	<u>4-26-23</u> <u>7:05</u>	Plastic 1L	1	MW10	g/c	Alkalinity Bicarbonate TDS Alkalinity Carbonate Fluoride 300 $\phi$ Chloride 300.0 Conductivity (Lab) Sulfate 300.0 Alkalinity Total Cobalt Tot 6020 Potassium Tot 60108 Nickel Tot 6020 Molybdenum Tot 6020 Magnesium Tot 60108 Lithium Tot 6020 Zinc Tot 6020 Calcium Tot 60108 Copper Tot 6020 Thallium Tot 6020 Beryllium Tot 6020 Arsenic Tot 6020 Lead Tot 6020 Barium Tot 6020
3043158-01 B	<u>4-26-23</u> <u>7:05</u>	Plastic 500mL pH<2 w/HNO3	1	MW10	g/c	Cobalt Tot 6020 Potassium Tot 60108 Nickel Tot 6020 Molybdenum Tot 6020 Magnesium Tot 60108 Lithium Tot 6020 Zinc Tot 6020 Calcium Tot 60108 Copper Tot 6020 Thallium Tot 6020 Beryllium Tot 6020 Arsenic Tot 6020 Lead Tot 6020 Barium Tot 6020
3043158-01 C	<u>4-26-23</u> <u>7:05</u>	Plastic 500mL pH<2 w/H2SO4	1	MW10	g/c	TOC COD
3043158-01 D	<u>4-26-23</u> <u>7:05</u>	CG 250mL pH<2 w/HCL	1	MW10	g/c	Mercury Tot 245.7
3043158-01 E	<u>4-26-23</u> <u>7:05</u>	CG 250mL pH<2 w/HCL	1	MW10	g/c	Mercury Tot 245.7

Preservation Check: pH:

Preservation Check: pH:

Thermometer Serial Number

181390287

181460057

Temp 12.96

Preservation Check Performed by: ALL

Field data collected by: Troy's Speed Date (mm/dd/yy) 4-26-23 Time (24 hr) 7:05  
pH 5.98 Cond (umho) 3.60 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_  
Temp (oC) 12.96 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_  
Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by (Signature): [Signature]

Received by (Signature): [Signature]

Date (mm/dd/yy) 4-26-23

Time (24 hr) 1400

### Chain of Custody

Scheduled for: **04/19/2023**



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Storchman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Storchman  
PO Box 24  
Henderson, KY 42419

Project: MW-102 Wilson 092-09004

Phone: (270) 844-8000  
PWS ID#: \_\_\_\_\_  
State: KY

PO#: \_\_\_\_\_  
Cust#: \_\_\_\_\_

Please Print Legibly

Collected by (Signature): Matt Morton  
\*required information\*

Compliance Monitoring? Yes  No

Samples Chlorinated? Yes  No

\*For composite samples please indicate begin time, end time and temp(C) at end time below:

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY	*required information*						Sample Analysis Requested
Workorder #	Date Collection	Time (24 hr):	Bottle and Preservative	Containers	Sample Description	Composite	
3043159							
Sample ID#	(mm/dd/yy)						
3043159-01 A	<u>4-25-23</u>	<u>9:24</u>	Plastic 1L	1	MW102	g/c	TDS Fluoride 300.0 Sulfate 300.0 Conductivity (Lab) Chloride 300.0 Alkalinity Total Alkalinity Carbonate Alkalinity Bicarbonate
3043159-01 B	<u>4-25-23</u>	<u>9:24</u>	Plastic 500mL pH<2 w/HNO3	1	MW102	g/c	Zinc Tot 6020 Lithium Tot 6020 Sodium Tot 6010B Selenium Tot 6020 Potassium Tot 6010B Nickel Tot 6020 Molybdenum Tot 6020 Magnesium Tot 6010B Iron Tot 6010B Lead Tot 6020 Hardness Titration Copper Tot 6020 Cobalt Tot 6020 Chromium Tot 6020 Boron Tot 6010B
3043159-01 C	<u>4-25-23</u>	<u>9:24</u>	Plastic 500mL pH<2 w/H2SO4	1	MW102	g/c	TOC COD
3043159-01 D	<u>4-25-23</u>	<u>9:24</u>	CG 250mL pH<2 w/HCL	1	MW102	g/c	Mercury Tot 245.7
3043159-01 E	<u>4-25-23</u>	<u>9:24</u>	CG 250mL pH<2 w/HCL	1	MW102	g/c	Mercury Tot 245.7

Preservation Check: pH:

Preservation Check: pH:

Preservation Check Performed by: ALL

Thermometer Serial Number  
 181390287

Field data collected by: <u>Matt Morton</u>	Date (mm/dd/yy): <u>4-25-23</u>	Time (24 hr): <u>9:24</u>	Temp: <u>181460057</u>
pH: <u>6.84</u>	Cond (umh/cm): <u>285</u>	Res Cl (mg/L): _____	Tot Cl (mg/L): _____
Temp (oC): <u>15.92</u>	or (oF): _____	Static Water Level: _____	DO (mg/L): _____
Flow (MGD): _____	or (CFS): _____	or (g/min): _____	Turb (NTU): _____

Relinquished by (Signature)	Received by (Signature)	Date (mm/dd/yy)	Time (24 hr)
<u>Matt Morton</u>	<u>[Signature]</u>	<u>4-25-23</u>	<u>14:30</u>
<u>[Signature]</u>	<u>[Signature]</u>	<u>4-26-23</u>	<u>14:00</u>

# Chain of Custody

Scheduled for: **04/19/2023**



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Stockman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station

Project: MW-114 Wilson 092-00084

Phone: (270) 844-6000  
PWS ID#: KY  
State: KY

Drawn Stockman  
PO Box 24  
Henderson, KY 42419

PO#: \_\_\_\_\_  
Quote# \_\_\_\_\_

Please Print Legibly

Collected by (Signature): [Signature]

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time, end time and temp(°C) at end time below:

Samples Chlorinated? Yes  No

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	*required information* Date (mm/dd/yyyy) Collection Time (24 hr):	Bottle and Preservative	Containers	Sample Description	Composie	Sample Analysis Requested
3043160-01 F	<u>4-24-23 1:48</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW-114	g/c	Radium 226 (sub)
		Preservation Check: pH: <u>✓</u>				
3043160-01 G	<u>4-24-23 1:48</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW-114	g/c	Radium 228 (sub)
		Preservation Check: pH: <u>✓</u>				
3043160-01 H	<u>4-24-23 1:48</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW-114	g/c	Radium 228 (sub)
		Preservation Check: pH: <u>✓</u>				
3043160-01 I	<u>4-24-23 1:48</u>	Plastic 1L pH<2 w/HNO3 (Sub)	1	MW-114	g/c	Radium Total (sub)
		Preservation Check: pH: <u>✓</u>				
3043160-01 J	<u>4-24-23 1:48</u>	AG 250mL pH<2 w/H2SO4	1	MW-114	g/c	TOC
		Preservation Check: pH: <u>✓</u>				
3043160-02 A	<u>4-24-23 1:48</u>	CG 250mL pH<2 w/HCl Field Blank	1	Mercury Field Blank	g/c	Thermometer Serial Number 181390287 181460057 Temp <u>32.8°C</u>

Preservation Check Performed by: JF

Field data collected by: Matt Morfon Date (mm/dd/yyyy): 4-24-23 Time (24 hr): 1:48  
pH: 7.83 Cond (umho/cm): 942 Res Cl (mg/L): \_\_\_\_\_ Tot Cl (mg/L): \_\_\_\_\_ Free Cl (mg/L): \_\_\_\_\_  
Temp (°C): 17.91 or (°F): \_\_\_\_\_ Static Water Level: \_\_\_\_\_ DO (mg/L): \_\_\_\_\_ Turb. (NTU): \_\_\_\_\_  
Flow (MGD): \_\_\_\_\_ or (GPM): \_\_\_\_\_ or (g/min): \_\_\_\_\_

Relinquished by: (Signature)	Received by: (Signature)	Date (mm/dd/yyyy)	Time (24 hr)
<u>[Signature]</u>	<u>[Signature]</u>	<u>4-24-23</u>	<u>14:00</u>
<u>[Signature]</u>	<u>[Signature]</u>	<u>4/24/23</u>	<u>1430</u>



# Chain of Custody

Scheduled for: **04/19/2023**



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Storckman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Storckman  
PO Box 24  
Henderson, KY 42419

Project: MW-114 Wilson 892-00004

Phone: (270) 844-6000  
PWSID: KY  
State: KY

PO# \_\_\_\_\_  
Quote# \_\_\_\_\_

Please Print Legibly

Collected by (Signature) Matt Norton

Compliance Monitoring? Yes  No

Samples Chlorinated? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below:

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY	*required information*		Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
Workorder #	Date	Collection					
3043160	(mm/dd/yyyy):	Time (24 hr)					
3043160-01 A	<u>4-24-23</u>	<u>1:48</u>	Plastic 1L	1	MW-114	g/c	Conductivity (Lab) Sulfate 300.0 TDS Alkalinity Carbonate Alkalinity Bicarbonate-Chloride 300.0 Fluoride 300.0 Alkalinity Total Barium Tot 6020 Lithium Tot 6020 Zinc Tot 6020 Iron Tot 6010B Copper Tot 6020 Cobalt Tot 6020 Beryllium Tot 6020 Thallium Tot 6020 Lead Tot 6020 Nickel Tot 6020 Boron Tot 6010B Cadmium Tot 6020 Calcium Tot 6010B Arsenic Tot 6020 Chromium Tot 6020
3043160-01 B	<u>4-24-23</u>	<u>1:48</u>	Plastic 500mL pH<2 w/HNO3	1	MW-114	g/c	
3043160-01 C	<u>4-24-23</u>	<u>1:48</u>	Plastic 500mL pH<2 w/H2SO4	1	MW-114	g/c	COD/TOC
3043160-01 D	<u>4-24-23</u>	<u>1:48</u>	CG 250ml, pH<2 w/HCL	1	MW-114	g/c	Mercury Tot 245.7
3043160-01 E	<u>4-24-23</u>	<u>1:48</u>	CG 250ml, pH<2 w/HCL	1	MW-114	g	Thermometer Serial Number 181390287 181460057 Temp <u>20.9C</u>

Preservation Check Performed by \_\_\_\_\_

Field data collected by Matt Norton Date (mm/dd/yyyy) 4-24-23 Time (24 hr) 1:48p

pH 7.83 Conductivity 261992 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC) 17.91 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb (NTU) \_\_\_\_\_

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (gpm) \_\_\_\_\_

Relinquished by: (Signature) <u>Matt Norton</u>	Received by: (Signature) <u>Dawn Storckman</u>	Date (mm/dd/yyyy) <u>4-24-23</u>	Time (24 hr) <u>1400</u>
<u>Dawn Storckman</u>	<u>[Signature]</u>	<u>4/24/23</u>	<u>1432</u>

### Chain of Custody

Scheduled for: 04/19/2023



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Stockman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Stockman  
PO Box 24  
Henderson, KY 42419

Project: MW-105R Wilson 092-00004

Phone: (270) 844-6000  
PWS ID#: KY  
State: KY

PO#: \_\_\_\_\_  
Quote# \_\_\_\_\_

Please Print Legibly

Collected by (Signature): Matt Morton  
required information

Compliance Monitoring? Yes  No

Samples Chlorinated? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end line below.

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY	Workorder #	Sample ID#	required information* Date (mm/dd/yyyy): Time (24 hr):	Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
	3043161	3043161-01 A	<u>4-25-23 7:48</u>	Plastic 1L	1	MW105	g/c	Sulfate 300.0 Alkalinity Carbonate Alkalinity Bicarbonate Alkalinity Total Chloride 300.0 Conductivity (Lab) TDS Fluoride 300.0
		3043161-01 B	<u>4-25-23 7:48</u>	Plastic 500mL pH<2 w/HNO3	1	MW105	g/c	Cadmium Tot 6020 Iron Tot 6010B Copper Tot 6020 Cobalt Tot 6020 Beryllium Tot 6020 Antimony Tot 6020 Lead Tot 6020 Selenium Tot 6020 Boron Tot 6010B Magnesium Tot 6010B Calcium Tot 6010B Arsenic Tot 6020 Chromium Tot 6020 Hardness Titration Zinc Tot 6020
		3043161-01 C	<u>4-25-23 7:48</u>	Plastic 500mL pH<2 w/H2SO4	1	MW105	g/c	COD TOC
		3043161-01 D	<u>4-25-23 7:48</u>	CG 250mL pH<2 w/HCL	1	MW105	g/c	Mercury Tot 245.7
		3043161-01 E	<u>4-25-23 7:48</u>	CG 250mL pH<2 w/HCL	1	MW105	g/c	Mercury Tot 245.7

Preservation Check: pH: /

Preservation Check: pH: /

Thermometer Serial Number

181390287

181460067

Preservation Check Performed by: REL

Field data collected by: Matt Morton Date (mm/dd/yyyy): 4-25-23 Time (24 hr): 7:48 Temp: 2.4 oC  
pH: 6.84 Cond (umho): 1.31 Res Cl (mg/L): \_\_\_\_\_ Tot Cl (mg/L): \_\_\_\_\_ Free Cl (mg/L): \_\_\_\_\_  
Temp (oC): 14.60 or (oF): \_\_\_\_\_ Saline Water Level: \_\_\_\_\_ DO (mg/L): \_\_\_\_\_ Turb. (NTU): \_\_\_\_\_  
Flow (MGD): \_\_\_\_\_ or (CFS): \_\_\_\_\_ or (g/min): \_\_\_\_\_

Relinquished by: (Signature) Matt Morton Received by: (Signature) Tom Daniel  
Tom Daniel Date (mm/dd/yyyy): 4-25-23 Time (24 hr): 14:30  
Tom Daniel Date (mm/dd/yyyy): 4-26-23 Time (24 hr): 1900

# Chain of Custody

**Scheduled for: 04/19/2023**



**Client:** Big Rivers Electric Corporation Wilson Station

**Report To:**  
 Big Rivers Electric Corporation Wilson Station  
 Dawn Stockman  
 PO Box 24  
 Henderson, KY 42419

**Invoice To:**  
 Big Rivers Electric Corporation Wilson Station  
 Dawn Stockman  
 PO Box 24  
 Henderson, KY 42419

**Project:** MW-100 Wilson 082-00064

Phone: (270) 844-6000  
 PWS ID#: \_\_\_\_\_  
 State: KY

PO#: \_\_\_\_\_  
 Quote#: \_\_\_\_\_

Please Print Legibly

Collected by (Signature): Tina Speed

Compliance Monitoring? Yes  No

Samples Chilled? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end line below.

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY	Required Information*		Bottle and Preservative	Contaminant	Sample Description	Composite	Sample Analysis Requested
Workorder # 3043162 Sample ID#	Date (mm/dd/yy)	Collection Time (24 hr)					
3043162-01 A	<u>04-19-23</u>	<u>1335</u>	Plastic 1L	1	MW-100	g/c	TDS Fluoride 300.0 Sulfate 300.0 Conductivity (Lab) Chloride 100.0 Alkalinity Total Alkalinity Carbonate Alkalinity Bicarbonate Zinc Tot 6020 Lithium Tot 6020 Sodium Tot 60108 Selenium Tot 6020 Potassium Tot 60108 Nickel Tot 6020 Molybdenum Tot 6020 Magnesium Tot 60108 Iron Tot 60108 Lead Tot 6020 Hardness Titration Copper Tot 6020 Cobalt Tot 6020 Chromium Tot 6020 Boron Tot 60108
3043162-01 B	<u>4/24/23</u>	<u>1335</u>	Plastic 500mL pH<2 w/HNO3	1	MW-100	g/c	Zinc Tot 6020 Lithium Tot 6020 Sodium Tot 60108 Selenium Tot 6020 Potassium Tot 60108 Nickel Tot 6020 Molybdenum Tot 6020 Magnesium Tot 60108 Iron Tot 60108 Lead Tot 6020 Hardness Titration Copper Tot 6020 Cobalt Tot 6020 Chromium Tot 6020 Boron Tot 60108

Preservation Check: pH:

3043162-01 C 4-24-23 1335 Plastic 500mL pH<2 w/H2SO4 1 MW-100 g/c TOC COD

Preservation Check: pH:

3043162-01 D 4-24-23 1335 OG 250mL pH<2 w/HCL 1 MW-100 g/c Mercury Tot 245.7

3043162-01 E 4-24-23 1335 OG 250mL pH<2 w/HCL 1 MW-100 g/c

Thermometer Serial Number  
181390287  
181460057  
 Temp 31.5 °C

Preservation Check Performed by: JP

Field data collected by: Tina Speed Date (mm/dd/yy) 04-24-23 Time (24 hr) 1335

pH 6.44 Cond (umho) 3.01 Res O (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC) 14.55 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb (NTU) \_\_\_\_\_

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature) Tina Speed

Received by: (Signature) [Signature]

Date (mm/dd/yy) 4/24/23 Time (24 hr) 1430

### Chain of Custody

Scheduled for: **04/19/2023**



Client: **Big Rivers Electric Corporation Wilson Station**

Report To:  
**Big Rivers Electric Corporation Wilson Station**  
**Dawn Storduman**  
**PO Box 24**  
**Henderson, KY 42419**

Invoice To:  
**Big Rivers Electric Corporation Wilson Station**

**Dawn Storduman**  
**PO Box 24**  
**Henderson, KY 42419**

Project: **MW-100 Wilson 032-06004**

Phone: **(270) 844-6000**

PWS ID#:

State: **KY**

PO# \_\_\_\_\_

Quote# \_\_\_\_\_

Please Print Legibly

Collected by (Signature): *[Signature]*

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time, and time and temp (oC) at end time below:

Samples Chlorinated? Yes  No

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	*required information* Date (mm/dd/yyyy) Collection Time (24 hr):	Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3043162-01 F	<u>4-24-23</u> <u>1335</u>	Plastic 1L pH<2 w/HNO3 Rad 226 (Sub)	1	MW-100	g/c	Radium 226 (sub)
		Preservation Check: pH: <input checked="" type="checkbox"/>				
3043162-01 G	<u>4-24-23</u> <u>1335</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW-100	g/c	Radium 228 (sub)
		Preservation Check: pH: <input checked="" type="checkbox"/>				
3043162-01 H	<u>4-24-23</u> <u>1335</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW-100	g/c	Radium 228 (sub)
		Preservation Check: pH: <input checked="" type="checkbox"/>				
3043162-01 I	<u>4-24-23</u> <u>1335</u>	Plastic 1L pH<2 w/HNO3 (Sub)	1	MW-100	g/c	Radium Total (sub)
		Preservation Check: pH: <input checked="" type="checkbox"/>				
3043162-01 J	<u>4-24-23</u> <u>1335</u>	AG 250mL pH<2 w/H2SO4	1	MW-100	g/c	TOC
		Preservation Check: pH: <input checked="" type="checkbox"/>				
3043162-02 A	<u>4-24-23</u> <u>1335</u>	CG 250mL pH<2 w/HCl Field Blank	1	Mercury Field Blank	g/c	Mercury Total (sub)

ThermoFisher Certificate Number

181390287

181460057

Temp 30.0 °C

Preservation Check Performed by *[Signature]*

Field data collected by: *[Signature]* Date (mm/dd/yyyy) 4-24-23 Time (24 hr) 1335

pH 6.44 Conductivity 3.61 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC) 14.55 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by (Signature): *[Signature]*

Received by (Signature): *[Signature]*

Date (mm/dd/yyyy) 4/11/23

Time (24 hr) 1432

### Chain of Custody

Scheduled for: **04/19/2023**



Client: **Big Rivers Electric Corporation Wilson Station**

Report To:  
**Big Rivers Electric Corporation Wilson Station**  
Dawn Storckman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
**Big Rivers Electric Corporation Wilson Station**  
Dawn Storckman  
PO Box 24  
Henderson, KY 42419

Project: **MW-110 Wilson 092-00064**

Phone: **(270) 844-6000**

PWS ID#:

State: **Ky**

PO# \_\_\_\_\_

Quoted \_\_\_\_\_

Please Print Legibly

Collected by (Signature): *[Signature]*  
\*required information

Compliance Monitoring? Yes  No

Samples Chlorinated? Yes  No

\*For composite samples please indicate begin time, end time and temp (°C) at end time below:

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

LAB USE ONLY Workorder # 3043163 Sample ID#	*required information* Date (mm/dd/yyyy): 04-25-23	Collection Time (24 hr) 0825	Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3043163-01 A	04-25-23	0825	Plastic 1L	1	MW110	g/c	TDS Fluoride 300.0 Sulfate 300.0 Conductivity (Lab) Chloride 300.0 Alkalinity Total Alkalinity Carbonate Alkalinity Bicarbonate Zinc Tot 8020 Lithium Tot 8020 Sodium Tot 6010B Selenium Tot 6020 Potassium Tot 6010B Nickel Tot 8020 Molybdenum Tot 6020 Magnesium Tot 6010B Iron Tot 6010B Lead Tot 6020 Hardness Titration Copper Tot 6020 Cobalt Tot 8020 Chromium Tot 8001 Boron Tot 8010B
3043163-01 B	04-25-23	0825	Plastic 500ml pH<2 withHCl	1	MW110	g/c	Zinc Tot 8020 Lithium Tot 8020 Sodium Tot 6010B Selenium Tot 6020 Potassium Tot 6010B Nickel Tot 8020 Molybdenum Tot 6020 Magnesium Tot 6010B Iron Tot 6010B Lead Tot 6020 Hardness Titration Copper Tot 6020 Cobalt Tot 8020 Chromium Tot 8001 Boron Tot 8010B
3043163-01 C	04-25-23	0825	Plastic 500ml pH<2 withHCl	1	MW110	g/c	TOC COD
3043163-01 D	04-25-23	0825	CG 250ml pH<2 withHCl	1	MW110	g/c	Mercury Tot 245.7
3043163-01 E	04-25-23	0825	CG 250ml pH<2 withHCl	1	MW110	g/c	Mercury Tot 245.7

Preservation Check: pH:

Preservation Check: pH:

Thermometer Serial Number

181390287

181460057

Preservation Check Performed by: *[Signature]*

Field data collected by: *[Signature]* Date (mm/dd/yyyy): 04-25-23 Time (24 hr) 0825

pH 6.71 Cond (µmho) 472 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (°C) 16.29 or (°F) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature)

Received by: (Signature)

Date (mm/dd/yyyy)

Time (24 hr)

*[Signature]*

*[Signature]*

4-26-23

1400



# Chain of Custody

Scheduled for: 04/19/2023



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Stockman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station

Project: MW-111 Wilson 092-00004

Dawn Stockman  
PO Box 24  
Henderson, KY 42419

Please Print Legibly

Phone: (270) 844-6000  
PWS ID# \_\_\_\_\_  
State: KY

PO# \_\_\_\_\_  
Quote# \_\_\_\_\_

Collected by (Signature): [Signature]

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time end time and temp(C) at end time below

Samples Chlorinated? Yes  No

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	*required information* Date (mm/dd/yy):	Collection Time (24 hr):	Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3043164-01 F	<u>4-24-23</u>	<u>11:56A</u>	Plastic 1L pH<2 w/HNO3 Rad 226 (Sub)	1 ✓	MW-111	g/c	Radium 226 (sub)
			Preservation Check: pH: _____				
3043164-01 G	<u>4-24-23</u>	<u>11:56A</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1 ✓	MW-111	g/c	Radium 228 (sub)
			Preservation Check: pH: _____				
3043164-01 H	<u>4-24-23</u>	<u>11:56A</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1 ✓	MW-111	g/c	Radium 228 (sub)
			Preservation Check: pH: _____				
3043164-01 I	<u>4-24-23</u>	<u>11:56A</u>	Plastic 1L pH<2 w/HNO3 (Sub)	1 ✓	MW-111	g/c	Radium Total (sub)
			Preservation Check: pH: _____				
3043164-01 J	<u>4-24-23</u>	<u>11:56A</u>	AG 250mL pH<2 w/H2SO4	1 ✓	MW-111	g/c	TDC
			Preservation Check: pH: _____				
3043164-02 A	<u>4-24-23</u>	<u>11:56A</u>	CG 250mL pH<2 w/HCl Field Blank	1 ✓	Mercury Field Blank	g/c	Thermometer Serial Number 181390287 181460057 Temp <u>21.8</u> °C

Preservation Check Performed by: [Signature]

Field data collected by Matt Morton Date (mm/dd/yy) 4-24-23 Time (24 hr) 11:56A

pH 7.24 Cond (umho/cm) 363.5 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC) 17.10 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>[Signature]</u>	Date (mm/dd/yy) <u>4-24-23</u>	Time (24 hr) <u>1400</u>
		<u>4/12/23</u>	<u>1432</u>

### Chain of Custody

Scheduled for: **04/19/2023**



Client: **Big Rivers Electric Corporation Wilson Station**

Report To:  
**Big Rivers Electric Corporation Wilson Station**  
**Dawn Stordeman**  
**PO Box 24**  
**Henderson, KY 42419**

Invoice To:  
**Big Rivers Electric Corporation Wilson Station**

Project: **MW-111 Wilson 092-00004**

**Orvin Stordeman**  
**PO Box 24**  
**Henderson, KY 42419**

Phone: **(270) 844-6000**

PO#: \_\_\_\_\_

PWS ID# \_\_\_\_\_  
State: **KY**

Quoted: \_\_\_\_\_

Please Print Legibly

Collected by (Signature): *Matt Morton*  
\*required information\*

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time, end time and temp(°C) at end time below.

Samples Chlorinated? Yes  No

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

LAB USE ONLY	*required information*						
Workorder #	Date	Collection	Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3043164	(mm/dd/yyyy)	Time (24 hr)					
Sample ID#							
3043164-01 A	<u>4-24-23</u>	<u>11:56</u>	Plastic 1L	1	MW-111	g/c	Alkalinity Carbonate TDS Alkalinity Total Sulfate 300.0 Alkalinity Bicarbonate Fluoride 300.0 Conductivity (Lab) Chloride 300.0 Arsenic Tot 6020 Cobalt Tot 6020 Beryllium Tot 6020 Antimony Tot 6020 Lead Tot 6020 Barium Tot 6020 Boron Tot 60108 Nickel Tot 6020 Calcium Tot 60108 Zinc Tot 6020 Chromium Tot 6020 Hardness Titanium Thallium Tot 6020 Sodium Tot 60108 Selenium Tot 6020
3043164-01 B	<u>4-24-23</u>	<u>11:56</u>	Plastic 500mL pH<2 w/HNO3	1	MW-111	g/c	
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3043164-01 C	<u>4-24-23</u>	<u>11:56</u>	Plastic 500mL pH<2 w/H2SO4	1	MW-111	g/c	COD TOC
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3043164-01 D	<u>4-24-23</u>	<u>11:56</u>	CG 250mL pH<2 w/HCL	1	MW-111	g/c	Mercury Tot 245.7
3043164-01 E	<u>4-24-23</u>	<u>11:56</u>	CG 250mL pH<2 w/HCL	1	MW-111	g/c	Thermometer Serial Number

181390287  
181460057  
Temp 3.8 °C

Preservation Check Performed by: OT

Field data collected by: Matt Morton Date (mm/dd/yyyy): 4-24-23 Time (24 hr): 11:56A

pH: 7.24 Cond (µmho/cm): 3.65 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (°C): 7.10 or (°F) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature)	Received by: (Signature)	Date (mm/dd/yyyy)	Time (24 hr)
<u><i>Matt Morton</i></u>	<u><i>[Signature]</i></u>	<u>4-24-23</u>	<u>14:00</u>
<u><i>[Signature]</i></u>	<u><i>[Signature]</i></u>	<u>4/24/23</u>	<u>2:32</u>

### Chain of Custody

Scheduled for: 04/19/2023



Client: **Big Rivers Electric Corporation Wilson Station**

Report To:  
**Big Rivers Electric Corporation Wilson Station**  
**Dawn Storkman**  
**PO Box 24**  
**Henderson, KY 42419**

Invoice To:  
**Big Rivers Electric Corporation Wilson Station**  
**Dawn Storkman**  
**PO Box 24**  
**Henderson, KY 42419**

Project: **MW-112 Wilson 092-00004**

Phone: (270) 844-6000  
PWS ID#: \_\_\_\_\_  
State: KY

PO#: \_\_\_\_\_  
Quote# \_\_\_\_\_

Please Print Legibly

Collected by (Signature): *Tom Sand*  
required information

Compliance Monitoring? Yes  No

Samples Chlorinated? Yes  No

\*For composite samples please indicate begin time, end time and temp(°C) at end time below:

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	*required information* Date (mm/dd/yy) Collection Time (24 hr):	Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3043185-01 A	<u>4-24-23</u> <u>1200</u>	Plastic 1L	1	MW-112	g/c	Alkalinity Carbonate TDS Alkalinity Total Sulfate 300.0 Alkalinity Bicarbonate Fluoride 300.0 Conductivity (Lab) Chloride 300.0 Arsenic Tot 6020 Cobalt Tot 6020 Beryllium Tot 6020 Antimony Tot 6020 Lead Tot 6020 Barium Tot 6020 Boron Tot 60108 Nickel Tot 6020 Calcium Tot 60108 Zinc Tot 6020 Chromium Tot 6020 Hardness Titanium Thallium Tot 6020 Sodium Tot 60108 Selenium Tot 6020
3043185-01 B	<u>4-24-23</u> <u>1200</u>	Plastic 500mL pH=2 w/HClO	1	MW-112	g/c	
		Preservation Check: pH: <u>✓</u>				
3043185-01 C	<u>4-24-23</u> <u>1200</u>	Plastic 500mL pH=2 w/H2SO4	1	MW-112	g/c	COO TOC
		Preservation Check: pH: <u>✓</u>				
3043185-01 D	<u>4-24-23</u> <u>1200</u>	CG 250mL pH=2 w/HCL	1	MW-112	g/c	Mercury Tot 245.7
3043185-01 E	<u>4-24-23</u> <u>1200</u>	CG 250mL pH=2 w/HCL	1	MW-112	g/c	Mercury Tot 245.7

Thermometer Serial Number

181390287

181460057

Temp 3.8 °C

Preservation Check Performed by JF

Field data collected by: Tom Sand Date (mm/dd/yy): 4/24/23 Time (24 hr): 1200

pH: 6.19 Cond (umol): 1.44 Res Cl (mg/L): \_\_\_\_\_ Tot Cl (mg/L): \_\_\_\_\_ Free Cl (mg/L): \_\_\_\_\_

Temp (°C): 15.35 or (°F): \_\_\_\_\_ Static Water Level: \_\_\_\_\_ DO (mg/L): \_\_\_\_\_ Turb. (NTU): \_\_\_\_\_

Flow (MGD): \_\_\_\_\_ or (CFS): \_\_\_\_\_ or (g/min): \_\_\_\_\_

Relinquished by (Signature): *Tom Sand* Received by (Signature): *James Johnson* Date (mm/dd/yy): 4/24/23 Time (24 hr): 1432

# Chain of Custody

Scheduled for: **04/19/2023**



Client: **Big Rivers Electric Corporation Wilson Station**

Report To:  
**Big Rivers Electric Corporation Wilson Station**  
**Dawn Stockman**  
**PO Box 24**  
**Henderson, KY 42419**

Invoice To:  
**Big Rivers Electric Corporation Wilson Station**

Project: **MW-112 Wilson 092-00004**

**Dawn Stockman**  
**PO Box 24**  
**Henderson, KY 42419**

Phone: **(270) 844-6000**

PWS ID#:

PO#:

Please Print Legibly

State: Ky

Quote#:

Collected by (Signature): [Signature]

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below

Samples Chlorinated? Yes  No

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # 3043185 Sample ID#	*required information* Date (mm/dd/yy): Collection Time (24 hr)	Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3043185-01 F	<u>4-24-23</u> <u>1200</u>	Plastic 1L pH<2 w/HNO3 Rad 226 (Sub)	1	MW-112	g/c	Radium 226 (sub)
		Preservation Check: pH: <input checked="" type="checkbox"/>				
3043185-01 G	<u>4-24-23</u> <u>1200</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW-112	g/c	Radium 228 (sub)
		Preservation Check: pH: <input checked="" type="checkbox"/>				
3043185-01 H	<u>4-24-23</u> <u>1200</u>	Plastic 1L pH<2 w/HNO3 Rad 229 (Sub)	1	MW-112	g/c	Radium 228 (sub)
		Preservation Check: pH: <input checked="" type="checkbox"/>				
3043185-01 I	<u>4-24-23</u> <u>1200</u>	Plastic 1L pH<2 w/HNO3 (Sub)	1	MW-112	g/c	Radium Total (sub)
		Preservation Check: pH: <input checked="" type="checkbox"/>				
3043185-01 J	<u>4-24-23</u> <u>1200</u>	AG 250mL pH<2 w/H2SO4	1	MW-112	g/c	TOC
		Preservation Check: pH: <input checked="" type="checkbox"/>				
3043185-02 A	<u>4-24-23</u> <u>1200</u>	CG 250mL pH<2 w/HCl Field Blank	1	Mercury Field Blank		Mercury Total Field Blank

Thermometer Serial Number  
181390287  
181460057  
Temp 23.0  
81.8

Preservation Check Performed by: JF

Field data collected by: Tina Speed Date (mm/dd/yy) 04-24-23 Time (24 hr) 1200

pH 6.13 Cond (umho/cm) 1.44 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC) 15.35 or (oF) \_\_\_\_\_ Sat'd Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature) [Signature] Received by: (Signature) [Signature] Date (mm/dd/yy) 4/24/23 Time (24 hr) 1430

# Chain of Custody

Scheduled for: **04/19/2023**



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Storckman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Storckman  
PO Box 24  
Henderson, KY 42419

Project: MW-113 Wilson 092-00004

Phone: (270) 944-6000

PWS ID#:

State: Ky

PO# \_\_\_\_\_

Quote# \_\_\_\_\_

Please Print Legibly

Collected by (Signature): [Signature]

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below.

Samples Chlorinated? Yes  No

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	Required Information* Date (mm/dd/yy) Collection Time (24 hr)	Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3043166-01 F	<u>04-24-23</u> <u>16:25</u>	Plastic 1L pH<2 w/HNO3 Rad 226 (Sub)	1	MW-113	g / c	Radium 226 (sub)
		Preservation Check: pH: <input checked="" type="checkbox"/>				
3043166-01 G	<u>04-24-23</u> <u>16:15</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW-113	g / c	Radium 228 (sub)
		Preservation Check: pH: <input checked="" type="checkbox"/>				
3043166-01 H	<u>04-24-23</u> <u>16:15</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW-113	g / c	Radium 228 (sub)
		Preservation Check: pH: <input checked="" type="checkbox"/>				
3043166-01 I	<u>04-24-23</u> <u>16:15</u>	Plastic 1L pH<2 w/HNO3 (Sub)	1	MW-113	g / c	Radium Total (sub)
		Preservation Check: pH: <input checked="" type="checkbox"/>				
3043166-01 J	<u>04-24-23</u> <u>16:15</u>	AG 250mL pH<2 w/H2SO4	1	MW-113	g / c	TOC
		Preservation Check: pH: <input checked="" type="checkbox"/>				
3043166-02 A	<u>04-24-23</u> <u>16:15</u>	CB 250mL pH<2 w/HCl Field Blank	1	Mercury Field Blank		Thermometer Serial Number 181390237 181460057 Temp <u>31.0</u> °C

Preservation Check Performed by: \_\_\_\_\_

Field data collected by: [Signature] Date (mm/dd/yy) 04-24-23 Time (24 hr) 16:15  
pH 7.25 Cond (umho/cm) 2.20 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_  
Temp (oC) 17.20 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_  
Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature) [Signature]

Received by: (Signature) [Signature]

Date (mm/dd/yy) 4/24/23 Time (24 hr) 1432



### Chain of Custody

Scheduled for: **04/19/2023**



Client: **Big Rivers Electric Corporation Wilson Station**

Report To:  
**Big Rivers Electric Corporation Wilson Station**  
Dawn Storkman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
**Big Rivers Electric Corporation Wilson Station**  
Dawn Storkman  
PO Box 24  
Henderson, KY 42419

Project: **MW-113 Wilson 082-00804**

Phone: **(270) 844-6000**  
PWS ID#: \_\_\_\_\_  
State: **KY**

PO# \_\_\_\_\_  
Quote# \_\_\_\_\_

Please Print Legibly

Collected by (Signature): *Tami Sneed*  
Required Information

Compliance Monitoring? Yes  No

Samples Chlorinated? Yes  No

\*For composite samples please indicate begin time, end time and temp(°C) at end time below

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

LAB USE ONLY	*required information*		Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
Workorder #	Date (mm/dd/yy)	Collection Time (24 hr)					
3043166 Sample ID#							
3043166-01 A	<u>4-24-23</u>	<u>10:15</u>	Plastic 1L	1	MW-113	g/c	TDS Fluoride 300.0 Sulfate 300.0 Conductivity (Lab) Chloride 300.0 Alkalinity Total Alkalinity Carbonate Alkalinity Bicarbonate Zinc Tot 6020 Lithium Tot 6020 Sodium Tot 6010B Selenium Tot 6020 Potassium Tot 6010B Nickel Tot 6020 Molybdenum Tot 6020 Magnesium Tot 6010B Iron Tot 6010B Lead Tot 6020 Hardness Titration Copper Tot 6020 Cobalt Tot 6020 Chromium Tot 6020 Boron Tot 6010B
3043166-01 B	<u>4-24-23</u>	<u>10:15</u>	Plastic 500mL pH<2 w/HNO3	1	MW-113	g/c	Zinc Tot 6020 Lithium Tot 6020 Sodium Tot 6010B Selenium Tot 6020 Potassium Tot 6010B Nickel Tot 6020 Molybdenum Tot 6020 Magnesium Tot 6010B Iron Tot 6010B Lead Tot 6020 Hardness Titration Copper Tot 6020 Cobalt Tot 6020 Chromium Tot 6020 Boron Tot 6010B
3043166-01 C	<u>4-24-23</u>	<u>10:15</u>	Plastic 500mL pH<2 w/H2SO4	1	MW-113	g/c	TOC COD
3043166-01 D	<u>4-24-23</u>	<u>10:15</u>	CG 250mL pH<2 w/HCL	1	MW-113	g/c	Mercury Tot 245 7
3043100-01 E	<u>4-24-23</u>	<u>10:15</u>	CG 250mL pH<2 w/HCL	1	MW-113	g/c	Thermometer Serial Number <u>181390287</u> <u>181460057</u> Temp <u>3.8</u> °C

Preservation Check Performed by: *Tami Sneed*

Field data collected by: Tami Sneed Date (mm/dd/yy) 04/24/23 Time (24 hr) 10:15

pH 7.25 Cond <sup>26</sup> 2.20 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (°C) 17.20 or (°F) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature) *Tami Sneed* Received by: (Signature) *Jimmie Fink* Date (mm/dd/yy) 4/24/23 Time (24 hr) 1432

### Chain of Custody

Scheduled for: 04/19/2023



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Storchman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Storchman  
PO Box 24  
Henderson, KY 42419

Project: MW-104 Wilson 092-00064

Phone: (270) 844-6000  
PWS ID#: \_\_\_\_\_  
State: KY

PO#: \_\_\_\_\_  
County: \_\_\_\_\_

Please Print Legibly

Collected by (Signature): [Signature]  
required information

Compliance Monitoring? Yes  No

Samples Chlorinated? Yes  No

\*For composite samples please indicate begin time, end time and temp (C) at end time below.

Influent: Start Date \_\_\_\_\_ Start Time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (C) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start Time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (C) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	*required information* Date (mm/dd/yyyy) Collection Time (24 hr)		Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3043167-01 A	<u>4-25-23</u>	<u>8:40</u>	Plastic 1L	1	MW104	g/c	TDS Fluoride 300.0 Sulfate 300.0 Conductivity (Lab) Chloride 300.0 Alkalinity Total Alkalinity Carbonate Alkalinity Bicarbonate
3043167-01 B	<u>4-25-23</u>	<u>8:40</u>	Plastic 500ml pH<2 w/ HNO3	1	MW104	g/c	Zinc Tot 6020 Lithium Tot 6020 Sodium Tot 6010G Selenium Tot 6020 Potassium Tot 6010B Nickel Tot 6020 Molybdenum Tot 6020 Magnesium Tot 6010B Iron Tot 6010B Lead Tot 6020 Hardness Titration Copper Tot 6020 Cobalt Tot 6020 Chromium Tot 6020 Boron Tot 6010B
				Preservation Check: pH: <input checked="" type="checkbox"/>			
3043167-01 C	<u>4-25-23</u>	<u>8:40</u>	Plastic 500ml pH<2 w/ H2SO4	1	MW104	g/c	TOC COD
				Preservation Check: pH: <input checked="" type="checkbox"/>			
3043167-01 D	<u>4-25-23</u>	<u>8:40</u>	CG 250ml pH<2 w/HCL	1	MW104	g/c	Mercury Tot 245.7
3043167-01 E	<u>4-25-23</u>	<u>8:40</u>	CG 250ml pH<2 w/HCL	1	MW104	g/c	Mercury Tot 245.7

Preservation Check Performed by: [Signature]

Thermometer Serial Number

181390287

Field data collected by	<u>[Signature]</u>	Date (mm/dd/yyyy)	<u>4-25-23</u>	Time (24 hr)	<u>8:40</u>	Temp <u>0.6</u> °C
pH	<u>6.81</u>	Cond (umho)	<u>2.11</u>	Res Cl (mg/L)	_____	Free Cl (mg/L)
Temp (C)	<u>15.47</u>	or (oF)	_____	Static Water Level	_____	DO (mg/L)
Flow (MGD)	_____	or (CFS)	_____	or (g/min)	_____	Turb. (NTU)

Relinquished by (Signature)

[Signature]

Received by (Signature)

[Signature]

Date (mm/dd/yyyy)

4-26-23

Time (24 hr)

1400

# Chain of Custody

Scheduled for: **04/19/2023**



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Stordman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Stordman  
PO Box 24  
Henderson, KY 42419

Project: MW-40 Wilson 082-00004

Phone: (270) 844-6000  
PWS ID#: \_\_\_\_\_  
State: Ky

PO#: \_\_\_\_\_  
Quote#: \_\_\_\_\_

Please Print Legibly

Collected by (Signature): Troy Sneed

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time, end time and temp(°C) at end time below

Samples Chlorinated? Yes  No

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	*required information* Date (mm/dd/yyyy): Collection Time (24 hr):	Bottle and Preservative	Containers	Sample Description	Compos	Sample Analytes Requested
3043171-01 A	<u>4-26-23</u> <u>18:10</u>	Plastic 1L	1	MW40	g/c	Alkalinity Bicarbonate TDS Alkalinity Carbonate Fluoride 300.0 Chloride 300.0 Conductivity (Lab) Sulfate 300.0 Alkalinity Total Ammony Tot 6020 Lead Tot 6020 Barium Tot 6020 Boron Tot 6010B Cadmium Tot 6020 Calcium Tot 6010B Chromium Tot 6020 Copper Tot 6020 Arsenic Tot 6020 Potassium Tot 6010B Beryllium Tot 6020 Hardness Titration Thallium Tot 6020 Selenium Tot 6020
3043171-01 B	<u>4-26-23</u> <u>18:10</u>	Plastic 500mL pH<2 w/HNO3	1	MW40	g/c	
3043171-01 C	<u>4-26-23</u> <u>18:10</u>	Plastic 500mL pH<2 w/H2SO4	1	MW40	g/c	COO TOC
3043171-01 D	<u>4-26-23</u> <u>18:10</u>	CG 250mL pH<2 w/MCL	1	MW40	g/c	Mercury Tot 245.7
3043171-01 E	<u>4-26-23</u> <u>18:10</u>	CG 250mL pH<2 w/MCL	1	MW40		Thermocross Serial Number

Preservation Check: pH:

Preservation Check: pH:

Preservation Check Performed by: ael

181390287  
 181460057  
Temp 0.6 °C

Field data collected by Troy Sneed Date (mm/dd/yyyy) 4-26-23 Time (24 hr) 18:10  
pH 6.46 Cond (umho/cm) 7.56 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_  
Temp (°C) 17.16 or (°F) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_  
Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by (Signature): Troy Sneed Received by (Signature): Amey Par  
Date (mm/dd/yyyy): 4-26-23 Time (24 hr): 11:00

# Chain of Custody

Scheduled for: **04/19/2023**



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Down Storkman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station  
Down Storkman  
PO Box 24  
Henderson, KY 42419

Project: MW-5 Wilson 092-00004

Phone: (270) 844-6000  
PWS ID# \_\_\_\_\_  
State: KY

PO# \_\_\_\_\_  
Quote# \_\_\_\_\_

Please Print Legibly

Collected by (Signature) Tom Sneed

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time, end time and temp(°C) at end time below

Samples Chlorinated? Yes  No

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

LAB USE ONLY Workorder # 3043172 Sample ID#	"required information" Date (mm/dd/yy):	Collection Time (24 hr)	Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3043172-01 A	<u>4-25-23</u>	<u>11:20</u>	Plastic 1L	1	MW5	g/c	Alkalinity Carbonate TDS Alkalinity Total Sulfate 300.0 Alkalinity Bicarbonate Fluoride 300.0 Conductivity (Lab) Chloride 300.0 Ammony Tot 6020 Molybdenum Tot 6020 Magnesium Tot 6010B Lithium Tot 6020 Zinc Tot 6020 Iron Tot 6010B Copper Tot 6020 Chromium Tot 6020 Beryllium Tot 6020 Selenium Tot 6020 Lead Tot 6020 Barium Tot 6020 Boron Tot 6010B Cadmium Tot 6020 Calcium Tot 6010B
3043172-01 B	<u>4-25-23</u>	<u>11:20</u>	Plastic 500mL pH<2 w/HNO3	1	MW5	g/c	Alkalinity Carbonate TDS Alkalinity Total Sulfate 300.0 Alkalinity Bicarbonate Fluoride 300.0 Conductivity (Lab) Chloride 300.0 Ammony Tot 6020 Molybdenum Tot 6020 Magnesium Tot 6010B Lithium Tot 6020 Zinc Tot 6020 Iron Tot 6010B Copper Tot 6020 Chromium Tot 6020 Beryllium Tot 6020 Selenium Tot 6020 Lead Tot 6020 Barium Tot 6020 Boron Tot 6010B Cadmium Tot 6020 Calcium Tot 6010B
3043172-01 C	<u>4-25-23</u>	<u>11:20</u>	Plastic 500mL pH<2 w/H2SO4	1	MW5	g/c	Alkalinity Carbonate TDS Alkalinity Total Sulfate 300.0 Alkalinity Bicarbonate Fluoride 300.0 Conductivity (Lab) Chloride 300.0 Ammony Tot 6020 Molybdenum Tot 6020 Magnesium Tot 6010B Lithium Tot 6020 Zinc Tot 6020 Iron Tot 6010B Copper Tot 6020 Chromium Tot 6020 Beryllium Tot 6020 Selenium Tot 6020 Lead Tot 6020 Barium Tot 6020 Boron Tot 6010B Cadmium Tot 6020 Calcium Tot 6010B
3043172-01 D	<u>4-25-23</u>	<u>11:20</u>	CG 250mL pH<2 w/HCL	1	MW5	g/c	Alkalinity Carbonate TDS Alkalinity Total Sulfate 300.0 Alkalinity Bicarbonate Fluoride 300.0 Conductivity (Lab) Chloride 300.0 Ammony Tot 6020 Molybdenum Tot 6020 Magnesium Tot 6010B Lithium Tot 6020 Zinc Tot 6020 Iron Tot 6010B Copper Tot 6020 Chromium Tot 6020 Beryllium Tot 6020 Selenium Tot 6020 Lead Tot 6020 Barium Tot 6020 Boron Tot 6010B Cadmium Tot 6020 Calcium Tot 6010B
3043172-01 E	<u>4-25-23</u>	<u>11:20</u>	CG 250mL pH<2 w/HCL	1	MW5	g/c	Alkalinity Carbonate TDS Alkalinity Total Sulfate 300.0 Alkalinity Bicarbonate Fluoride 300.0 Conductivity (Lab) Chloride 300.0 Ammony Tot 6020 Molybdenum Tot 6020 Magnesium Tot 6010B Lithium Tot 6020 Zinc Tot 6020 Iron Tot 6010B Copper Tot 6020 Chromium Tot 6020 Beryllium Tot 6020 Selenium Tot 6020 Lead Tot 6020 Barium Tot 6020 Boron Tot 6010B Cadmium Tot 6020 Calcium Tot 6010B

Preservation Check: pH:

Preservation Check Performed by: ASL

Thermometer Serial Number

181390287

Field data collected by	<u>Tom Sneed</u>	Date (mm/dd/yy)	<u>4-25-23</u>	Time (24 hr)	<u>11:20</u>	Temp	<u>6.1°C</u>
pH	<u>6.47</u>	Cond (µmho)	<u>7.19</u>	Res Cl (mg/L)	_____	Tot Cl (mg/L)	_____
Temp (°C)	<u>12.26</u>	or (°F)	_____	Static Water Level	_____	DO (mg/L)	_____
Flow (MGD)	_____	or (CFS)	_____	or (g/min)	_____	Turb. (NTU)	_____

Relinquished by: (Signature)

Received by: (Signature)

Date (mm/dd/yy)

Time (24 hr)

Tom Sneed

Ammy Kari

4-25-23

1400

### Chain of Custody

Scheduled for: **04/19/2023**



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Stockman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Stockman  
PO Box 24  
Henderson, KY 42419

Project: MW-6 Wilson 092-00004

Phone: (270) 844-6000  
PVVS ID#:  
State: Ky

PO#: \_\_\_\_\_  
Quote# \_\_\_\_\_

Please Print Legibly

Collected by (Signature): [Signature]

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time, end time and temp (°C) at end time below.

Samples Chlorinated? Yes  No

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	'required information' Date (mm/dd/yy)	Collection Time (24 hr)	Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3043173-01 A	<u>4-25-23</u>	<u>1300</u>	Plastic 1L	1	MW6	g/c	Alkalinity Carbonate TDS Alkalinity Total Sulfate 300.0 Alkalinity Bicarbonate Fluoride 300.0 Conductivity (Lab) Chloride 300.0 Arsenic Tot 6020 Cobalt Tot 6020 Beryllium Tot 6020 Antimony Tot 6020 Lead Tot 6020 Barium Tot 6020 Boron Tot 60108 Nickel Tot 6020 Calcium Tot 60109 Zinc Tot 6020 Chromium Tot 6020 Hardness Thallium Tot 6020 Sodium Tot 60108 Selenium Tot 6020
3043173-01 B	<u>4-25-23</u>	<u>1300</u>	Plastic 500mL pH<2 wHNO3	1	MW6	g/c	
			Preservation Check: pH: <u>✓</u>				
3043173-01 C	<u>4-25-23</u>	<u>1300</u>	Plastic 500mL pH<2 wH2SO4	1	MW6	g/c	COD TOC
			Preservation Check: pH: <u>✓</u>				
3043173-01 D	<u>4-25-23</u>	<u>1300</u>	CG 250mL pH<2 wHCL	1	MW6	p/c	Mercury Tot 245.7
3043173-01 E	<u>4-25-23</u>	<u>1300</u>	CG 250mL pH<2 wHCL	1	MW6	p/c	Mercury Tot 245.7

Thermometer Serial Number

✓ 181390287  
181460057

Preservation Check Performed by: ALC

Field data collected by: Tom's Sand Date (mm/dd/yy) 4-25-23 Time (24 hr) 1300 Temp 2.5°C

pH 6.45 Cond (µmho) 3.11 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (°C) 17.65 or (°F) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by (Signature): [Signature] Received by (Signature): [Signature] Date (mm/dd/yy) 4-26-23 Time (24 hr) 1400



### Chain of Custody

Scheduled for: **04/19/2023**



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
 Big Rivers Electric Corporation Wilson Station  
 Dawn Storckman  
 PO Box 24  
 Henderson, KY 42419

Invoice To:  
 Big Rivers Electric Corporation Wilson Station  
 Dawn Storckman  
 PO Box 24  
 Henderson, KY 42419

Project: MW-7 Wilson 092-00004

Phone: (270) 844-8000  
 PWS ID# \_\_\_\_\_  
 State: **KY**

PO#: \_\_\_\_\_  
 Quote# \_\_\_\_\_

Please Print Legibly

Collected by (Signature): Matt Marton  
required information

Compliance Monitoring? Yes  No

Samples CMonitored? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY	*required information*							
Workorder #	Date	Collection	Container	Sample Description	Composite	Sample Analytes Requested		
3043174	(mm/dd/yyyy)	Time (24 hr)	1					
3043174-01 A	<u>4-25-23</u>	<u>1:52p</u>	Plastic 1L	MW7	g/c	Alkalinity Bicarbonate Fluoride 300.0 Chloride 300.0 Conductivity (Lab) Alkalinity Total Sulfate 300.0 TDS Alkalinity Carbonate Zinc Tot 6020 Thallium Tot 6020 Sodium Tot 6010B Selenium Tot 6020 Potassium Tot 6010B Nickel Tot 6020 Molybdenum Tot 6020 Barium Tot 6020 Lithium Tot 6020 Arsenic Tot 6020 Iron Tot 6010B Copper Tot 6020 Cobalt Tot 6020 Beryllium Tot 6020 Lead Tot 6020		
3043174-01 B	<u>4-25-23</u>	<u>1:52</u>	Plastic 500mL pH<2 w/HNO3	MW7	g/c			
			Preservation Check: pH	<input checked="" type="checkbox"/>				
3043174-01 C	<u>4-25-23</u>	<u>1:52</u>	Plastic 500mL pH<2 w/H2SO4	MW7	g/c	TOC COD		
			Preservation Check: pH	<input checked="" type="checkbox"/>				
3043174-01 D	<u>4-25-23</u>	<u>1:52</u>	CG 250mL pH<2 w/HCL	MW7	g/c	Mercury Tot 245.7		
3043174-01 E	<u>4-25-23</u>	<u>1:52</u>	CG 250mL pH<2 w/HCL	MW7	g/c	Mercury Tot 245.7		

Thermometer Serial Number

181390287  
 181460057

Preservation Check Performed by: Alex

Field data collected by: Matt Marton Date (mm/dd/yyyy) 4-25-23 Time (24 hr) 1:52

pH 6.55 Cond (umho) 278 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC) 17.65 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by (Signature)	Received by (Signature)	Date (mm/dd/yyyy)	Time (24 hr)
<u>Matt Marton</u>	<u>Tom Smith</u>	<u>04-25-23</u>	<u>14:30</u>
<u>Tom Smith</u>	<u>Amy Lee</u>	<u>4-26-23</u>	<u>14:00</u>

### Chain of Custody

Scheduled for: 04/19/2023



Client: **Big Rivers Electric Corporation Wilson Station**

Report To:  
**Big Rivers Electric Corporation Wilson Station**  
Dawn Storchman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
**Big Rivers Electric Corporation Wilson Station**  
Dawn Storchman  
PO Box 24  
Henderson, KY 42419

Project: **MW-8 Wilson 092-00004**

Phone: (270) 844-8000  
PWS ID: KY  
State: KY

PO# \_\_\_\_\_  
Quote# \_\_\_\_\_

Please Print Legibly

Collected by (Signature): Matt Morton

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below:

Samples Chlorinated? Yes  No

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY	*required information*						
Workorder #	Date	Collection	Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3043175	(mm/dd/yy)	Time (24 hr):					
Sample ID#							
3043175-01 A	<u>4-26-23</u>	<u>8:04</u>	Plastic 1L	1	MWB	g/c	Alkalinity Carbonate TDS Alkalinity Total Sulfate 300.0 Alkalinity Bicarbonate Fluoride 300.0 Conductivity (Lab) Chloride 300.0 Arsenic Tot 6020 Cobalt Tot 6020 Beryllium Tot 6020 Antimony Tot 6020 Lead Tot 6020 Barium Tot 6020 Boron Tot 6010B Nickel Tot 6020 Calcium Tot 6010B Zinc Tot 6020 Chromium Tot 6020 Hardness Titration Thallium Tot 6020 Sodium Tot 6010B Selenium Tot 6020
3043175-01 B	<u>4-26-23</u>	<u>8:04</u>	Plastic 500mL pH=2 WHNO3	1	MWB	g/c	
			Preservation Check: pH: <u>✓</u>				
3043175-01 C	<u>4-26-23</u>	<u>8:04</u>	Plastic 500mL pH=2 WH2SO4	1	MWB	g/c	COD TOC
			Preservation Check: pH: <u>✓</u>				
3043175-01 D	<u>4-26-23</u>	<u>8:04</u>	CG 250mL pH=2 WHCL	1	MWB	g/c	Mercury Tot 245.7
3043175-01 E	<u>4-26-23</u>	<u>8:04</u>	CG 250mL pH=2 WHCL	1	MWB	g/c	Mercury Tot 245.7

Thermometer Serial Number

✓ 181390287  
181460057

Preservation Check Performed by: AM

Field data collected by: Matt Morton Date (mm/dd/yy) 4-26-23 Time (24 hr) 8:04 Temp 15.12 °C

pH 6.41 Conductivity 117.3 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC) 15.12 or (oF) \_\_\_\_\_ Static Water Level 43.9 DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature) <u>Matt Morton</u>	Received by: (Signature) <u>Tina</u>	Date (mm/dd/yy) <u>4-26-23</u>	Time (24 hr) <u>12:24</u>
<u>Tina</u>	<u>curry</u>	<u>4-26-23</u>	<u>1400</u>

### Chain of Custody

Scheduled for: **04/19/2023**



**Client:** Big Rivers Electric Corporation Wilson Station

**Report To:**  
Big Rivers Electric Corporation Wilson Station  
Dawn Storckman  
PO Box 24  
Henderson, KY 42419

**Invoice To:**  
Big Rivers Electric Corporation Wilson Station  
Dawn Storckman  
PO Box 24  
Henderson, KY 42419

**Project:** Well Duplicate 1 Wilson 092-00004

Phone: (270) 844-6000  
PWS ID#: \_\_\_\_\_  
State: Ky

PO#: \_\_\_\_\_  
Quote# \_\_\_\_\_

Please Print Legibly

Collected by (Signature): [Signature]  
required information

Compliance Monitoring? Yes  No

Samples Chlorinated? Yes  No

\*For composite samples please indicate begin time, end time and temp(°C) at end time below.

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

LAB USE ONLY	*required information*		Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
Workorder #	Date	Collection					
3043176	(month/day)	Time (24 hr)					
3043176-01 A	<u>4-25-23</u>	<u>1430</u>	Plastic 1L	1	Well Duplicate 1	g/c	TDS Fluoride 300.0 Sulfate 300.0 Conductivity (Lab) Chloride 300.0 Alkalinity Total Alkalinity Carbonate Alkalinity Bicarbonate Zinc Tot 6020 Lithium Tot 6020 Sodium Tot 6010B Selenium Tot 6020 Potassium Tot 6010B Nickel Tot 6020 Molybdenum Tot 6020 Magnesium Tot 6010B Iron Tot 6010B Lead Tot 6020 Hardness Titration Copper Tot 6020 Cobalt Tot 6020 Chromium Tot 6020 Boron Tot 6010B
3043176-01 B	<u>4-25-23</u>	<u>1430</u>	Plastic 500mL pH<2 w/HClO4	1	Well Duplicate 1	g/c	Zinc Tot 6020 Lithium Tot 6020 Sodium Tot 6010B Selenium Tot 6020 Potassium Tot 6010B Nickel Tot 6020 Molybdenum Tot 6020 Magnesium Tot 6010B Iron Tot 6010B Lead Tot 6020 Hardness Titration Copper Tot 6020 Cobalt Tot 6020 Chromium Tot 6020 Boron Tot 6010B
3043176-01 C	<u>4-25-23</u>	<u>1430</u>	Plastic 500mL pH<2 w/H2SO4	1	Well Duplicate 1	g/c	TOC COD
3043176-01 D	<u>4-25-23</u>	<u>1430</u>	CG 250mL pH<2 w/HCl	1	Well Duplicate 1	g/c	Mercury Tot 245.7
3043176-01 E	<u>4-25-23</u>	<u>1430</u>	CG 250mL pH<2 w/HCl	1	Well Duplicate 1	g/c	Mercury Tot 245.7

Preservation Check: pH:

Preservation Check: pH:

Preservation Check Performed by: All

Thermometer Serial Number

181390287

181460057

Field data collected by Travis Smith Date (mm/dd/yy) 4-25-23 Time (24 hr) 1300 Temp 6.0  
pH 6.45 Cond (µmho) 3.11 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_  
Temp (°C) 17.65 or (°F) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_  
Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by (Signature): [Signature]

Received by (Signature): [Signature]

Date (mm/dd/yy): 4-26-23

Time (24 hr): 1400

### Chain of Custody

Scheduled for: 04/19/2023



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Stordeman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Stordeman  
PO Box 24  
Henderson, KY 42419

Project: Well Duplicate 2 Wilson 082-00084

Phone: (270) 844-8000  
PWS ID#: \_\_\_\_\_  
State: Ky

PDF: \_\_\_\_\_  
Quote#: \_\_\_\_\_

Please Print Legibly

Collected by (Signature): [Signature]  
\*required information\*

Compliance Monitoring? Yes  No

Samples Chlorinated? Yes  No

\*For composite samples please indicate begin time, end time and temp (°C) at end time below.

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

LAB USE ONLY Workorder # 3043177 Sample ID#	*required information* Date (mm/dd/yy)	Collection Time (24 hr):	Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3043177-01 A	<u>04-25-23</u>	<u>0844</u>	Plastic 1L	1	Well Duplicate 2	g / c	Alkalinity Bicarbonate TDS Alkalinity Carbonate Fluoride 300.0 Chloride 300.0 Conductivity (Lab) Sulfate 300.0 Alkalinity Total Cobalt Tot 6020 Potassium Tot 6010B Nickel Tot 6020 Molybdenum Tot 6020 Magnesium Tot 6010B Lithium Tot 6020 Zinc Tot 6020 Calcium Tot 6010B Copper Tot 6020 Thallium Tot 6020 Beryllium Tot 6020 Antimony Tot 6020 Lead Tot 6020 Barium Tot 6020
3043177-01 B	<u>04-25-23</u>	<u>0844</u>	Plastic 500mL pH<2 w/HNO3	1	Well Duplicate 2	g / c	
				Preservation Check: pH: <u>✓</u>			
3043177-01 C	<u>04-25-23</u>	<u>0844</u>	Plastic 500mL pH<2 w/H2SO4	1	Well Duplicate 2	g / c	TOC COD
				Preservation Check: pH: <u>✓</u>			
3043177-01 D	<u>04-25-23</u>	<u>0844</u>	CG 250ml pH<2 w/HCl	1	Well Duplicate 2	g / c	Mercury Tot 245.7
3043177-01 E	<u>04-25-23</u>	<u>0844</u>	CG 250mL pH<2 w/HCL	1	Well Duplicate 2	g / c	Mercury Tot 245.7

Thermometer Serial Number

181390287

181460057

Preservation Check Performed by: ALL

Field data collected by: Tami's Speed Date (mm/dd/yy): 04-25-23 Time (24 hr): 0825  
pH: 6.71 Cond (µmho): 432 Res Cl (mg/L): \_\_\_\_\_ Tot Cl (mg/L): \_\_\_\_\_ Free Cl (mg/L): \_\_\_\_\_  
Temp (°C): 16.29 or (°F): \_\_\_\_\_ Static Water Level: \_\_\_\_\_ DO (mg/L): \_\_\_\_\_ Turb. (NTU): \_\_\_\_\_  
Flow (MGD): \_\_\_\_\_ or (CFS): \_\_\_\_\_ or (g/min): \_\_\_\_\_

Relinquished by: (Signature)

Received by: (Signature)

Date (mm/dd/yy)

Time (24 hr)

[Signature]

[Signature]

4-26-23

1:00

### Chain of Custody

Scheduled for: **04/20/2023**



Client: **Big Rivers Electric Corporation Wilson Station**

Report To:  
**Big Rivers Electric Corporation Wilson Station**  
**Dean Stockman**  
**PO Box 24**  
**Henderson, KY 42419**

Invoice To:  
**Big Rivers Electric Corporation Wilson Station**  
**Dawn Stockman**  
**PO Box 24**  
**Henderson, KY 42419**

Project: **Field Blank Wilson 092-00004**

Phone: **(270) 844-8000**  
PWS ID#: **KY**  
State: **KY**

PC#: \_\_\_\_\_  
Cruise#: \_\_\_\_\_

Please Print Legibly

Collected by (Signature): *Matt Morton*

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time, end time and temp(°C) at end time below

Samples Chlorinated? Yes  No

Influent Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

Effluent Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

LAB USE ONLY	*required information*						
Workorder #	Date	Collection	Bottle and Preservative	Containers	Sample Description	Composae	Sample Analysis Requested
3043773	(mm/dd/yy)	Time (24 hr)					
Sample ID#							
3043773-01 A	<u>4-25-23</u>	<u>2:00P</u>	Plastic 1L	1	Field Blank	g / c	Chloride 300.0 Fluoride 300.0 pH (Lab) Conductivity (Lab) Alkalinity Total Sulfate 300.0 TDS Alkalinity Carbonate Alkalinity Bicarbonate Lithium Tot 6020 Barium Tot 6020 Boron Tot 6010B Cadmium Tot 6020 Calcium Tot 6010B Antimony Tot 6020 Beryllium Tot 6020 Chromium Tot 6020 Nickel Tot 6020 Iron Tot 6010B Thallium Tot 6020 Sodium Tot 6010B Arsenic Tot 6020 Potassium Tot 6010B Zinc Tot 6020
3043773-01 B	<u>4-25-23</u>	<u>2:00</u>	Plastic 500mL pH<2 w/HClO3	1	Field Blank	g / c	Chloride 300.0 Fluoride 300.0 pH (Lab) Conductivity (Lab) Alkalinity Total Sulfate 300.0 TDS Alkalinity Carbonate Alkalinity Bicarbonate Lithium Tot 6020 Barium Tot 6020 Boron Tot 6010B Cadmium Tot 6020 Calcium Tot 6010B Antimony Tot 6020 Beryllium Tot 6020 Chromium Tot 6020 Nickel Tot 6020 Iron Tot 6010B Thallium Tot 6020 Sodium Tot 6010B Arsenic Tot 6020 Potassium Tot 6010B Zinc Tot 6020
3043773-01 C	<u>4-25-23</u>	<u>2:02</u>	Plastic 500mL pH<2 w/H2SO4	1	Field Blank	g / c	TOC COD
3043773-01 D	<u>4-25-23</u>	<u>2:02</u>	CG 250mL pH<2 w/HCL	1	Field Blank	g / c	Mercury Tot 245.7
3043773-01 E	<u>4-25-23</u>	<u>2:02</u>	CG 250mL pH<2 w/HCL	1	Field Blank	g / c	Mercury Tot 245.7

Preservation Check: pH: ✓

Preservation Check: pH: ✓

Thermometer Serial Number

✓ 181390287

181460057

Preservation Check Performed by: AM

Field data collected by: Matt Morton Date (mm/dd/yy): 4-25-23 Time (24 hr): 2:02P Temp: 6.600

pH: \_\_\_\_\_ Cond (umho) \_\_\_\_\_ Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (°C) \_\_\_\_\_ or (°F) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb (NTU) \_\_\_\_\_

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature)	Received by: (Signature)	Date (mm/dd/yy)	Time (24 hr)
<u>Matt Morton</u>	<u>Tina</u>	<u>4-25-23</u>	<u>14:20</u>
<u>Tina</u>	<u>Amey</u>	<u>4-26-23</u>	<u>14:00</u>



# Chain of Custody

Scheduled for: 04/19/2023



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Stockman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Stockman  
PO Box 24  
Henderson, KY 42419

Project: MW-10 Wilson 092-00004

Phone: (270) 844-6000  
PWS ID#:  
State: Ky

PO#:  
Quote#

Please Print Legibly

Collected by (Signature): [Signature]  
required information

Compliance Monitoring? Yes  No

Samples Chlorinated? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below.

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	*required information* Date (mm/dd/yy) Collection Time (24 hr)		Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3043158-01 F	<u>4-26-23</u>	<u>7:05</u>	Plastic 1L pH<2 w/HNO3 Rad 226 (Sub)	1	MW10	g/c	Radium 226 (sub)
			Preservation Check: pH:	<input checked="" type="checkbox"/>			
3043158-01 G	<u>4-26-23</u>	<u>7:05</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW10	g/c	Radium 228 (sub)
			Preservation Check: pH:	<input checked="" type="checkbox"/>			
3043158-01 H	<u>4-26-23</u>	<u>7:05</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW10	g/c	Radium 228 (sub)
			Preservation Check: pH:	<input checked="" type="checkbox"/>			
3043158-01 I	<u>4-26-23</u>	<u>7:05</u>	Plastic 1L pH<2 w/HNO3 (Sub)	1	MW10	g/c	Radium Total (sub)
			Preservation Check: pH:	<input checked="" type="checkbox"/>			
3043158-01 J	<u>4-26-23</u>	<u>7:05</u>	AG 250mL pH<2 w/H2SO4	1	MW10	g/c	TOC
			Preservation Check: pH:	<input checked="" type="checkbox"/>			
3043158-02 A	<u>4-26-23</u>	<u>7:05</u>	CG 250mL pH<2 w/HCl Field Blank	1	Mercury Field Blank	g/c	Mercury Tot 245.7 Field Blank

Preservation Check Performed by: [Signature]

Field data collected by: Tom's Speed Date (mm/dd/yy) 4-26-23 Time (24 hr) 7:05  
pH 5.98 Cond (umho) 3.60 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_  
Temp (oC) 67.98 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_  
Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature) [Signature] Received by: (Signature) [Signature]  
Date (mm/dd/yy) 4-26-23 Time (24 hr) 1900

# Chain of Custody

Scheduled for: **04/19/2023**



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Storkman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station

Project: MW-102 Wilson 092-00004

Dawn Storkman  
PO Box 24  
Henderson, KY 42419

Phone: (270) 944-6000  
PWS ID#: KY  
State: KY

PO#: \_\_\_\_\_  
Quote# \_\_\_\_\_

Please Print Legibly

Collected by (Signature): [Signature]  
\*required information\*

Compliance Monitoring? Yes  No

Samples Chlorinated? Yes  No

\*For composite samples please indicate begin time, end time and temp(°C) at end time below:

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	*required information* Date (mm/dd/yy): Time (24 hr):	Bole and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3043159-01 F	<u>4-25-23 9:24</u>	Plastic 1L pH<2 w/HNO3 Rad 226 (Sub)	1	MW102	g/c	Radium 226 (sub)
		Preservation Check: pH: <u>/</u>				
3043159-01 G	<u>4-25-23 9:24</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW102	g/c	Radium 228 (sub)
		Preservation Check: pH: <u>/</u>				
3043159-01 H	<u>4-25-23 9:24</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW102	g/c	Radium 228 (sub)
		Preservation Check: pH: <u>/</u>				
3043159-01 I	<u>4-25-23 9:24</u>	Plastic 1L pH<2 w/HNO3 (Sub)	1	MW102	g/c	Radium Total (sub)
		Preservation Check: pH: <u>/</u>				
3043159-01 J	<u>4-25-23 9:24</u>	AG 250mL pH<2 w/H2SO4	1	MW102	g/c	TOC
		Preservation Check: pH: <u>/</u>				
3043159-02 A	<u>4-25-23 9:24</u>	CG 250mL pH<2 w/HCl Field Blank	1	Mercury Field Blank	g/c	Mercury Tot 245.7 Field Blank

Preservation Check Performed by: AOL

Field data collected by: Matt Morton Date (mm/dd/yy) 4-25-23 Time (24 hr) 9:24

pH 6.84 Cond (umho/cm) 1.24 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (°C) 15.92 or (°F) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>[Signature]</u>	Date (mm/dd/yy) <u>4-25-23</u>	Time (24 hr) <u>14:30</u>
		<u>4-26-23</u>	<u>1400</u>



May 19, 2023

Rob Whittington  
Pace Analytical Madisonville  
825 Industrial Rd  
Madisonville, KY 42431

RE: Project: 3043160  
Pace Project No.: 30582966

Dear Rob Whittington:

Enclosed are the analytical results for sample(s) received by the laboratory on April 28, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Greensburg

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

Sincerely,

Carla Cmar  
carla.cmar@pacelabs.com  
(724)850-5600  
Project Manager

Enclosures

cc: Doug Wolfe, Pace Analytical Madisonville



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: 3043160  
Pace Project No.: 30582966

---

### Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601  
ANAB DOD-ELAP Rad Accreditation #: L2417  
Alabama Certification #: 41590  
Arizona Certification #: AZ0734  
Arkansas Certification  
California Certification #: 04222CA  
Colorado Certification #: PA01547  
Connecticut Certification #: PH-0694  
Delaware Certification  
EPA Region 4 DW Rad  
Florida/TNI Certification #: E87683  
Georgia Certification #: C040  
Florida: Cert E871149 SEKS WET  
Guam Certification  
Hawaii Certification  
Idaho Certification  
Illinois Certification  
Indiana Certification  
Iowa Certification #: 391  
Kansas/TNI Certification #: E-10358  
Kentucky Certification #: KY90133  
KY WW Permit #: KY0098221  
KY WW Permit #: KY0000221  
Louisiana DHH/TNI Certification #: LA180012  
Louisiana DEQ/TNI Certification #: 4086  
Maine Certification #: 2017020  
Maryland Certification #: 308  
Massachusetts Certification #: M-PA1457  
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235  
Montana Certification #: Cert0082  
Nebraska Certification #: NE-OS-29-14  
Nevada Certification #: PA014572018-1  
New Hampshire/TNI Certification #: 297617  
New Jersey/TNI Certification #: PA051  
New Mexico Certification #: PA01457  
New York/TNI Certification #: 10888  
North Carolina Certification #: 42706  
North Dakota Certification #: R-190  
Ohio EPA Rad Approval: #41249  
Oregon/TNI Certification #: PA200002-010  
Pennsylvania/TNI Certification #: 65-00282  
Puerto Rico Certification #: PA01457  
Rhode Island Certification #: 65-00282  
South Dakota Certification  
Tennessee Certification #: 02867  
Texas/TNI Certification #: T104704188-17-3  
Utah/TNI Certification #: PA014572017-9  
USDA Soil Permit #: P330-17-00091  
Vermont Dept. of Health: ID# VT-0282  
Virgin Island/PADEP Certification  
Virginia/VELAP Certification #: 460198  
Washington Certification #: C868  
West Virginia DEP Certification #: 143  
West Virginia DHHR Certification #: 9964C  
Wisconsin Approve List for Rad  
Wyoming Certification #: 8TMS-L

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## REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: 3043160  
Pace Project No.: 30582966

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30582966001	3043160-01	Water	04/24/23 13:48	04/28/23 09:40

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 3043160  
Pace Project No.: 30582966

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30582966001	3043160-01	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 3043160  
Pace Project No.: 30582966

Sample: 3043160-01 Lab ID: 30582966001 Collected: 04/24/23 13:48 Received: 04/28/23 09:40 Matrix: Water  
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	<b>0.0654 ± 0.587 (1.14)</b> C:NA T:91%	pCi/L	05/17/23 14:20	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>1.97 ± 0.618 (0.844)</b> C:79% T:86%	pCi/L	05/11/23 13:01	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>2.04 ± 1.21 (1.98)</b>	pCi/L	05/19/23 14:57	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: 3043160  
 Pace Project No.: 30582966

QC Batch: 585433	Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1	Analysis Description: 903.1 Radium-226
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30582966001

METHOD BLANK: 2843307 Matrix: Water

Associated Lab Samples: 30582966001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.266 ± 0.302 (0.477) C:NA T:91%	pCi/L	05/17/23 14:07	

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

**REPORT OF LABORATORY ANALYSIS**

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: 3043160  
Pace Project No.: 30582966

---

QC Batch: 585436	Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0	Analysis Description: 904.0 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30582966001

---

METHOD BLANK: 2843322 Matrix: Water

Associated Lab Samples: 30582966001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.423 ± 0.344 (0.683) C:75% T:85%	pCi/L	05/11/23 12:59	

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

### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: 3043160  
Pace Project No.: 30582966

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### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

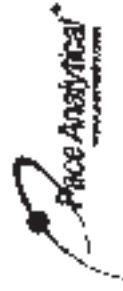
Project: 3043160  
Pace Project No.: 30582966

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30582966001	3043160-01	EPA 903.1	585433		
30582966001	3043160-01	EPA 904.0	585436		
30582966001	3043160-01	Total Radium Calculation	589434		

### REPORT OF LABORATORY ANALYSIS

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Chain of Custody



Workorder: 3043160

Workorder Name: MW-114 Wilson D92-UOUD

Owner Received Date: 4/24/2023

Results Requested By: Standard

Report To:

Subcontract To:

Requested Analysis

Pace Analytical Services, LLC  
 825 Industrial Road  
 Madisonville, KY 42409  
 270-821-7375  
 rob.whittington@pacelabs.com

Pace Analytical Services LLC Greensburg PA  
 1638 Rosey Town Rd Suite 2,3,4  
 Greensburg, PA 15601  
 (724) 850-5615

WO#: 30582966  
 30582966

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers		Date/Time	Received By	Date/Time	Comments
1											
2	3043160-01		04/20/23 01:48	IR44-McCoy	Water						
3											
4											
5											
6											
7											
8											
9											
10											
Transfers											
1		Released By	Jessica Franklin	Date/Time	4/27/2023	Received By	<i>[Signature]</i>	Date/Time	4/27/2023	Comments	
2											
3											

Cooler Temperature on Receipt \_\_\_\_\_ °C Custody Seal Y or (N) \_\_\_\_\_ Received on Ice Y or (N) \_\_\_\_\_ Sample Intact (Y) or (N) \_\_\_\_\_

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

**SUBCONTRACT ORDER**

**Pace Analytical Services, LLC Kentucky  
3043160**

**SENDING LABORATORY:**

Pace Analytical Services, LLC Kentucky  
PO BOX 907  
Madisonville, KY 42431  
Phone: (270) 821-7375  
Fax: 844-270-7904  
Project Manager: Rob Whittington

**RECEIVING LABORATORY:**

Pace Analytical Services LLC Greensburg PA  
1638 Rosey Town Rd Suite 2,3,4  
Greensburg, PA 15601  
Phone: (724) 850-5615  
Fax:

Analysis	Expires	Laboratory ID	Comments
Sample ID: 3043160-01	Water	Sampled:04/24/2023 01:48	Specific Method
Radium Total (sub)	10/21/2023 01:48	EPA 904.C Radium Sum C	
Radium 228 (sub)	10/21/2023 01:48	EPA 904.C Radium Sum C	
Radium 226 (sub)	10/21/2023 01:48	EPA 903.E	

**WO# : 30582966**

PH: ADC

Due Date: 05/19/23

CLIENT: PACE\_44\_MKY

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_



DC# Title: ENV-FRM-GBUR-0088 v04 Sample Condition Upon Receipt  
Pittsburgh

WO#: 30582966

Effective Date: 02/03/2023

PM: CDC

Due Date: 05/19/23

CLIENT: PACE\_44\_NWKY

Client Name: Pace Medicineville

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace  Other

Tracking Number: 750

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

Thermometer Used: \_\_\_\_\_ Type of Ice: Wet Blue cube

Cooler Temperature: Observed Temp \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C  
Temp should be above freezing to 6°C

Examined By	<u>JH</u>
Labeled By	<u>JH</u>
Tamped By	<u>-</u>

Comments:

	Yes	No	NA	pH paper Lot# <u>1003111</u>	D.P.O. Residual Chlorine Lot # <u>-</u>
Chain of Custody Present	<input checked="" type="checkbox"/>			1.	
Chain of Custody Filled Out: -Were client corrections present on COC		<input checked="" type="checkbox"/>		2.	
Chain of Custody Relinquished	<input checked="" type="checkbox"/>			3.	
Sampler Name & Signature on COC:		<input checked="" type="checkbox"/>		4.	
Sample Labels match COC: -Includes date/time/ID Matrix:		<input checked="" type="checkbox"/>		5. <u>No date/time on bottles</u>	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>			6.	
Short Hold Time Analysis (<72hr remaining):		<input checked="" type="checkbox"/>		7.	
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		8.	
Sufficient Volume:	<input checked="" type="checkbox"/>			9.	
Correct Containers Used: -Pace Containers Used	<input checked="" type="checkbox"/>			10.	
Containers Intact:	<input checked="" type="checkbox"/>			11.	
Orthophosphate field filtered:			<input checked="" type="checkbox"/>	12.	
Hax Or Aqueous samples field filtered:			<input checked="" type="checkbox"/>	13.	
Organic Samples checked for dechlorination			<input checked="" type="checkbox"/>	14.	
Filtered volume received for dissolved tests:	<input checked="" type="checkbox"/>			15.	
All containers checked for preservation: exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix	<input checked="" type="checkbox"/>			16. <u>Added 2.5ml of HNO3 to all bottles</u>	
All containers meet method preservation requirements:		<input checked="" type="checkbox"/>		Initial when completed: <u>JH</u>	Date/Time of Preservation: <u>5/11/23 03:20</u>
				Lot# of added Preservative: <u>HNO3 217007</u>	
8260C/D: Headspace in VOA Vials (> 6mm)			<input checked="" type="checkbox"/>	17.	
624.1: Headspace in VOA Vials (0mm)			<input checked="" type="checkbox"/>	18.	
Trip Blank Present:			<input checked="" type="checkbox"/>	Trip blank custody seal present? YES or NO	
Rad Samples Screened <0.5 mrem/hr.	<input checked="" type="checkbox"/>			Initial when completed: <u>JH</u>	Date: <u>5/11/23</u> Survey Meter SN: <u>1683</u>

Comments:

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

Client

Site SouSib0

Page 1 of 1

Profile Number 11851

Notes

Sample Line Item	Amber Glass					Plastic					Vials					Other											
	AG1H	AG2S	AG3U	AG5U	AG5T	BP1N	BP1U	BP29	BP2U	BP3C	BP3N	BP39	BP3U	DP99	VO9H	VG9T	VG9U	VOAK	WGFU	WQKU	ZPLC	GCUB	GC3E	12GN	GN	BG1U	
1																											

**WO#: 30582966**

Pr: PDC Due Date: 05/19/23

CLIENT: PACE\_44\_MVKT

Container Codes

Glass	
CG95	40mL amber VOA vial H2SO4
VG9U	40mL clear VOA vial
VG9T	40mL clear VOA vial Na Thiosulfate
VG9H	40mL clear VOA vial HCl
JG1U	4oz amber wide jar
WGFU	4oz wide jar unpreserved
BG2U	500mL clear glass unpreserved
AG2U	500mL amber glass unpreserved
WQKU	5oz wide jar unpreserved
GN	General

Plastic/Misc.	
GCUB	1 gallon cubitainer
12GN	1/2 gallon cubitainer
SP6T	120mL coliform Na Thiosulfate
BP1N	1L plastic HNO3
BP1U	1L plastic unpreserved
BP3S	250mL plastic H2SO4
BP3N	250mL plastic HNO3
BP3U	250mL plastic unpreserved
BP3C	250mL plastic NaOH
BP2S	500mL plastic H2SO4
BP2U	500mL plastic unpreserved

EZJ	5g Encoce
VOAK	Kit Volatile Solid
I	Wipes/Swab
ZPLC	Silploc Bag

WT	Water
SL	Solid
CL	Non-Aq Liquid
WFP	Wipe



### Chain of Custody

Scheduled for: **04/19/2023**



Client: **Big Rivers Electric Corporation Wilson Station**

Report To:  
**Big Rivers Electric Corporation Wilson Station**  
Dawn Sarrickman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
**Big Rivers Electric Corporation Wilson Station**

Project: **MW-105R Wilson 892-00004**

Dawn Sarrickman  
PO Box 24  
Henderson, KY 42419

Phone: **(270) 844-6000**

PO#: \_\_\_\_\_

PWS ID#: \_\_\_\_\_  
State: **KY**

Quote#: \_\_\_\_\_

Please Print Legibly

Collected by (Signature): *Matt Marton*

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below:

Samples Chlorinated? Yes  No

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # 3043161 Sample ID#	"required information" Date (mm/dd/yyyy): Time (24 hr):	Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3043161-01 F	<u>4-25-23 7:48</u>	Plastic 1L pH=2 w/HNO3 Rad 228 (Sub)	1	MW105	g/c	Radium 228 (sub)
		Preservation Check: pH: <u>✓</u>				
3043161-01 G	<u>4-25-23 7:48</u>	Plastic 1L pH=2 w/HNO3 Rad 228 (Sub)	1	MW105	g/c	Radium 228 (sub)
		Preservation Check: pH: <u>✓</u>				
3043161-01 H	<u>4-25-23 7:48</u>	Plastic 1L pH=2 w/HNO3 Rad 228 (Sub)	1	MW105	g/c	Radium 228 (sub)
		Preservation Check: pH: <u>✓</u>				
3043161-01 I	<u>4-25-23 7:48</u>	Plastic 1L pH=2 w/HNO3 (Sub)	1	MW105	g/c	Radium Total (sub)
		Preservation Check: pH: <u>✓</u>				
3043161-01 J	<u>4-25-23 7:48</u>	AG 250mL pH=2 w/H2SO4	1	MW105	g/c	TOC
		Preservation Check: pH: <u>✓</u>				
3043161-02 A	<u>4-25-23 7:48</u>	CG 250mL pH=2 w/HCl Field Blank	1	Mercury Field Blank	g/c	Mercury Tot 295.11 Peak Blank

field blank 4-26-23  
broken Ael

Preservation Check Performed by: Ael

Field data collected by: Matt Marton Date (mm/dd/yyyy): 4-25-23 Time (24 hr): 7:48

pH: 6.84 Cond (µS/cm): 163 Res Cl (mg/L): \_\_\_\_\_ Tot Cl (mg/L): \_\_\_\_\_ Free Cl (mg/L): \_\_\_\_\_

Temp (oC): 14.60 or (oF): \_\_\_\_\_ Static Water Level: \_\_\_\_\_ DO (mg/L): \_\_\_\_\_ Turb. (NTU): \_\_\_\_\_

Flow (MGD): \_\_\_\_\_ or (CFS): \_\_\_\_\_ or (g/min): \_\_\_\_\_

Relinquished by (Signature): <u><i>Matt Marton</i></u>	Received by (Signature): <u><i>Tina Sand</i></u>	Date (mm/dd/yyyy): <u>4-25-23</u>	Time (24 hr): <u>14:10</u>
<u><i>Tina Sand</i></u>	<u><i>Matt Marton</i></u>	<u>4-26-23</u>	<u>1400</u>

May 19, 2023

Rob Whittington  
Pace Analytical Madisonville  
825 Industrial Rd  
Madisonville, KY 42431

RE: Project: 3043162  
Pace Project No.: 30582979

Dear Rob Whittington:

Enclosed are the analytical results for sample(s) received by the laboratory on April 28, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Greensburg

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

Sincerely,



Carla Cmar  
carla.cmar@pacelabs.com  
(724)850-5600  
Project Manager

Enclosures

cc: Doug Wolfe, Pace Analytical Madisonville



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: 3043162  
Pace Project No.: 30582979

---

### Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601  
ANAB DOD-ELAP Rad Accreditation #: L2417  
Alabama Certification #: 41590  
Arizona Certification #: AZ0734  
Arkansas Certification  
California Certification #: 04222CA  
Colorado Certification #: PA01547  
Connecticut Certification #: PH-0694  
Delaware Certification  
EPA Region 4 DW Rad  
Florida/TNI Certification #: E87683  
Georgia Certification #: C040  
Florida: Cert E871149 SEKS WET  
Guam Certification  
Hawaii Certification  
Idaho Certification  
Illinois Certification  
Indiana Certification  
Iowa Certification #: 391  
Kansas/TNI Certification #: E-10358  
Kentucky Certification #: KY90133  
KY WW Permit #: KY0098221  
KY WW Permit #: KY0000221  
Louisiana DHH/TNI Certification #: LA180012  
Louisiana DEQ/TNI Certification #: 4086  
Maine Certification #: 2017020  
Maryland Certification #: 308  
Massachusetts Certification #: M-PA1457  
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235  
Montana Certification #: Cert0082  
Nebraska Certification #: NE-OS-29-14  
Nevada Certification #: PA014572018-1  
New Hampshire/TNI Certification #: 297617  
New Jersey/TNI Certification #: PA051  
New Mexico Certification #: PA01457  
New York/TNI Certification #: 10888  
North Carolina Certification #: 42706  
North Dakota Certification #: R-190  
Ohio EPA Rad Approval: #41249  
Oregon/TNI Certification #: PA200002-010  
Pennsylvania/TNI Certification #: 65-00282  
Puerto Rico Certification #: PA01457  
Rhode Island Certification #: 65-00282  
South Dakota Certification  
Tennessee Certification #: 02867  
Texas/TNI Certification #: T104704188-17-3  
Utah/TNI Certification #: PA014572017-9  
USDA Soil Permit #: P330-17-00091  
Vermont Dept. of Health: ID# VT-0282  
Virgin Island/PADEP Certification  
Virginia/VELAP Certification #: 460198  
Washington Certification #: C868  
West Virginia DEP Certification #: 143  
West Virginia DHHR Certification #: 9964C  
Wisconsin Approve List for Rad  
Wyoming Certification #: 8TMS-L

---

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: 3043162  
Pace Project No.: 30582979

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30582979001	3043162-01	Water	04/24/23 13:35	04/28/23 09:40

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 3043162  
Pace Project No.: 30582979

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30582979001	3043162-01	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

### REPORT OF LABORATORY ANALYSIS

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**ANALYTICAL RESULTS - RADIOCHEMISTRY**

Project: 3043162  
 Pace Project No.: 30582979

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: 3043162-01</b> <b>Lab ID: 30582979001</b> Collected: 04/24/23 13:35      Received: 04/28/23 09:40      Matrix: Water PWS:      Site ID:      Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	<b>0.000 ± 0.365 (0.772)</b> C:NA T:93%	pCi/L	05/17/23 14:20	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>0.465 ± 0.355 (0.695)</b> C:79% T:84%	pCi/L	05/11/23 13:01	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>0.465 ± 0.720 (1.47)</b>	pCi/L	05/19/23 14:57	7440-14-4	

**REPORT OF LABORATORY ANALYSIS**

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: 3043162  
Pace Project No.: 30582979

---

QC Batch: 585433	Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1	Analysis Description: 903.1 Radium-226
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30582979001

---

METHOD BLANK: 2843307 Matrix: Water

Associated Lab Samples: 30582979001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.266 ± 0.302 (0.477) C:NA T:91%	pCi/L	05/17/23 14:07	

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

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: 3043162  
 Pace Project No.: 30582979

QC Batch: 585436	Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0	Analysis Description: 904.0 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30582979001

METHOD BLANK: 2843322 Matrix: Water

Associated Lab Samples: 30582979001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.423 ± 0.344 (0.683) C:75% T:85%	pCi/L	05/11/23 12:59	

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

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## QUALIFIERS

Project: 3043162  
Pace Project No.: 30582979

---

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 3043162  
Pace Project No.: 30582979

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30582979001	3043162-01	EPA 903.1	585433		
30582979001	3043162-01	EPA 904.0	585436		
30582979001	3043162-01	Total Radium Calculation	589434		

### REPORT OF LABORATORY ANALYSIS

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Chain of Custody



workorder: 3043162

Workorder Name: MW-100 Wilson D92-0000 Owner Received Date: 4/24/2023

Results Requested By: Standard

Report To:

Subcontract To:

Requested Analysis:

Pace Analytical Services, LLC  
 825 Industrial Road  
 Madisonville, KY 42409  
 270-821-7375  
 rob.whittington@pacelabs.com

Pace Analytical Services LLC Greensburg PA  
 1638 Rosey Town Rd Suite 2,3,4  
 Greensburg, PA 15601  
 (724) 850-5615

EPA 903.1

EPA 904.0 Radium Sum Calc

WO#: 30582979

30582979

Preserve Containers

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserve Containers	EPA 903.1	EPA 904.0 Radium Sum Calc	LAB USE ONLY
1							X	X	
2	3043162-01		04/24/23 13:35	IR44-McCoy	Water		X	X	001
3									
4									
5									
6									
7									
8									
9									
10									

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	Jessica Franklin	4/27/2023	<i>[Signature]</i>	4/27/2023	
2					
3					

Cooler Temperature on Receipt: \_\_\_\_\_ °C Custody Seal Y or N  
 Received on Ice Y or N  
 \*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC  
 This chain of custody is considered complete as is since this information is available in the owner laboratory.

Friday, June 17, 2016 11:01:34 AM

FMT-ALL-C-002rev.00 24 March 2009

**SUBCONTRACT ORDER**

Pace Analytical Services, LLC Kentucky

3043162

**SENDING LABORATORY:**

Pace Analytical Services, LLC Kentucky  
PO BOX 907  
Madisonville, KY 42431  
Phone: (270) 821-7375  
Fax: 844-270-7904  
Project Manager: Rob Whittington

**RECEIVING LABORATORY:**

Pace Analytical Services LLC Greensburg PA  
1638 Rosey Town Rd Suite 2,3,4  
Greensburg, PA 15601  
Phone: (724) 850-5613  
Fax:

Analysis	Expires	Laboratory ID	Comments
Sample ID: 3043162-01	Water	Sampled: 04/24/2023 13:35	Specific Method
Radium Total (sub)	10/21/2023 13:35	EPA 904.0 Radium Sum C	
Radium 228 (sub)	10/21/2023 13:35	EPA 904.0 Radium Sum C	
Radium 226 (sub)	10/21/2023 13:35	EPA 903.1	

**WO# : 30582979**

PH: RDC

Due Date: 05/19/23

CLIENT: PRCE\_44\_KYKY

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_



DC# Title: ENV-FRM-GBUR-0088 v04\_Sample Condition Upon Receipt-  
Pittsburgh

WO#: 30582979

Effective Date: 02/03/2023

PR-ADC

Due Date: 05/19/23

CLIENT: PAGE\_44\_MWY

Client Name: Page Marlintonville

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Page  Other

Tracking Number: 7071

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

Thermometer Used: \_\_\_\_\_ Type of Ice: Wet Blue None

Cooler Temperature: Observed Temp \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C  
Temp should be above freezing to 6°C

Examined By	<u>TH</u>
Labeled By	<u>TH</u>
Temped By	<u>TH</u>

Comments:

Comments:	pH paper Lot#			D.P.D. Residual Chlorine Lot#	
	Yes	No	NA		
Chain of Custody Present	<input checked="" type="checkbox"/>			<u>100471</u>	
Chain of Custody Filled Out: -Were client corrections present on COC	<input checked="" type="checkbox"/>				
Chain of Custody Relinquished	<input checked="" type="checkbox"/>				
Sampler Name & Signature on COC:					
Sample Labels match COC: -Includes date/time/ID Matrix:					<u>5. No date/time on bottles</u>
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>				
Short Hold Time Analysis (<72hr remaining):					
Rush Turn Around Time Requested:					
Sufficient Volume:	<input checked="" type="checkbox"/>				
Correct Containers Used: -Page Containers Used	<input checked="" type="checkbox"/>				
Containers Intact:	<input checked="" type="checkbox"/>				
Orthophosphate field filtered:					
Hex Cr Aqueous samples field filtered:					
Organic Samples checked for dechlorination					
Filtered volume received for dissolved tests:					
All containers checked for preservation: exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix	<input checked="" type="checkbox"/>				<u>16. Added 2.5 mL of HNO<sub>3</sub> to all bottles</u>
All containers meet method preservation requirements:		<input checked="" type="checkbox"/>		Initial when completed <u>TH</u>	Date/Time of Preservation <u>5/11/23 14:00</u>
8260C/D: Headspace in VOA Vials (> 6mm)			<input checked="" type="checkbox"/>		
624.1: Headspace in VOA Vials (0mm)			<input checked="" type="checkbox"/>		
Trip Blank Present:			<input checked="" type="checkbox"/>		Trip blank custody seal present? YES or NO
Rad Samples Screened <0.5 nCi/hr.	<input checked="" type="checkbox"/>			Initial when completed <u>TH</u>	Date: <u>5/11/23</u> Survey Meter SN: <u>1553</u>
Comments:					

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

Client

Site

304062

Profile Number

11851

Notes

Page 1 of 1

Sample Line Item	Amber Glass					Plastic										Vials					Other						
	AGTH	AGSS	AGSU	AGSU	AGST	BP1N	BP1U	BP2S	BP2U	BP3C	BP3N	BP3S	BP3U	DG9S	VG9H	VG9T	VG9U	VOAK	WG9U	WOXU	ZPLC	GCUB	GN	12GN	GN	BP1U	
1																											

WO#: 30582979

PN: 600

Due Date: 05/19/23

CLIENT: PAGE\_44\_WKY

Container Codes

Glass	
GN	1 Gallon Jug with HNO3
AG3U	100mL amber glass unpreserved
AG5T	100mL amber glass Na Thiosulfate
GN	1 Gallon Jug
AG1S	1L amber glass H2SO4
AG1H	1L amber glass HCl
AG1T	1L amber glass NA Thiosulfate
AG1U	1L clear glass unpreserved
AG3S	250mL amber glass H2SO4
AG3U	250mL amber glass unpreserved

Plastic/Misc.	
GCUB	1 gallon cupbottle
12GN	1/2 gallon cubstainer
SP5T	120mL coliform Na Thiosulfate
BP1N	1L plastic HNO3
BP1U	1L plastic unpreserved
BP3S	250mL plastic H2SO4
BP3H	250mL plastic HNO3
BP3U	250mL plastic unpreserved
BP3C	250mL plastic NaOH
BP2S	500mL plastic H2SO4
BP2U	500mL plastic unpreserved

EZ1	5g Encore
VOAK	Kit Vialtte Soln
I	Wiper/Swab
ZPLC	Ziploc Bag
WT	Walter
SL	Soak
OL	NonAq Liquid
WIP	Wipe

# Chain of Custody

Scheduled for: 04/19/2023



Client: **Big Rivers Electric Corporation Wilson Station**

Report To:  
**Big Rivers Electric Corporation Wilson Station**  
**Dawn Storchman**  
**PO Box 24**  
**Henderson, KY 42419**

Invoice To:  
**Big Rivers Electric Corporation Wilson Station**

Project: **MW-110 Wilson 892-00084**

**Dawn Storchman**  
**PO Box 24**  
**Henderson, KY 42419**

Phone: **(270) 844-6000**

PWS ID#

State: Ky

PO#: \_\_\_\_\_

Quote# \_\_\_\_\_

Please Print Legibly

Collected by (Signature): *Tom S. Sauer*

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below.

Samples Chlorinated? Yes  No

Influent Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	*required information* Date (mm/dd/yy): Collection Time (24 hr):	Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3043163-01 F	<u>04-25-23</u> <u>0825</u>	Plastic 1L pH<2 w/HNO3 Rad 226 (Sub)	1	MW110	g/c	Radium 226 (sub)
		Preservation Check: pH: <u>✓</u>				
3043163-01 G	<u>04-25-23</u> <u>0825</u>	Plastic 1L pH<2 w/HNO3 Rad 226 (Sub)	1	MW110	g/c	Radium 226 (sub)
		Preservation Check: pH: <u>✓</u>				
3043163-01 H	<u>04-25-23</u> <u>0825</u>	Plastic 1L pH<2 w/HNO3 Rad 226 (Sub)	1	MW110	g/c	Radium 226 (sub)
		Preservation Check: pH: <u>✓</u>				
3043163-01 I	<u>04-25-23</u> <u>0825</u>	Plastic 1L pH<2 w/HNO3 (Sub)	1	MW110	g/c	Radium Total (sub)
		Preservation Check: pH: <u>✓</u>				
3043163-01 J	<u>04-25-23</u> <u>0825</u>	AQ 250mL pH<2 w/H2SO4	1	MW110	g/c	TOC
		Preservation Check: pH: <u>✓</u>				
3043163-02 A	<u>04-25-23</u> <u>0825</u>	CG 250mL pH<2 w/HCl Field Blank	1	Mercury Field Blank	g/c	Mercury Tot 245 7 Field Blank

Preservation Check Performed by: *ASL*

Field data collected by: *Tom S. Sauer* Date (mm/dd/yy) 04-25-23 Time (24 hr) 0825  
pH 6.71 Cond (uS/cm) 472 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_  
Temp to C 16.29 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb (NTU) \_\_\_\_\_  
Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by (Signature): *Tom S. Sauer*

Received by (Signature): *ammy xari*

Date (mm/dd/yy) 4-26-23 Time (24 hr) 1400





May 19, 2023

Rob Whittington  
Pace Analytical Madisonville  
825 Industrial Rd  
Madisonville, KY 42431

RE: Project: 3043164  
Pace Project No.: 30582993

Dear Rob Whittington:

Enclosed are the analytical results for sample(s) received by the laboratory on April 28, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Greensburg

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

Sincerely,

Carla Cmar  
carla.cmar@pacelabs.com  
(724)850-5600  
Project Manager

Enclosures

cc: Doug Wolfe, Pace Analytical Madisonville



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: 3043164  
Pace Project No.: 30582993

---

### Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Florida: Cert E871149 SEKS WET

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

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## REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: 3043164  
Pace Project No.: 30582993

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30582993001	3043164-01	Water	04/24/23 11:56	04/28/23 09:40

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 3043164  
Pace Project No.: 30582993

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30582993001	3043164-01	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

### REPORT OF LABORATORY ANALYSIS

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**ANALYTICAL RESULTS - RADIOCHEMISTRY**

Project: 3043164  
 Pace Project No.: 30582993

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: 3043164-01</b> <b>Lab ID: 30582993001</b> Collected: 04/24/23 11:56      Received: 04/28/23 09:40      Matrix: Water PWS:      Site ID:      Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	<b>0.119 ± 0.369 (0.715)</b> C:NA T:91%	pCi/L	05/17/23 14:20	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>0.794 ± 0.347 (0.549)</b> C:83% T:89%	pCi/L	05/11/23 13:01	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>0.913 ± 0.716 (1.26)</b>	pCi/L	05/19/23 14:57	7440-14-4	

**REPORT OF LABORATORY ANALYSIS**

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: 3043164  
Pace Project No.: 30582993

---

QC Batch: 585433	Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1	Analysis Description: 903.1 Radium-226
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30582993001

---

METHOD BLANK: 2843307 Matrix: Water

Associated Lab Samples: 30582993001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.266 ± 0.302 (0.477) C:NA T:91%	pCi/L	05/17/23 14:07	

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

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: 3043164  
 Pace Project No.: 30582993

---

QC Batch: 585436	Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0	Analysis Description: 904.0 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30582993001

---

METHOD BLANK: 2843322 Matrix: Water

Associated Lab Samples: 30582993001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.423 ± 0.344 (0.683) C:75% T:85%	pCi/L	05/11/23 12:59	

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

### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: 3043164  
Pace Project No.: 30582993

---

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 3043164  
Pace Project No.: 30582993

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30582993001	3043164-01	EPA 903.1	585433		
30582993001	3043164-01	EPA 904.0	585436		
30582993001	3043164-01	Total Radium Calculation	589434		

### REPORT OF LABORATORY ANALYSIS

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Chain of Custody



Workorder: 3043164

Workorder Name: MW-111 Wilson 092 0000

Owner Received Date: 4/24/2023

Results Requested By: Standard

Report To:

Subcontract To:

Requested Analysis

Pace Analytical Services, LLC  
 825 Industrial Road  
 Madisonville, KY 42409  
 270-821-7575  
 rob.whittington@pacelabs.com

Pace Analytical Services LLC Greensburg P4  
 1638 Rosey Town Rd Suite 2,3,4  
 Greensburg, PA 15601  
 (724) 850-5615

WO#: 30582993  
 30582993

Item	Sample ID	Sample Type	Sample Collect Date/Time	Lab ID	Matrix	Preserved Containers	
1							
2	3043164-01		04/24/23 11:56	IR44-McCoy	Water		
3							
4							
5							
6							
7							
8							
9							
10							

EPA 903.1 X  
 EPA 904.1 Radium Sum Calc X

LAB USE ONLY

CC1

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	Jessica Franklin	4/27/2023		4/28/2023	
2					
3					

Cooler Temperature on Receipt \_\_\_\_\_ °C Custody Seal Y or N \_\_\_\_\_ Received on Ice Y or N \_\_\_\_\_ Sample Intact (Y) or N \_\_\_\_\_  
 \*\*\*in order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC  
 This chain of custody is considered complete as is since this information is available in the owner laboratory.

Friday, June 17, 2016 11:01:34 AM

FMT-ALL-C-002rev.00 24March2009

Page 1 of 1

**SUBCONTRACT ORDER**

**Pace Analytical Services, LLC Kentucky**

**3043164**

**SENDING LABORATORY:**

Pace Analytical Services, LLC Kentucky  
PO BOX 907  
Madisonville, KY 42431  
Phone: (270) 821-7375  
Fax: 844-270-7904  
Project Manager: Rob Whittington

**RECEIVING LABORATORY:**

Pace Analytical Services LLC Greensburg PA  
1638 Rosey Town Rd Suite 2,3,4  
Greensburg, PA 15601  
Phone (724) 850-5615  
Fax:

Analysis	Expires	Laboratory ID	Comments
Sample ID: 3043164-01	Water	Sampled:04/26/2023 11:56	Specific Method
Radium Total (sub)	10/21/2023 11:56	EPA 904.0 Radium Sum C	
Radium 228 (sub)	10/21/2023 11:56	EPA 904.0 Radium Sum C	
Radium 226 (sub)	10/31/2023 11:56	EPA 903.1	

**WO# : 30582993**

PM: ADC

Due Date: 05/10/23

CLIENT: PACE\_44\_KYKY

Released By	Date	Received By	Date





DC# Title: ENV-FRM-GBUR-0088 V04\_Sample Condition Upon Receipt-  
Pittsburgh

WO#: 30582993

Effective Date: 02/08/2023

PH: 000

Due Date: 08/10/23

CLIENT: PACE\_44\_MVNY

Client Name: Pace Medication

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace  Other

Tracking Numbers: down

Custody Seal on Cooler/Box Present:  Yes  No

Seals Intact:  Yes  No

Thermometer Used: \_\_\_\_\_ Type of Ice: Wet Blue None

Cooler Temperature: Observed Temp \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C

Tamp should be above freezing to 6°C

Examined By: TM  
Labeled By: TM  
Temped By: \_\_\_\_\_

Comments:	pH paper Lot#			D.P.D. Residual Chlorine Lot #
	Yes	No	NA	
Chain of Custody Present	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1
Chain of Custody Filled Out: -Were client corrections present on COC	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2
Chain of Custody Relinquished	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3
Sampler Name & Signature on COC:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4
Sample Labels match COC: - includes date/time/ID Matrix: <u>WT</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5. <u>No date/time on bottles.</u>
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6
Short Hold Time Analysis (<72hr remaining):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9
Correct Containers Used: -Pace Containers Used	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11
Orthophosphate field filtered:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	12
Hex Cr Aqueous samples field filtered:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	13
Organic Samples checked for dechlorination	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	14
Filtered volume received for dissolved tests:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	15
All containers checked for preservation: exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16. <u>All but 5. 0 ml of HNA total bottles</u>
All containers meet method preservation requirements:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Initial when completed: <u>TM</u> Date/Time of Preservation: <u>5/1/23 14:30</u> Lot# of added Preservative: <u>4NA-217007</u>
8280C/D: Headspace in VOA Vials (> 6mm)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	17
624.1: Headspace in VOA Vials (0mm)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	18
Trip Blank Present:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Trip blank custody seal present? YES or NO
Rad Samples Screened <0.5 mrem/hr.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed: <u>TM</u> Date: <u>5/1/23</u> Survey Meter Ser: <u>1510</u>
Comments:				

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

Client

Site

304064

Page 1 of 1

Profile Number 11851

Notes

Sample Line Item	Amber Glass					Plastic					Viats					Other									
	AGSH	AGSS	AGSU	AGST	AGT	BP1N	BP1U	BP2S	BP2U	BP3U	BP3S	BP3N	BP3U	DG9S	VG9H	VG9T	WASU	WAK	WGRU	WGRU	ZPLC	GCUB	GN	GN	GN
1																									

WO#: 30582993

PM: 000 Due Date: 05/19/23

CLIENT: PRCE\_44\_MKY

Container Codes

### Glass

GN	1 Gallon Jug with HNO3
AG15	1L amber glass H2SO4
AG1H	1L amber glass HCl
AG1T	1L amber glass NA Thiosulfate
AG1U	1L clear glass unpreserved
AG3S	200mL amber glass H2SO4
AG3U	200mL amber glass unpreserved
DG9S	40mL amber VOA vial H2SO4
VG9U	40mL clear VOA vial
VG9T	40mL clear VOA vial Na Thiosulfate
VG9H	40mL clear VOA vial HCl
JG1U	4oz amber wide jar
WG1U	4oz wide jar unpreserved
BG2U	500mL clear glass unpreserved
AG2U	500mL amber glass unpreserved
WG2U	8oz wide jar unpreserved
GN	General

### Plastic/Misc.

GCUB	1 gallon cubitainer
T2GN	1/2 pailon cubitainer
SP5T	120mL copoform Na Thiosulfate
BP1N	1L plastic HNO3
BP1U	1L plastic unpreserved
BP2S	250mL plastic H2SO4
BP2N	250mL plastic HNO3
BP2U	250mL plastic unpreserved
BP3C	250mL plastic NaOH
BP2S	500mL plastic H2SO4
BP2U	500mL plastic unpreserved

EZ	5g Encore
V00K	Kil Volatile Sol
I	Wipes/Swab
ZP_C	Sliploc Bag
WT	Warts
SL	Solid
OL	Non-Aq Liquid
WP	Wipe



May 19, 2023

Rob Whittington  
Pace Analytical Madisonville  
825 Industrial Rd  
Madisonville, KY 42431

RE: Project: 3043165  
Pace Project No.: 30583000

Dear Rob Whittington:

Enclosed are the analytical results for sample(s) received by the laboratory on April 28, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Greensburg

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

Sincerely,

Carla Cmar  
carla.cmar@pacelabs.com  
(724)850-5600  
Project Manager

Enclosures

cc: Doug Wolfe, Pace Analytical Madisonville



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: 3043165

Pace Project No.: 30583000

---

### **Pace Analytical Services Pennsylvania**

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Florida: Cert E871149 SEKS WET

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

---

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: 3043165  
Pace Project No.: 30583000

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30583000001	3043165-01	Water	04/24/23 12:00	04/28/23 09:40

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 3043165  
Pace Project No.: 30583000

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30583000001	3043165-01	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

### REPORT OF LABORATORY ANALYSIS

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**ANALYTICAL RESULTS - RADIOCHEMISTRY**

Project: 3043165  
 Pace Project No.: 30583000

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: 3043165-01</b> <b>Lab ID: 30583000001</b> Collected: 04/24/23 12:00      Received: 04/28/23 09:40      Matrix: Water PWS:      Site ID:      Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	<b>0.206 ± 0.588 (1.09)</b> C:NA T:88%	pCi/L	05/17/23 14:33	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>0.547 ± 0.396 (0.779)</b> C:80% T:84%	pCi/L	05/11/23 13:02	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>0.753 ± 0.984 (1.87)</b>	pCi/L	05/19/23 14:57	7440-14-4	

**REPORT OF LABORATORY ANALYSIS**

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: 3043165  
 Pace Project No.: 30583000

---

QC Batch: 585433	Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1	Analysis Description: 903.1 Radium-226
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30583000001

---

METHOD BLANK: 2843307 Matrix: Water  
 Associated Lab Samples: 30583000001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.266 ± 0.302 (0.477) C:NA T:91%	pCi/L	05/17/23 14:07	

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

**REPORT OF LABORATORY ANALYSIS**

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: 3043165  
 Pace Project No.: 30583000

---

QC Batch: 585436	Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0	Analysis Description: 904.0 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30583000001

---

METHOD BLANK: 2843322 Matrix: Water

Associated Lab Samples: 30583000001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.423 ± 0.344 (0.683) C:75% T:85%	pCi/L	05/11/23 12:59	

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

**REPORT OF LABORATORY ANALYSIS**

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## QUALIFIERS

Project: 3043165  
Pace Project No.: 30583000

---

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 3043165  
Pace Project No.: 30583000

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30583000001	3043165-01	EPA 903.1	585433		
30583000001	3043165-01	EPA 904.0	585436		
30583000001	3043165-01	Total Radium Calculation	589434		

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
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Chain of Custody



Workorder: 3043165

Worker Name: MW-112 Wilson 092-0000 Owner Received Date: 4/24/2023

Results Requested By: Standard

Report To:

Subcontract To:

Requested Analysis

Pace Analytical Services, LLC  
 825 Industrial Road  
 Madisonville, KY 42409  
 270-821-7375  
 rob.whittington@pace labs.com

Pace Analytical Services LLC Greensburg P/ 1638 Rosey Town Rd Suite 2,3,4 Greensburg, PA 15601 (724) 850-5615

WO#: 30583000  
 PACE ANALYTICAL  
 30583000

Preserved Containers

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers	LAB USE ONLY
1							
2	3043165-01		04/24/23 12:00	IR44-McCoy	Water		X
3							
4							
5							
6							
7							
8							
9							
10							

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	Jessika Franklin	4/27/2023			
2					
3					

Cooler Temperature on Receipt: \_\_\_\_\_ °C Custody Seal Y or N Received on Ice Y or N Sample Intact Y or N  
 \*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC  
 This chain of custody is considered complete as is since this information is available in the owner laboratory.

Friday, June 17, 2016 11:01:34 AM

FMT-ALL-C-002rev.00 24March2009



**SUBCONTRACT ORDER**

**Pace Analytical Services, LLC Kentucky**

**3043165**

**SENDING LABORATORY:**

Pace Analytical Services, LLC Kentucky  
PO BOX 907  
Madisonville, KY 42431  
Phone: (270) 821-7375  
Fax: 844-270-7904  
Project Manager: Rob Whittington

**RECEIVING LABORATORY:**

Pace Analytical Services LLC Greensburg PA  
1638 Rosey Town Rd Sate 2,3,4  
Greensburg, PA 15601  
Phone: (724) 850-5615  
Fax:

Analysis	Expires	Laboratory ID	Comments
Sample ID: 3043165-01	Water	Sampled:04/24/2023 12:00	Specific Method
Radium Total (sub)	10/21/2023 12:00	EPA 904.0 Radium Sum C	
Radium 228 (sub)	10/21/2023 12:00	EPA 904.0 Radium Sum C	
Radium 226 (sub)	10/21/2023 12:00	EPA 903.1	

**WO# : 30583000**

PH: 60C Due Date: 05/19/23  
CLIENT: PAGE\_44\_KYKY

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_



DC# Title: ENV-FRM-GBOR-0088 v04\_Sample Condition upon Receipt  
 Pittsburgh

WO#: 30583000

Effective Date: 02/03/2023

PH: ADC Due Date: 05/19/23  
 CLIENT: PACE\_44\_MWY

Client Name: Pace Madisonville

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace  Other

Tracking Number: 1076

Examined By	<u>PH</u>
Labeled By	<u>PH</u>
Temped By	<u>-</u>

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

Thermometer Used: -      Type of Ice: Wet Blue None

Cooler Temperature: Observed Temp - °C      Correction Factor - °C      Final Temp: - °C  
 Temp should be above freezing to 6°C

Comments:	Yes	No	NA	pH paper Lot#	D.P.D. Residual Chlorine Lot #
				<u>1003124</u>	<u>-</u>
Chain of Custody Present	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.	
Chain of Custody Filled Out: -Were client corrections present on CDC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.	
Chain of Custody Relinquished	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.	
Sampler Name & Signature on CDC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4.	
Sample Labels match CDC: -Includes date/time/ID Matrix: <u>WT</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5. <u>No date/time on bottles.</u>	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.	
Short Hold Time Analysis (<72hr remaining):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.	
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8.	
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.	
Correct Containers Used: -Pace Containers Used	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.	
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.	
Orthophosphate field filtered:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	12.	
Hex Cr Aqueous samples field filtered:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	13.	
Organic Samples checked for dechlorination	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	14.	
Filtered volume received for dissolved tests:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	15.	
All containers checked for preservation: exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16. <u>Added 2.5ml of HNO3 to all bottles.</u>	
All containers meet method preservation requirements:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed <u>PH</u>	Date/Time of Preservation <u>5/11/23 15:00</u>
				Lot# of added Preservative <u>AN03 2/2007</u>	
8260C/D: Headspace in VOA Vials (> 6mm)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	17.	
624.1: Headspace in VOA Vials (0mm)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	18.	
Trip Blank Present:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Trip Blank custody seal present? YES or NO	
Rad Samples Screened <0.5 mrem/hr.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed <u>PH</u>	Date: <u>5/11/23</u> Survey Meter SN: <u>1665</u>
Comments:					

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





May 19, 2023

Rob Whittington  
Pace Analytical Madisonville  
825 Industrial Rd  
Madisonville, KY 42431

RE: Project: 3043166  
Pace Project No.: 30582954

Dear Rob Whittington:

Enclosed are the analytical results for sample(s) received by the laboratory on April 28, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Greensburg

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

Sincerely,

Carla Cmar  
carla.cmar@pacelabs.com  
(724)850-5600  
Project Manager

Enclosures

cc: Doug Wolfe, Pace Analytical Madisonville



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: 3043166  
Pace Project No.: 30582954

---

### Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Florida: Cert E871149 SEKS WET

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

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## REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: 3043166  
Pace Project No.: 30582954

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Lab ID	Sample ID	Matrix	Date Collected	Date Received
30582954001	3043166-01	Water	04/24/23 10:15	04/28/23 09:40

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 3043166  
Pace Project No.: 30582954

---

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30582954001	3043166-01	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

---

PASI-PA = Pace Analytical Services - Greensburg

### REPORT OF LABORATORY ANALYSIS

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**ANALYTICAL RESULTS - RADIOCHEMISTRY**

Project: 3043166  
 Pace Project No.: 30582954

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: 3043166-01</b> <b>Lab ID: 30582954001</b> Collected: 04/24/23 10:15      Received: 04/28/23 09:40      Matrix: Water PWS:      Site ID:      Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	<b>0.525 ± 0.607 (0.986)</b> C:NA T:92%	pCi/L	05/17/23 14:07	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>1.07 ± 0.438 (0.675)</b> C:75% T:85%	pCi/L	05/11/23 13:00	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>1.60 ± 1.05 (1.66)</b>	pCi/L	05/19/23 14:57	7440-14-4	

**REPORT OF LABORATORY ANALYSIS**

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: 3043166  
 Pace Project No.: 30582954

QC Batch: 585433	Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1	Analysis Description: 903.1 Radium-226
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30582954001

METHOD BLANK: 2843307 Matrix: Water

Associated Lab Samples: 30582954001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.266 ± 0.302 (0.477) C:NA T:91%	pCi/L	05/17/23 14:07	

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

**REPORT OF LABORATORY ANALYSIS**

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: 3043166  
Pace Project No.: 30582954

---

QC Batch: 585436	Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0	Analysis Description: 904.0 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30582954001

---

METHOD BLANK: 2843322 Matrix: Water

Associated Lab Samples: 30582954001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.423 ± 0.344 (0.683) C:75% T:85%	pCi/L	05/11/23 12:59	

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

### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: 3043166  
Pace Project No.: 30582954

---

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 3043166  
Pace Project No.: 30582954

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30582954001	3043166-01	EPA 903.1	585433		
30582954001	3043166-01	EPA 904.0	585436		
30582954001	3043166-01	Total Radium Calculation	589434		

### REPORT OF LABORATORY ANALYSIS

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Chain of Custody



Workorder: 3043166

Workorder Name: MW-113 Wilson 092-0000 Owner Received Date: 4/24/2023

Results Requested By: Standard

Report To: Subcontract To: Requested Analysis

Pace Analytical Services, LLC  
 825 Industrial Road  
 Madisonville, KY 42409  
 270-821-7375  
 rob.whittington@pacelabs.com

Pace Analytical Services LLC Greensburg P4  
 1638 Roscy Town Rd Suite 2,3,4  
 Greensburg, PA 15601  
 (724) 850-5615

WO#: 30582954  
 16662954

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Comments	EPA 903.1	EPA 904.0 Radium Sum Calc	LAB USE ONLY
1									
2	3043166-01		04/24/23 10:15	IR04-McCoy	Water		X	X	Cell
3									
4									
5									
6									
7									
8									
9									
10									

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	Jessica Franklin	4/27/2023	[Signature]	4/28/2023	
2					
3					

Cooler Temperature on Receipt \_\_\_\_\_ °C Custody Seal Y or (N) Received on Ice Y or (N) Sample Intact Y or (N)  
 In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC  
 This chain of custody is considered complete as is since this information is available in the owner laboratory.

Friday, June 17, 2016 11:01:34 AM

FMT-ALL-C-002rev.00 24March2009

Page 1 of 1

**SUBCONTRACT ORDER**

Pace Analytical Services, LLC Kentucky

**3043166**

**SENDING LABORATORY:**

Pace Analytical Services, LLC Kentucky

PO BOX 907

Madisonville, KY 42431

Phone: (270) 821-7375

Fax: 844-270-7904

Project Manager: Rob Whittington

**RECEIVING LABORATORY:**

Pace Analytical Services LLC Greensburg PA

1618 Rosey Town Rd Suite 2,3,4

Greensburg, PA 15601

Phone: (724) 850-5675

Fax:

Analysis	Expires	Laboratory ID	Comments
Sample ID: 3043166-01	Water	Sampled: 04/24/2023 10:15	Specific Method
Radium Total (sub)	10/21/2023 10:15	EPA 904.0 Radium Sum C	
Radium 228 (sub)	10/21/2023 10:15	EPA 904.0 Radium Sum C	
Radium 226 (sub)	10/21/2023 10:15	EPA 903.1	

**WO# : 30582954**

PR: ADC

Due Date: 05/16/23

CLIENT: PACE\_44\_M/KY

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_

**DOC Title:** ENV-PRM-OSUR-0085 v04\_Sample Condition Upon Receipt  
**Pittsburgh**  
**WO#: 30582954**  
**Effective Date:** 02/08/2023 **PH: 60C** **Due Date:** 05/19/23  
**CLIENT: PAGE\_44\_JWKY**



**Client Name:** Pace Madisonville

**Courier:**  Fed Ex  UPS  USPS  Client  Commercial  Pace  Other

**Tracking Number:** 7514

<b>Examined By</b>	<u>TH</u>
<b>Labeled By</b>	<u>TH</u>
<b>Temped By</b>	<u>-</u>

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

**Thermometer Used:** - **Type of Ice:** Wet Blue Storib

**Cooler Temperature:** **Observed Temp:** - °C **Correction Factor:** - °C **Final Temp:** - °C

Temp should be above freezing to 6°C

Comments:	pH paper Lot#			D.P.D. Residual Chlorine Lot #
	Yes	No	NA	
Chain of Custody Present	<input checked="" type="checkbox"/>			1. <u>100324</u>
Chain of Custody Filled Out	<input checked="" type="checkbox"/>			2. <u>-</u>
-Were client corrections present on CDC		<input checked="" type="checkbox"/>		
Chain of Custody Relinquished	<input checked="" type="checkbox"/>			3. <u>-</u>
Sampler Name & Signature on CDC:		<input checked="" type="checkbox"/>		4. <u>-</u>
Sample Labels match CDC		<input checked="" type="checkbox"/>		5. <u>Na dichlorine on bottles</u>
-Includes date/time/ID Matrix		<input checked="" type="checkbox"/>		
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>			6. <u>WT</u>
Short Hold Time Analysis (<72hr remaining):		<input checked="" type="checkbox"/>		7. <u>-</u>
Rush Turn Around Time Requested:		<input checked="" type="checkbox"/>		8. <u>-</u>
Sufficient Volume:	<input checked="" type="checkbox"/>			9. <u>-</u>
Correct Containers Used:	<input checked="" type="checkbox"/>			10. <u>-</u>
-Pace Containers Used	<input checked="" type="checkbox"/>			
Containers Intact:	<input checked="" type="checkbox"/>			11. <u>-</u>
Orthophosphate field filtered:			<input checked="" type="checkbox"/>	12. <u>-</u>
Hex Cr Aqueous samples field filtered:			<input checked="" type="checkbox"/>	13. <u>-</u>
Organic Samples checked for dechlorination			<input checked="" type="checkbox"/>	14. <u>-</u>
Filtered volume received for dissolved tests:			<input checked="" type="checkbox"/>	15. <u>-</u>
All containers checked for preservation:	<input checked="" type="checkbox"/>			15. <u>Added 2.5 ml of HNO3 to all bottles</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix				
All containers meet method preservation requirements:		<input checked="" type="checkbox"/>		Initial when completed <u>TH</u> Date/Time of Preservation <u>5/12/23</u> Lot# of added Preservative <u>HNO3 21007</u>
B260C/D: Headspace in VOA Vials (> 6mm)			<input checked="" type="checkbox"/>	17. <u>-</u>
624.1: Headspace in VOA Vials (0mm)			<input checked="" type="checkbox"/>	13. <u>-</u>
Trip Blank Present:			<input checked="" type="checkbox"/>	Trip blank custody seal present? YES or NO
Rad Samples Screened <0.5 mram/hr.	<input checked="" type="checkbox"/>			Initial when completed <u>TH</u> Date: <u>5/11/23</u> Survey Meter SN: <u>1563</u>
Comments:	<u>-</u>			

Note: For IAC compliance samples with discrepancies, a copy of this form must be sent to the DEHR Certification Office. P&E Reviews: documented electronically in URS through the SRP Review schedule in the Workorder Edit Screen.

Client

Site 3043166

Page 1 of 1

Profile Number 11851

Notes

Sample Line Item	Amber Glass				Plastic								Vials				Other									
	AG1H	AG39	AG3U	AG5U	AG5T	BP1N	BP1U	BP28	BP2U	BP30	BP3N	BP3S	BP3U	DG3S	VG9H	VG9T	VG8U	VOAK	WG9U	WG9U	ZPLC	GCUB	GN	12GN	GN	
1																										

**NO# : 30582954**

PH: AOC Dup Date: 05/19/23  
 CLIENT: POCE\_04\_TTKY

Container Codes

Glass	
QJN	1 Gallon Jug with HNS
AG5U	100mL amber glass unpreserved
AG5T	100mL amber glass Na Thiosulfate
GJN	1 Gallon Jug
AG1S	1L amber glass H2SO4
AG1H	1L amber glass HCl
AG1T	1L amber glass Na Thiosulfate
AG1U	1L clear glass unpreserved
AG3S	250mL amber glass H2SO4
AG3U	250mL amber glass unpreserved

Plastic/Misc.	
GCUB	1 gallon cubitainer
12GN	1/2 gallon cubitainer
SP6T	120mL colliform Na Thiosulfate
BP1N	1L plastic HNO3
BP1U	1L plastic unpreserved
BP3S	250mL plastic H2SO4
BP3N	250mL plastic HNO3
BP3U	250mL plastic unpreserved
BP3C	250mL plastic NaOH
BP2S	500mL plastic H2SO4
BP2U	500mL plastic unpreserved

EZ1	5g Encorb
VOAK	Kit Volatile Solid
I	Wipe-Swab
ZPLC	Signic Bag
WT	Washer
SL	Solid
OL	Non-Aq Liquid
WP	Wipe

# Chain of Custody

Scheduled for: 04/19/2023



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Storkman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Storkman  
PO Box 24  
Henderson, KY 42419

Project: MW-104 Wilson 092-00004

Phone: (270) 844-6000  
PWS ID#

PO#: \_\_\_\_\_

Please Print Legibly

State: KY

Quota# \_\_\_\_\_

Collected by (Signature): [Signature]

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below:

Samples Chlorinated? Yes  No

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	*required information* Date (mm/dd/yyyy): Collection Time (24 hr):	Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3043167-01 F	<u>4-25-23</u> <u>8:40</u>	Plastic 1L pH<2 w/HNO3 Rad 226 (Sub)	1	MW104	g / c	Radium 226 (sub)
		Preservation Check: pH: <input checked="" type="checkbox"/>				
3043167-01 G	<u>4-25-23</u> <u>8:40</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW104	g / c	Radium 228 (sub)
		Preservation Check: pH: <input checked="" type="checkbox"/>				
3043167-01 H	<u>4-25-23</u> <u>8:40</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW104	g / c	Radium 228 (sub)
		Preservation Check: pH: <input checked="" type="checkbox"/>				
3043167-01 I	<u>4-25-23</u> <u>8:40</u>	Plastic 1L pH<2 w/HNO3 (Sub)	1	MW104	g / c	Radium Total (sub)
		Preservation Check: pH: <input checked="" type="checkbox"/>				
3043167-01 J	<u>4-25-23</u> <u>8:40</u>	AG 250mL pH<2 w/H2SO4	1	MW104	g / c	TOC
		Preservation Check: pH: <input checked="" type="checkbox"/>				
3043167-02 A	<u>4-25-23</u> <u>8:40</u>	CG 250mL pH<2 w/HCl Field Blank	1	Mercury Field Blank	g / c	Mercury Tot 245.7 Field Blank

Preservation Check Performed by: [Signature]

Field date collected by Trevor S. Green Date (mm/dd/yyyy) 4-25-23 Time (24 hr) 8:40

pH 6.81 Cond 2.1 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC) 15.47 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb (NTU) \_\_\_\_\_

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (gpm) \_\_\_\_\_

Relinquished by: (Signature) [Signature] Received by: (Signature) [Signature] Date (mm/dd/yyyy) 4-26-23 Time (24 hr) 1900

### Chain of Custody

Scheduled for: **04/19/2023**



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Stordeman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Stordeman  
PO Box 24  
Henderson, KY 42419

Project: MW-4D Wilson DB2-0004

Phone: (270) 844-6000  
PWS ID# \_\_\_\_\_  
State: Ky

PO# \_\_\_\_\_  
Quoted# \_\_\_\_\_

Please Print Legibly

Collected by (Signature): Tami Head  
\*required information\*

Compliance Monitoring? Yes  No

Samples Chilled? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below.

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	*required information* Date (mm/dd/yyyy) Collection Time (24 hr)	Bottle and Preservative	Containers	Sample Description	Composita	Sample Analysis Requested
3043171-01 F	<u>4-26-23</u> <u>10:10</u>	Plastic 1L pH<2 w/HR03 Rad 226 (Sub)	1	MW4D	g/c	Radium 226 (sub)
		Preservation Check: pH:	<input checked="" type="checkbox"/>			
3043171-01 G	<u>4-26-23</u> <u>10:10</u>	Plastic 1L pH<2 w/HR03 Rad 228 (Sub)	1	MW4D	g/c	Radium 228 (sub)
		Preservation Check: pH:	<input checked="" type="checkbox"/>			
3043171-01 H	<u>4-26-23</u> <u>10:10</u>	Plastic 1L pH<2 w/HR03 Rad 228 (Sub)	1	MW4D	g/c	Radium 228 (sub)
		Preservation Check: pH:	<input checked="" type="checkbox"/>			
3043171-01 I	<u>4-26-23</u> <u>10:10</u>	Plastic 1L pH<2 w/HR03 (Sub)	1	MW4D	g/c	Radium Total (sub)
		Preservation Check: pH:	<input checked="" type="checkbox"/>			
3043171-01 J	<u>4-26-23</u> <u>10:10</u>	AG 250mL pH<2 w/HR04	1	MW4D	g/c	TOC
		Preservation Check: pH:	<input checked="" type="checkbox"/>			
3043171-02 A	<u>4-26-23</u> <u>10:10</u>	CG 250mL pH<2 w/HC1 Field Blank	1	Mercury Field Blank	g/c	Mercury Tot 245.7 Field Blank

Preservation Check Performed by: ARJ

Field data collected by Tami Head Date (mm/dd/yyyy) 4-26-23 Time (24 hr) 10:10

pH 6.46 Cond (umho/cm) 4.56 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC) 22.16 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Released by (Signature): Tami Head Received by (Signature): Ammy Van Date (mm/dd/yyyy): 4-26-23 Time (24 hr): 1400



# Chain of Custody

Scheduled for: 04/19/2023



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Stockman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Stockman  
PO Box 24  
Henderson, KY 42419

Project: MW-5 Wilson 092-0004

Phone: (270) 844-6000  
PWS ID:  
State: Ky

PO#: \_\_\_\_\_  
Outlet# \_\_\_\_\_

Please Print Legibly

Collected by (Signature): [Signature]  
\*required information

Compliance Monitoring? Yes  No

Samples Chlorinated? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below:

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	*required information* Date (mm/dd/yy) Collection Time (24 hr)	Bottle and Preservative	Containers	Sample Description	Composita	Sample Analysis Requested
3043172-01 F	<u>4-18-23</u> <u>11:20</u>	Plastic 1L pH<2 w/HNO3 Rad 225 (Sub)	1	MW5	g/c	Radium 226 (sub)
		Preservation Check: pH: <u>✓</u>				
3043172-01 G	<u>4-25-23</u> <u>11:20</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW5	g/c	Radium 226 (sub)
		Preservation Check: pH: <u>✓</u>				
3043172-01 H	<u>4-25-23</u> <u>11:20</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW5	g/c	Radium 228 (sub)
		Preservation Check: pH: <u>✓</u>				
3043172-01 I	<u>4-25-23</u> <u>11:20</u>	Plastic 1L pH<2 w/HNO3 (Sub)	1	MW5	g/c	Radium Total (sub)
		Preservation Check: pH: <u>✓</u>				
3043172-01 J	<u>4-25-23</u> <u>11:20</u>	AG 250mL pH<2 w/H2SO4	1	MW5	g/c	TOC
		Preservation Check: pH: <u>✓</u>				
3043172-02 A	<u>4-25-23</u> <u>11:00</u>	CG 250mL pH<2 w/HCl Field Blank	1	Mercury Field Blank	g/c	Mercury Tot 245.7 Field Blank

Preservation Check Performed by: [Signature]

Field data collected by: [Signature] Date (mm/dd/yy) 4-25-23 Time (24 hr) 11:20

pH 6.47 Cond (umho/cm) 4.19 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC) 17.28 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Retrieved by (Signature): [Signature] Received by (Signature): [Signature] Date (mm/dd/yy) 4-26-23 Time (24 hr) 1400

# Chain of Custody

Scheduled for: **04/19/2023**



Client: Big Rivers Electric Corporation Wilson Station

Report To: 1  
Big Rivers Electric Corporation Wilson Station  
Dawn Storchman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Storchman  
PO Box 24  
Henderson, KY 42419

Project: MW-6 Wilson 092-00004

Phone: (270) 844-6000  
PWS ID#  
State:

PO# \_\_\_\_\_  
Quote# \_\_\_\_\_

Please Print Legibly

Collected by (Signature): [Signature]  
\*required information

Compliance Monitoring? Yes  No

Samples Chlorinated? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	*required information* Date (mm/dd/yy): Time (24 hr):	Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3043173-01 F	4-25-23 1300	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW6	g/c	Radium 228 (sub)
		Preservation Check: pH: <u>✓</u>				
3043173-01 G	4-25-23 1300	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW6	g/c	Radium 228 (sub)
		Preservation Check: pH: <u>✓</u>				
3043173-01 H	4-25-23 1300	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW6	g/c	Radium 228 (sub)
		Preservation Check: pH: <u>✓</u>				
3043173-01 I	4-25-23 1300	Plastic 1L pH<2 w/HNO3 (Sub)	1	MW6	g/c	Radium Total (sub)
		Preservation Check: pH: <u>✓</u>				
3043173-01 J	4-25-23 1300	AG 250mL pH<2 w/H2SO4	1	MW6	g/c	TOC
		Preservation Check: pH: <u>✓</u>				
3043173-02 A	4-25-23 1300	CG 250mL pH<2 w/HCl Field Blank	1	Mercury Field Blank	g/c	Mercury Tot 245 7 Field Blank

Preservation Check Performed by [Signature]

Field data collected by: Travis Date (mm/dd/yy) 4-25-23 Time (24 hr) 1300

pH 6.45 Cond (uS/cm) 3.11 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC) 17.65 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature) [Signature] Received by: (Signature) [Signature] Date (mm/dd/yy) 4-26-23 Time (24 hr) 1400

# Chain of Custody

Scheduled for: **04/19/2023**



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Storkman  
PO Box 24  
Henderson, KY 42418

Invoice To:  
Big Rivers Electric Corporation Wilson Station

Project: MW-7 Wilson 092-00004

Dawn Storkman  
PO Box 24  
Henderson, KY 42418

Phone: (270) 844-6000  
PWS ID#  
State KY

PO# \_\_\_\_\_  
Quoted# \_\_\_\_\_

Please Print Legibly

Collected by (Signature): Matt Morton  
required information

Compliance Monitoring? Yes  No

Samples Chlorinated? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below.

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	*required information* Date (mm/dd/yy)	Collection Time (24 hr)	Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3043174-01 F	<u>4-25-23</u>	<u>1:52</u>	Plastic 1L pH<2 w/HNO3 Rad 226 (Sub)	1	MW7	g/c	Radium 226 (sub)
			Preservation Check: pH: _____	<input checked="" type="checkbox"/>			
3043174-01 G	<u>4-25-23</u>	<u>1:52</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW7	g/c	Radium 228 (sub)
			Preservation Check: pH: _____	<input checked="" type="checkbox"/>			
3043174-01 H	<u>4-25-23</u>	<u>1:52</u>	Plastic 1L pH<2 w/HNO3 Rad 229 (Sub)	1	MW7	g/c	Radium 228 (sub)
			Preservation Check: pH: _____	<input checked="" type="checkbox"/>			
3043174-01 I	<u>4-25-23</u>	<u>1:52</u>	Plastic 1L pH<2 w/HNO3 (Sub)	1	MW7	g/c	Radium Total (sub)
			Preservation Check: pH: _____	<input checked="" type="checkbox"/>			
3043174-01 J	<u>4-25-23</u>	<u>1:52</u>	AG 250mL pH<2 w/H2SO4	1	MW7	g/c	TOC
			Preservation Check: pH: _____	<input checked="" type="checkbox"/>			
3043174-02 A	<u>4-25-23</u>	<u>1:52</u>	CG 250mL pH<2 w/HCl Field Blank	1	Mercury Field Blank	g/c	Mercury Tot 245 7 Field Blank

Preservation Check Performed by: ACL

Field data collected by: Matt Morton Date (mm/dd/yy) 4-25-23 Time (24 hr) 1:52

pH 6.55 Cond (umho) 278 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC) 17.65 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature) <u>Matt Morton</u> <u>Tom Small</u>	Received by: (Signature) <u>Tom Small</u> <u>Army Per</u>	Date (mm/dd/yy) <u>04-25-23</u> <u>4-26-23</u>	Time (24 hr) <u>14:30</u> <u>1400</u>
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### Chain of Custody

Scheduled for: 04/19/2023



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Stockman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Stockman  
PO Box 24  
Henderson, KY 42419

Project: MW-2 Wilson 092-0004

Phone: (270) 844-6000  
PWS ID# \_\_\_\_\_  
State: KY

PO#: \_\_\_\_\_  
Quoted: \_\_\_\_\_

Please Print Legibly

Collected by (Signature) [Signature]  
(required information)

Compliance Monitoring? Yes  No

Samples Chlorinated? Yes  No

\*For composite samples please indicate begin time, and time and temp (oC) at end time below:

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	*required information* Date (mm/dd/yy):	Collection Time (24 hr)	Bottle and Preservative	Containers	Sample Description	Composite	Sample Analyses Requested
3043175-01 F	<u>4-26-23</u>	<u>8:04</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MWB	g/c	Radium 226 (sub)
			Preservation Check: pH: <u>✓</u>				
3043175-01 G	<u>4-26-23</u>	<u>8:04</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MWB	g/c	Radium 228 (sub)
			Preservation Check: pH: <u>✓</u>				
3043175-01 H	<u>4-26-23</u>	<u>8:04</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MWB	g/c	Radium 228 (sub)
			Preservation Check: pH: <u>✓</u>				
3043175-01 I	<u>4-26-23</u>	<u>8:04</u>	Plastic 1L pH<2 w/HNO3 (Sub)	1	MWB	g/c	Radium Total (sub)
			Preservation Check: pH: <u>✓</u>				
3043175-01 J	<u>4-26-23</u>	<u>8:04</u>	AG 250mL pH<2 w/H2SO4	1	MWB	g/c	TOC
			Preservation Check: pH: _____				
3043175-02 A	<u>4-26-23</u>	<u>8:04</u>	CG 250mL pH<2 w/HCl Field Blank	1	Mercury Field Blank	g/c	Mercury Tot 245.7 Field Blank

Preservation Check Performed by: [Signature]

Field data collected by: [Signature] Date (mm/dd/yy) 4-26-23 Time (24 hr) 8:04

pH 6.41 Cond (umho/cm) 255.173 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC) 15.12 or (oF) \_\_\_\_\_ Static Water Level 43.9 DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Released by (Signature) <u>[Signature]</u>	Received by (Signature) <u>[Signature]</u>	Date (mm/dd/yy) <u>4-26-23</u>	Time (24 hr) <u>12:24</u>
		<u>4-26-23</u>	<u>1:00</u>

# Chain of Custody

Scheduled for: 04/19/2023



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Storkman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Storkman  
PO Box 24  
Henderson, KY 42419

Project: Well Duplicate 1 Wilson 092-00004

Phone: (270) 644-6000  
PWS ID# \_\_\_\_\_  
State: Ky

PO# \_\_\_\_\_  
Quote# \_\_\_\_\_

Please Print Legibly

Collected by (Signature): [Signature]

Compliance Monitoring? Yes  No

Samples Chlorinated? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	*required information* Date (mm/dd/yyyy)	Collection Time (24 hr)	Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3043176-01 F	<u>4-25-23</u>	<u>1430</u>	Plastic 1L pH<2 w/HNO3 Rad 226 (Sub)	1	Well Duplicate 1	g / c	Radium 226 (sub)
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3043176-01 G	<u>4-25-23</u>	<u>1430</u>	Plastic 1L pH<2 w/HNO3 Rad 226 (Sub)	1	Well Duplicate 1	g / c	Radium 226 (sub)
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3043176-01 H	<u>4-25-23</u>	<u>1430</u>	Plastic 1L pH<2 w/HNO3 Rad 226 (Sub)	1	Well Duplicate 1	g / c	Radium 226 (sub)
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3043176-01 I	<u>4-25-23</u>	<u>1430</u>	Plastic 1L pH<2 w/HNO3 (Sub)	1	Well Duplicate 1	g / c	Radium Total (sub)
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3043176-01 J	<u>4-25-23</u>	<u>1430</u>	AG 250mL pH<2 w/H2SO4	1	Well Duplicate 1	g / c	TOC
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3043176-02 A	<u>4-25-23</u>	<u>1430</u>	CG 250mL pH<2 w/HCl Field Blank	1	Mercury Field Blank	g / c	Mercury Tot 245.7 Field Blank

Preservation Check Performed by ALC

Field data collected by: Toni's Speed Date (mm/dd/yyyy) 4-25-23 Time (24 hr) 1300

pH 6.45 Cond (umho) 3.11 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC) 17.65 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by (Signature): [Signature] Received by (Signature): [Signature] Date (mm/dd/yyyy) 4-26-23 Time (24 hr) 1400

### Chain of Custody

Scheduled for: **04/19/2023**



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Storduman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station

Dawn Storduman  
PO Box 24  
Henderson, KY 42419

Project: Well Duplicate 2 Wilson 092-80004

Phone (270) 844-8000

PWS ID#

State: VA

PO# \_\_\_\_\_

Quote# \_\_\_\_\_

Please Print Legibly

Collected by (Signature): [Signature]

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below

Samples Chlorinated? Yes  No

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # 3043177 Sample ID#	*required information* Date (mm/dd/yy) Collection Time (24 hr)	Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3043177-01 F	<u>04-25-23</u> <u>0844</u>	Plastic 1L pH<2 w/HNO3 Rad 226 (Sub)	1	Well Duplicate 2	g / c	Radium 226 (sub)
		Preservation Check: pH: <u>✓</u>				
3043177-01 G	<u>04-25-23</u> <u>0844</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	Well Duplicate 2	g / c	Radium 228 (sub)
		Preservation Check: pH: <u>✓</u>				
3043177-01 H	<u>04-25-23</u> <u>0844</u>	Plastic 1L pH<2 w/HNO3 Rad 226 (Sub)	1	Well Duplicate 2	g / c	Radium 226 (sub)
		Preservation Check: pH: <u>✓</u>				
3043177-01 I	<u>04-25-23</u> <u>0844</u>	Plastic 1L pH<2 w/HNO3 (Sub)	1	Well Duplicate 2	g / c	Radium Total (sub)
		Preservation Check: pH: <u>✓</u>				
3043177-01 J	<u>04-25-23</u> <u>0844</u>	AG 250mL pH<2 w/H2SO4	1	Well Duplicate 2	g / c	TOC
		Preservation Check: pH: <u>✓</u>				
3043177-02 A	<u>04-25-23</u> <u>0844</u>	CG 250mL pH<2 w/HCl Field Blank	1	Mercury Field Blank	g / c	Mercury Tot 245 7 Field Blank

Preservation Check Performed by: [Signature]

Field data collected by: Tony's Spence Date (mm/dd/yy): 04-25-23 Time (24 hr): 0820

pH: 6.71 Cond (uM<sup>2</sup>/d): 472 Res Cl (mg/L): \_\_\_\_\_ Tot Cl (mg/L): \_\_\_\_\_ Free Cl (mg/L): \_\_\_\_\_

Temp (oC): 14.29 or (oF): \_\_\_\_\_ Static Water Level: \_\_\_\_\_ DO (mg/L): \_\_\_\_\_ Turb. (NTU): \_\_\_\_\_

Flow (MGD): \_\_\_\_\_ or (CFS): \_\_\_\_\_ or (g/min): \_\_\_\_\_

Relinquished by: (Signature) [Signature] Received by: (Signature) AMMY Z...

Date (mm/dd/yy) 4-26-23 Time (24 hr) 1400



### Chain of Custody

Scheduled for: **04/20/2023**



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Storkman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Storkman  
PO Box 24  
Henderson, KY 42419

Project: Field Blank Wilson 892-80004

Phone: (270) 844-6000  
PWS ID# \_\_\_\_\_  
State: **KY**

PO#: \_\_\_\_\_  
Quote# \_\_\_\_\_

Please Print Legibly

Collected by (Signature): Matt Moxton

Compliance Monitoring? Yes  No

Samples Chlorinated? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below.

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	*required information* Date (mm/dd/yy): Collection Time (24 hr):	Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3043773-01 F	<u>4-25-23 2:22</u>	Plastic 1L pH<2 w/HNO3 Rad 226 (Sub)	1	Field Blank	g/c	Radium 226 (sub)
		Preservation Check: pH: <input checked="" type="checkbox"/>				
3043773-01 G	<u>4-25-23 2:22</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	Field Blank	g/c	Radium 228 (sub)
		Preservation Check: pH: <input checked="" type="checkbox"/>				
3043773-01 H	<u>4-25-23 2:22</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	Field Blank	g/c	Radium 228 (sub)
		Preservation Check: pH: <input checked="" type="checkbox"/>				
3043773-01 I	<u>4-25-23 2:22</u>	Plastic 1L pH<2 w/HNO3 (Sub)	1	Field Blank	g/c	Radium Total (sub)
		Preservation Check: pH: <input checked="" type="checkbox"/>				
3043773-01 J	<u>4-25-23 2:22</u>	AG 250mL pH<2 w/H2SO4	1	Field Blank	g/c	TOC
		Preservation Check: pH: <input checked="" type="checkbox"/>				
3043773-02 A	<u>4-25-23 2:22</u>	CG 250mL pH<2 w/HCl Field Blank	1	Mercury Field Blank	g/c	Mercury Tot 245.7 Field Blank

Preservation Check Performed by AOI

Field data collected by: <u>Matt Moxton</u>	Date (mm/dd/yy): <u>4-25-23</u>	Time (24 hr): <u>2:22</u>
pH _____	Cond (umho) _____	Res Cl (mg/L) _____
Tot Cl (mg/L) _____	Free Cl (mg/L) _____	Temp (oC) _____ or (oF) _____
Static Water Level _____	DO (mg/L) _____	Turb. (NTU) _____
Flow (MGD) _____ or (CFS) _____	or (g/min) _____	

Relinquished by (Signature): <u>Matt Moxton</u>	Received by (Signature): <u>Tom Sand</u>	Date (mm/dd/yy): <u>04-25-23</u>	Time (24 hr): <u>14:30</u>
<u>Tom Sand</u>	<u>annoy Jan</u>	<u>4-26-23</u>	<u>1400</u>



May 19, 2023

Rob Whittington  
Pace Analytical Madisonville  
825 Industrial Rd  
Madisonville, KY 42431

RE: Project: 3043158  
Pace Project No.: 30582955

Dear Rob Whittington:

Enclosed are the analytical results for sample(s) received by the laboratory on April 28, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Greensburg

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

Sincerely,

Carla Cmar  
carla.cmar@pacelabs.com  
(724)850-5600  
Project Manager

Enclosures

cc: Doug Wolfe, Pace Analytical Madisonville



## REPORT OF LABORATORY ANALYSIS

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

## CERTIFICATIONS

Project: 3043158

Pace Project No.: 30582955

---

### **Pace Analytical Services Pennsylvania**

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Florida: Cert E871149 SEKS WET

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

---

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: 3043158  
Pace Project No.: 30582955

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30582955001	3043158-01	Water	04/26/23 07:05	04/28/23 09:40

### REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, LLC.



### SAMPLE ANALYTE COUNT

Project: 3043158  
Pace Project No.: 30582955

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30582955001	3043158-01	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

### REPORT OF LABORATORY ANALYSIS

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**ANALYTICAL RESULTS - RADIOCHEMISTRY**

Project: 3043158  
 Pace Project No.: 30582955

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: 3043158-01</b> <b>Lab ID: 30582955001</b> Collected: 04/26/23 07:05      Received: 04/28/23 09:40      Matrix: Water PWS:      Site ID:      Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	<b>0.423 ± 0.570 (0.958)</b> C:NA T:101%	pCi/L	05/17/23 14:07	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>0.772 ± 0.374 (0.609)</b> C:78% T:78%	pCi/L	05/11/23 13:00	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>1.20 ± 0.944 (1.57)</b>	pCi/L	05/19/23 14:57	7440-14-4	

**REPORT OF LABORATORY ANALYSIS**

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: 3043158  
 Pace Project No.: 30582955

---

QC Batch: 585433	Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1	Analysis Description: 903.1 Radium-226
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30582955001

---

METHOD BLANK: 2843307 Matrix: Water

Associated Lab Samples: 30582955001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.266 ± 0.302 (0.477) C:NA T:91%	pCi/L	05/17/23 14:07	

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

**REPORT OF LABORATORY ANALYSIS**

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: 3043158  
 Pace Project No.: 30582955

QC Batch: 585436	Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0	Analysis Description: 904.0 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30582955001

METHOD BLANK: 2843322 Matrix: Water

Associated Lab Samples: 30582955001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.423 ± 0.344 (0.683) C:75% T:85%	pCi/L	05/11/23 12:59	

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

**REPORT OF LABORATORY ANALYSIS**

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## QUALIFIERS

Project: 3043158  
Pace Project No.: 30582955

---

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

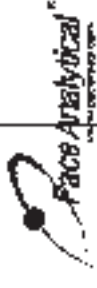
Project: 3043158  
Pace Project No.: 30582955

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30582955001	3043158-01	EPA 903.1	585433		
30582955001	3043158-01	EPA 904.0	585436		
30582955001	3043158-01	Total Radium Calculation	589434		

### REPORT OF LABORATORY ANALYSIS

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Chain of Custody



Workorder: 3043158

Workorder Name: MW-10 Wilson 092-00004 Owner Received Date: 4/26/2023

Results Requested By: Standard

Report To:

Subcontract To:

Requested Analysis:

Pace Analytical Services, LLC  
 825 Industrial Road  
 Madisonville, KY 42409  
 270-821-7375  
 rob.whittington@pace labs.com

Pace Analytical Services LLC Greensburg PA  
 1638 Rosey Town Rd Suite 2,3,4  
 Greensburg, PA 15601  
 (724) 850-5615

WO# : 30582955



Preserved Containers

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers	Requested Analysis
1	3043158-01		04/26/23 07:05	IR44-McCoy	Water		
2							EPA 9040 Radium Sum Calc X
3							EPA 9031 X
4							
5							
6							
7							
8							
9							
10							

LAP USE ONLY  
 COA

Comments

Date/Time

Released By

Date/Time

Released By

Date/Time

4/27/2023

Kayla Zachary

4/27/2023

Kayla Zachary

Cooler Temperature on Receipt

°C

Custody Seal Y or (N)

Received on Ice Y or (N)

Sample Intact (Y) or N

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

Friday, June 17, 2016 11:01:34 AM

FMT-ALL-C-002rev.CO 24March2009

Page 1 of 1

**SUBCONTRACT ORDER**

**Pace Analytical Services, LLC Kentucky  
3043158**

**SENDING LABORATORY:**

Pace Analytical Services, LLC Kentucky  
PO BOX 907  
Madisonville, KY 42431  
Phone: (270) 821-7375  
Fax: 844-270-7904  
Project Manager: Rob Whittington

**RECEIVING LABORATORY:**

Pace Analytical Services LLC Greensburg PA  
1638 Rosey Town Rd Suite 2,3,4  
Greensburg, PA 15601  
Phone : (724) 850-5615  
Fax:

Analysis	Expires	Laboratory ID	Comments
Sample ID: 3043158-01	Water	Sampled: 10/26/2023 07:05	Specific Method
Radium Total (sub)	10/23/2023 07:05	EPA 904.0 Radium Sum C	
Radium 228 (sub)	10/23/2023 07:05	EPA 904.0 Radium Sum C	
Radium 226 (sub)	10/23/2023 07:05	EPA 903.1	

**WO# : 30582955**  
Due Date: 05/19/23  
PH: ADC  
CLIENT: PACE\_44\_KYKY

Released By	Date	Received By	Date





DOC Title: ENV-FRM-GAOR-0066 VOA Sample Condition Upon Receipt  
Pittsburgh

WO#: 30582955

Effective Date: 02/03/2023

PH: ADC

Date Date: 05/19/23

Client Name: Pace Madisonville

CLIENT: PACE\_44\_MVKY

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace  Other

Tracking Number: 700A

Examined By	<u>TH</u>
Labeled By	<u>TH</u>
Temped By	<u>-</u>

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

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

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

Temp should be above freezing in °C

Comments:	pH paper Lot#			D.P.D. Residual Chlorine Lot #
	Yes	No	NA	
Chain of Custody Present	<input checked="" type="checkbox"/>			1. <u>10/2/21</u>
Chain of Custody Filled Out	<input checked="" type="checkbox"/>			2.
-Were client corrections present on COC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Chain of Custody Relinquished	<input checked="" type="checkbox"/>			3.
Sampler Name & Signature on COC		<input checked="" type="checkbox"/>		4.
Sample Labels match COC		<input checked="" type="checkbox"/>		5. <u>No due time on bottles</u>
-Includes date/time/ID				
Matrix:				
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>			6.
Short Hold Time Analysis (<72hr remaining):		<input checked="" type="checkbox"/>		7.
Rush Turn Around Time Requested:		<input checked="" type="checkbox"/>		8.
Sufficient Volume:	<input checked="" type="checkbox"/>			9.
Correct Containers Used	<input checked="" type="checkbox"/>			10.
-Pace Containers Used				
Containers Intact:	<input checked="" type="checkbox"/>			11.
Orthophosphate field filtered:			<input checked="" type="checkbox"/>	12.
Hex Cr Aqueous samples field filtered:			<input checked="" type="checkbox"/>	13.
Organic Samples checked for dechlorination			<input checked="" type="checkbox"/>	14.
Filtered volume received for dissolved tests:	<input checked="" type="checkbox"/>			15.
All containers checked for preservation:				16. <u>Added 2.5ml of HNO3 to all bottles</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix				
All containers meet method preservation requirements:		<input checked="" type="checkbox"/>		Initial when completed <u>TH</u> Date/Time of Preservation <u>5/19/23 11:55</u>
				Lot# of added Preservatives <u>HNO3 212007</u>
825DC/D: Headspace in VOA Vials (> 6mm)			<input checked="" type="checkbox"/>	17.
624.1: Headspace in VOA Vials (0mm)			<input checked="" type="checkbox"/>	18.
Trip Blank Present:			<input checked="" type="checkbox"/>	Trip blank custody seal present? YES or NO
Rad Samples Screened <0.5 mrem/hr.	<input checked="" type="checkbox"/>			Initial when completed <u>TH</u> Date <u>6/1/23</u> Survey Meter SN: <u>1565</u>

Comments:

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





May 19, 2023

Rob Whittington  
Pace Analytical Madisonville  
825 Industrial Rd  
Madisonville, KY 42431

RE: Project: 3043159  
Pace Project No.: 30582961

Dear Rob Whittington:

Enclosed are the analytical results for sample(s) received by the laboratory on April 28, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Greensburg

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

Sincerely,

Carla Cmar  
carla.cmar@pacelabs.com  
(724)850-5600  
Project Manager

Enclosures

cc: Doug Wolfe, Pace Analytical Madisonville



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: 3043159  
Pace Project No.: 30582961

---

### **Pace Analytical Services Pennsylvania**

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

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Georgia Certification #: C040

Florida: Cert E871149 SEKS WET

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

---

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: 3043159  
Pace Project No.: 30582961

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30582961001	3043159-01	Water	04/25/23 09:24	04/28/23 09:40

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 3043159  
Pace Project No.: 30582961

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30582961001	3043159-01	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 3043159  
Pace Project No.: 30582961

**Sample: 3043159-01**      **Lab ID: 30582961001**      Collected: 04/25/23 09:24      Received: 04/28/23 09:40      Matrix: Water  
PWS:      Site ID:      Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	<b>0.140 ± 0.582 (1.11)</b> C:NA T:88%	pCi/L	05/17/23 14:07	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>0.173 ± 0.258 (0.554)</b> C:83% T:83%	pCi/L	05/11/23 13:01	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>0.313 ± 0.840 (1.66)</b>	pCi/L	05/19/23 14:57	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: 3043159  
 Pace Project No.: 30582961

QC Batch: 585433	Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1	Analysis Description: 903.1 Radium-226
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30582961001

METHOD BLANK: 2843307 Matrix: Water

Associated Lab Samples: 30582961001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.266 ± 0.302 (0.477) C:NA T:91%	pCi/L	05/17/23 14:07	

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

**REPORT OF LABORATORY ANALYSIS**

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: 3043159  
 Pace Project No.: 30582961

---

QC Batch: 585436	Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0	Analysis Description: 904.0 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30582961001

---

METHOD BLANK: 2843322 Matrix: Water

Associated Lab Samples: 30582961001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.423 ± 0.344 (0.683) C:75% T:85%	pCi/L	05/11/23 12:59	

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

**REPORT OF LABORATORY ANALYSIS**

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## QUALIFIERS

Project: 3043159  
Pace Project No.: 30582961

---

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 3043159  
Pace Project No.: 30582961

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30582961001	3043159-01	EPA 903.1	585433		
30582961001	3043159-01	EPA 904.0	585436		
30582961001	3043159-01	Total Radium Calculation	589434		

### REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, LLC.

Chain of Custody



Workorder: 3043159

Workorder Name: MW-102 Wilson 092-0000

Owner Received Date: 4/26/2023

Results Requested By: Standard

Report To: Subcontract To: Requested Analysis

Pace Analytical Services, LLC  
 825 Industrial Road  
 Madisonville, KY 42409  
 270-821-7375  
 rob.whittington@pacelabs.com

Pace Analytical Services LLC Greensburg PA  
 1638 Rosey Town Rd Suite 2,3,4  
 Greensburg, PA 15601  
 (724) 850-5615

WO#: 30582961

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers	EPA 904.0 Radium Sum Calc		LAB USE ONLY
							EPA 904.1	EPA 904.2	
1	3043159-01		04/25/23 08:24	R44-McCoy	Water		X	X	001
2									
3									
4									
5									
6									
7									
8									
9									
10									

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	Jessica Franklin	4/27/2023	<i>[Signature]</i>	4/27/23 09:40	
2					
3					

Cooler Temperature on Receipt: \_\_\_\_\_ °C Custody Seal Y or (N) \_\_\_\_\_ Received on loc Y or (N) \_\_\_\_\_ Sample Intact  or (N) \_\_\_\_\_

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



**SUBCONTRACT ORDER**  
**Pace Analytical Services, LLC Kentucky**  
**3043159**

**SENDING LABORATORY:**

Pace Analytical Services, LLC Kentucky  
 PO BOX 907  
 Madisonville, KY 42431  
 Phone: (270) 821-7375  
 Fax: 844-270-7904  
 Project Manager: Rob Whittington

**RECEIVING LABORATORY:**

Pace Analytical Services LLC Greensburg PA  
 1638 Rosey Town Rd Suite 2,3,4  
 Greensburg, PA 15601  
 Phone : (724) 850-5615  
 Fax:

Analysis	Expires	Laboratory ID	Comments
Sample ID: 3043159-01	Water	Sampled:04/25/2023 09:24	Specific Method
Radium Total (sub)	10/22/2023 09:24	EPA 904.0 Radium Sum C	
Radium 228 (sub)	10/22/2023 09:24	EPA 904.0 Radium Sum C	
Radium 226 (sub)	10/22/2023 09:24	EPA 903.1	

**WO# : 30582961**

PH: ADC      Due Date: 05/10/23  
 CLIENT: PACE\_44\_MKY

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_



DC# Title: ENV-FRM-GBUR-0088 v04 Sample Condition Upon Receipt-  
Pittsburgh

WO#: 30582961

Effective Date: 02/03/2023

PH: 60C

Due Date: 05/18/23

Client Name: Pace Madisonville

CLIENT: PACE\_44\_WVKY

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace  Other

Tracking Number: 7011

Examined By	<u>TH</u>
Labeled By	<u>TH</u>
Temped By	<u>/</u>

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

Thermometer Used: ✓ Type of Ice: Wet Blue (NOTE)

Cooler Temperature: Observed Temp          °C Correction Factor:          °C Final Temp:          °C  
Temp should be above freezing to 6°C

Comments:	Yes	No	NA	pH paper Lot#	D.P.D. Residual Chlorine Lot #
				<u>1007171</u>	<u>        </u>
Chain of Custody Present	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.	
Chain of Custody Filled Out: -Were client corrections present on COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.	
Chain of Custody Relinquished	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4.	
Sample Labels match COC: -Includes date/time/ID Matrix:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.	<u>No date/time on bottles.</u>
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.	
Short Hold Time Analysis (<72hr remaining):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.	
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.	
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.	
Correct Containers Used: -Pace Containers Used	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.	
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.	
Orthophosphate field filtered:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.	
Hex Cr Aqueous samples field filtered:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	13.	
Organic Samples checked for dechlorination	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.	
Filtered volume received for dissolved tests:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	15.	
All containers checked for preservation: exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16.	<u>Added 2.5ml of HNO3 to all bottles</u>
All containers meet method preservation requirements:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Initial when completed	Date/Time of Preservation
				<u>TH</u>	<u>5/11/23 15:10</u>
				Lot# of added Preservative	<u>HNO3 217007</u>
8260C/D: Headspace in VOA Vials (> 6mm)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	17.	
624.1: Headspace in VOA Vials (0mm)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	18.	
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Trip blank custody seal present? YES or NO	
Rad Samples Screened <0.5 mrem/hr.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed	Date: Survey Meter Ser:
				<u>TH</u>	<u>5/11/23</u> <u>(56)</u>
Comments:					

Note: For 14C compliance samples with discrepancies, a copy of this form must be sent to the DENNR Certification office. PH Review is documented electronically in LIMS through the SW Review schedule in the Workorder Edit Screen.

Client \_\_\_\_\_ Profile Number 11857  
 Site 3043154 Page 1 of 1  
 Notes \_\_\_\_\_

Sample Line Item	Amber Glass					Plastic					Vials					Other												
	AG1X	AG1H	AG3S	AG3U	AG3U	AG9T	BP1N	BP1U	BP2S	BP2U	BP3C	BP9N	BP1S	BP3U	DG8S	VG9H	VG9T	VG9U	VOAK	WGFU	WGKU	ZPLC	GCUB	GN	12GN	12GN	BP1U	
1	WT																											

WO#: 30582961

PH: ADC Due Date: 05/19/23  
 CLIENT: PAGE\_44\_MWY

Container Codes

Glass	
GN	1 Gallon Jug with HNO3
AG9U	100mL amber glass unpreserved
AG9T	100mL amber glass Na Titrosulfate
GN	1 Gallon Jug
AG1S	1L amber glass H2SO4
AG1H	1L amber glass HCl
AG1T	1L amber glass NA Titrosulfate
BG1U	1L clear glass unpreserved
AG3S	250mL amber glass H2SO4
AG3U	250mL amber glass unpreserved
DG8S	40mL amber VOA vial H2SO4
VG9U	40mL clear VDA vial
VG9T	40mL clear VDA vial Na Titrosulfate
VG9H	40mL clear VOA vial HCl
JGFU	4oz amber wide jar
WGFU	4oz wide jar unpreserved
BG2U	500mL clear glass unpreserved
AG2U	500mL amber glass unpreserved
WGKU	6oz wide jar unpreserved
GN	General

Plastic/Misc.	
GCUB	1 gallon cubitainer
12GN	1/2 gallon cubitainer
BP5T	120mL colliform Na Titrosulfate
BP1N	1L plastic HNO3
BP1U	1L plastic unpreserved
BP3S	250mL plastic H2SO4
BP3N	250mL plastic HNO3
BP3U	250mL plastic unpreserved
BP3C	250mL plastic NaOH
BP2S	500mL plastic H2SO4
BP2L	500mL plastic unpreserved
EZI	Eg Encore
VOAK	Kit Volatile Solid
I	Wipes/Swab
ZPLC	Siploc Bag
WT	Water
SL	Solid
OL	Non-Aq Liquid
WP	Wipe



May 19, 2023

Rob Whittington  
Pace Analytical Madisonville  
825 Industrial Rd  
Madisonville, KY 42431

RE: Project: 3043161  
Pace Project No.: 30582973

Dear Rob Whittington:

Enclosed are the analytical results for sample(s) received by the laboratory on April 28, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Greensburg

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

Sincerely,

Carla Cmar  
carla.cmar@pacelabs.com  
(724)850-5600  
Project Manager

Enclosures

cc: Doug Wolfe, Pace Analytical Madisonville



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: 3043161  
Pace Project No.: 30582973

---

### Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601  
ANAB DOD-ELAP Rad Accreditation #: L2417  
Alabama Certification #: 41590  
Arizona Certification #: AZ0734  
Arkansas Certification  
California Certification #: 04222CA  
Colorado Certification #: PA01547  
Connecticut Certification #: PH-0694  
Delaware Certification  
EPA Region 4 DW Rad  
Florida/TNI Certification #: E87683  
Georgia Certification #: C040  
Florida: Cert E871149 SEKS WET  
Guam Certification  
Hawaii Certification  
Idaho Certification  
Illinois Certification  
Indiana Certification  
Iowa Certification #: 391  
Kansas/TNI Certification #: E-10358  
Kentucky Certification #: KY90133  
KY WW Permit #: KY0098221  
KY WW Permit #: KY0000221  
Louisiana DHH/TNI Certification #: LA180012  
Louisiana DEQ/TNI Certification #: 4086  
Maine Certification #: 2017020  
Maryland Certification #: 308  
Massachusetts Certification #: M-PA1457  
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235  
Montana Certification #: Cert0082  
Nebraska Certification #: NE-OS-29-14  
Nevada Certification #: PA014572018-1  
New Hampshire/TNI Certification #: 297617  
New Jersey/TNI Certification #: PA051  
New Mexico Certification #: PA01457  
New York/TNI Certification #: 10888  
North Carolina Certification #: 42706  
North Dakota Certification #: R-190  
Ohio EPA Rad Approval: #41249  
Oregon/TNI Certification #: PA200002-010  
Pennsylvania/TNI Certification #: 65-00282  
Puerto Rico Certification #: PA01457  
Rhode Island Certification #: 65-00282  
South Dakota Certification  
Tennessee Certification #: 02867  
Texas/TNI Certification #: T104704188-17-3  
Utah/TNI Certification #: PA014572017-9  
USDA Soil Permit #: P330-17-00091  
Vermont Dept. of Health: ID# VT-0282  
Virgin Island/PADEP Certification  
Virginia/VELAP Certification #: 460198  
Washington Certification #: C868  
West Virginia DEP Certification #: 143  
West Virginia DHHR Certification #: 9964C  
Wisconsin Approve List for Rad  
Wyoming Certification #: 8TMS-L

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## REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: 3043161  
Pace Project No.: 30582973

---

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30582973001	3043161-01	Water	04/25/23 07:48	04/28/23 09:40

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 3043161  
Pace Project No.: 30582973

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30582973001	3043161-01	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

### REPORT OF LABORATORY ANALYSIS

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**ANALYTICAL RESULTS - RADIOCHEMISTRY**

Project: 3043161  
 Pace Project No.: 30582973

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: 3043161-01</b> <b>Lab ID: 30582973001</b> Collected: 04/25/23 07:48      Received: 04/28/23 09:40      Matrix: Water PWS:      Site ID:      Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	<b>1.10 ± 0.625 (0.777)</b> C:NA T:96%	pCi/L	05/17/23 14:20	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>1.39 ± 0.461 (0.585)</b> C:81% T:82%	pCi/L	05/11/23 13:01	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>2.49 ± 1.09 (1.36)</b>	pCi/L	05/19/23 14:57	7440-14-4	

**REPORT OF LABORATORY ANALYSIS**

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: 3043161  
 Pace Project No.: 30582973

QC Batch: 585433	Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1	Analysis Description: 903.1 Radium-226
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30582973001

METHOD BLANK: 2843307 Matrix: Water

Associated Lab Samples: 30582973001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.266 ± 0.302 (0.477) C:NA T:91%	pCi/L	05/17/23 14:07	

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

**REPORT OF LABORATORY ANALYSIS**

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: 3043161  
 Pace Project No.: 30582973

QC Batch: 585436	Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0	Analysis Description: 904.0 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30582973001

METHOD BLANK: 2843322 Matrix: Water

Associated Lab Samples: 30582973001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.423 ± 0.344 (0.683) C:75% T:85%	pCi/L	05/11/23 12:59	

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

**REPORT OF LABORATORY ANALYSIS**

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## QUALIFIERS

Project: 3043161  
Pace Project No.: 30582973

---

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, LLC.



### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 3043161  
Pace Project No.: 30582973

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30582973001	3043161-01	EPA 903.1	585433		
30582973001	3043161-01	EPA 904.0	585436		
30582973001	3043161-01	Total Radium Calculation	589434		

### REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, LLC.



Chain of Custody



Workorder: 3043161      Workorder Name: MW-1USR Wilson 092-000      Owner Received Date: 4/26/2023      Results Requested By: Standard

Report To: \_\_\_\_\_      Subcontract To: \_\_\_\_\_      Requested Analysis: \_\_\_\_\_

Pace Analytical Services, LLC  
 825 Industrial Road  
 Madisonville, KY 42409  
 270-821-7375  
 rob.whittington@pacelabs.com

Pace Analytical Services LLC Greensburg PA  
 1638 Rosey Town Rd Suite 2,3,4  
 Greensburg, PA 15601  
 (724) 850-5615

WO#: 30582973



Prepared Containers

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	EPA 903.1	EPA 904.0 Radium Sum Calc	LAB USE ONLY
1	3043161-01		04/26/2023 07:48	IR44-McCoy	Water	X	X	001
2								
3								
4								
5								
6								
7								
8								
9								
10								

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	Jessica Franklin	4/27/2023	<i>[Signature]</i>	4/28/23 8:48 AM	
2					
3					

Cooler Temperature on Receipt: \_\_\_\_\_ °C      Custody Seal Y or (N)      Received on Ice Y or (N)      Sample Intact Y or (N)

\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC

This chain of custody is considered complete as is since this information is available in the owner laboratory.

**SUBCONTRACT ORDER**

**Pace Analytical Services, LLC Kentucky**

**3043161**

**SENDING LABORATORY:**

Pace Analytical Services, LLC Kentucky

PO BOX 907

Madisonville, KY 42431

Phone: (270) 821-7375

Fax: 844-270-7904

Project Manager: Rob Whittington

**RECEIVING LABORATORY:**

Pace Analytical Services LLC Greensburg PA

1638 Rosey Town Rd Suite 2,3,4

Greensburg, PA 15601

Phone: (724) 650-5615

Fax:

Analysis	Expires	Laboratory ID	Comments
Sample ID: 3043161-01	Water	Sampled: 10/25/2023 07:48	Specific Method
Radium Total (sub)	10/22/2023 07:48	EPA 904.0 Radium Sum C	
Radium 228 (sub)	10/22/2023 07:48	EPA 904.0 Radium Sum C	
Radium 226 (sub)	10/22/2023 07:48	EPA 903.1	

**WO#: 30582973**  
PK: ADC      Due Date: 09/18/23  
CLIENT: PACE\_44\_KYKY

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_



DC#\_Title: ENV-FRM-GBUR-0088 v04\_Sample Condition Upon Receipt-  
Pittsburgh

WO#: 30582973

Effective Date: 02/03/2023

PN: ADC

Due Date: 05/19/23

Client Name: Pure Madenville

CLIENT: PACE\_44\_MKY

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace  Other

Tracking Number: 707A

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

Thermometer Used: \_\_\_\_\_ Type of Ice: Wet Blue (none)

Cooler Temperature: Observed Temp \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C  
Temp should be above freezing to 6°C

Examined By	TH
Labeled By	TH
Temped By	

Comments:

	Yes	No	NA	pH paper Lot#	D.P.D. Residual Chlorine Lot #
				1.003124	
Chain of Custody Present	✓			1.	
Chain of Custody Filled Out: -Were client corrections present on COC		✓		2.	
Chain of Custody Relinquished	✓			3.	
Sampler Name & Signature on COC:		✓		4.	
Sample Labels match COC: -Includes date/time/ID Matrix: <u>WT</u>		✓		5. No date/time on bottles.	
Samples Arrived within Hold Time	✓			6.	
Short Hold Time Analysis (<72hr remaining):		✓		7.	
Rush Turn Around Time Requested:	✓			8.	
Sufficient Volume:	✓			9.	
Correct Containers Used: -Pace Containers Used	✓			10.	
Containers Intact:	✓			11.	
Orthophosphate field filtered:			✓	12.	
Hex Cr Aqueous samples field filtered:			✓	13.	
Organic Samples checked for dechlorination			✓	14.	
Filtered volume received for dissolved tests:			✓	15.	
All containers checked for preservation: exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix	✓			16. Added 2.5ml of HNO <sub>3</sub> to all bottles	
All containers meet method preservation requirements:		✓		Initial when completed TH	Date/Time of Preservation 5/11/23 13:45
				Lot# of added Preservative HNO <sub>3</sub> 247007	
8260C/D: Headspace in VOA Vials (>6mm)			✓	17.	
624.1: Headspace in VOA Vials (0mm)			✓	18.	
Trip Blank Present:			✓	Trip blank custody seal present? YES or NO	
Rad Samples Screened <0.5 mrem/hr.	✓			Initial when completed TH	Date: 5/11/23 Survey Meter SN: 1563

Comments:

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

Client

Site

304361

Profile Number

1185

Notes

Page 1 of 1

Sample Line Item	Amber Glass					Plastic										Vials					Other							
	WTRK	AGTH	AGSS	AGSU	AGSU	AGST	BP1N	BP1U	BP2S	BP2U	BP3C	BP3N	BP3S	BP3U	DG9S	VG9H	VG9T	VG9U	VOAK	WG9U	WG9U	ZPLC	GCUB	GJN	12GN	GN	BG1U	
	WT																											

WO#: 30582973

Due Date: 05/18/23  
 PH: RDC  
 CLIENT: PACE\_04\_HWKY

Container Codes

Glass	
BUN	1 Gallon Jug with H2O3
AG6U	100mL amber glass unreserved
AG5T	100mL amber glass Na Thiosulfate
GJK	1 Gallon Jug
AG19	1L amber glass H2SO4
AG1H	1L amber glass HCl
AG1T	1L amber glass Na Thiosulfate
BG1U	1L clear glass unreserved
AG2S	250mL amber glass H2SO4
AG2U	250mL amber glass unreserved
GN	General

Plastic/Misc.	
GCUB	1 gallon cubitainer
12GN	1/2 gallon cubitainer
SP5T	120mL codiform Na Thiosulfate
BP1N	1L plastic HNO3
BP1U	1L plastic unreserved
BP9S	250mL plastic H2SO4
BP3N	250mL plastic HNO3
BP3U	250mL plastic unreserved
BP3C	250mL plastic NaOH
BP2S	500mL plastic H2SO4
BP2U	500mL plastic unreserved

EZJ	5g Encore
MOAK	KG Volatile Solid
I	WPK Swab
ZPLC	Seibic Bag
WT	W/der
SL	Solid
OL	Non-Aq Liquid
WP	W/ps



May 19, 2023

Rob Whittington  
Pace Analytical Madisonville  
825 Industrial Rd  
Madisonville, KY 42431

RE: Project: 3043163  
Pace Project No.: 30582997

Dear Rob Whittington:

Enclosed are the analytical results for sample(s) received by the laboratory on April 28, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Greensburg

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

Sincerely,

Carla Cmar  
carla.cmar@pacelabs.com  
(724)850-5600  
Project Manager

Enclosures

cc: Doug Wolfe, Pace Analytical Madisonville



## REPORT OF LABORATORY ANALYSIS

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

## CERTIFICATIONS

Project: 3043163  
Pace Project No.: 30582997

---

### **Pace Analytical Services Pennsylvania**

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Florida: Cert E871149 SEKS WET

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

---

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: 3043163  
Pace Project No.: 30582997

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30582997001	3043163-01	Water	04/25/23 08:25	04/28/23 09:40

### REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, LLC.



### SAMPLE ANALYTE COUNT

Project: 3043163  
Pace Project No.: 30582997

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30582997001	3043163-01	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 3043163  
 Pace Project No.: 30582997

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: 3043163-01</b> <b>Lab ID: 30582997001</b> Collected: 04/25/23 08:25      Received: 04/28/23 09:40      Matrix: Water PWS:      Site ID:      Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	<b>0.256 ± 0.562 (1.02)</b> C:NA T:90%	pCi/L	05/17/23 14:33	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>0.290 ± 0.383 (0.817)</b> C:76% T:78%	pCi/L	05/11/23 13:01	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>0.546 ± 0.945 (1.84)</b>	pCi/L	05/19/23 14:57	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: 3043163  
Pace Project No.: 30582997

---

QC Batch: 585433	Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1	Analysis Description: 903.1 Radium-226
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30582997001

---

METHOD BLANK: 2843307 Matrix: Water

Associated Lab Samples: 30582997001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.266 ± 0.302 (0.477) C:NA T:91%	pCi/L	05/17/23 14:07	

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

### REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: 3043163  
 Pace Project No.: 30582997

QC Batch: 585436	Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0	Analysis Description: 904.0 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30582997001

METHOD BLANK: 2843322 Matrix: Water

Associated Lab Samples: 30582997001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.423 ± 0.344 (0.683) C:75% T:85%	pCi/L	05/11/23 12:59	

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

**REPORT OF LABORATORY ANALYSIS**

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## QUALIFIERS

Project: 3043163  
Pace Project No.: 30582997

---

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

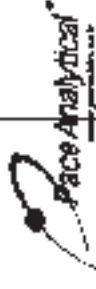
Project: 3043163  
Pace Project No.: 30582997

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30582997001	3043163-01	EPA 903.1	585433		
30582997001	3043163-01	EPA 904.0	585436		
30582997001	3043163-01	Total Radium Calculation	589434		

### REPORT OF LABORATORY ANALYSIS

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Chain of Custody



Workorder: 3043163

Workorder Name: MW-110 Wilson 092-0000 Owner Received Date: 4/26/2023

Results Requested By: Standard

Report To: Subcontract To:

Requested Analysis

Pace Analytical Services, LLC  
 825 Industrial Road  
 Madisonville, KY 42409  
 270-821-7375  
 rob.whittington@pacelabs.com

Pace Analytical Services LLC Greensburg P/ 1638 Rosey Town Rd Suite 2,3,4 Greensburg, PA 15601 (724) 850-5615

WON# : 30582997



Preserved Containers

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	EPA 903.1	EPA 904.0 Radium Sum Calc	LAB USE ONLY
1								
2	3043163-01		04/25/23 08:25	IR44-McCoy	Water	X	X	Col
3								
4								
5								
6								
7								
8								
9								
10								

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	Jessica Franklin	4/27/2023	<i>[Signature]</i>	4/28/23 8:40	
2					
3					

Cooler Temperature on Receipt \_\_\_\_\_ °C Custody Seal Y or (N) \_\_\_\_\_ Received on Ice Y or (N) \_\_\_\_\_ Sample Intact (Y) or (N) \_\_\_\_\_

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

**SUBCONTRACT ORDER**

**Pace Analytical Services, LLC Kentucky**

**3043163**

**SENDING LABORATORY:**

Pace Analytical Services, LLC Kentucky  
PO BOX 907  
Madisonville KY 42431  
Phone: (270) 821-7375  
Fax: 844-270-7904  
Project Manager: Rob Whittington

**RECEIVING LABORATORY:**

Pace Analytical Services LLC Greensburg PA  
1638 Rosey Town Rd Suite 2,3,4  
Greensburg, PA 15601  
Phone : (724) 850-5615  
Fax:

Analysis	Expires	Laboratory ID	Comments
Sample ID: 3043163-01	Water	Sampled: 04/25/2023 08:25	Specific Method
Radium Total (sub)	10/22/2023 08:25	EPA 904.0 Radium Sum C	
Radium 226 (sub)	10/22/2023 08:25	EPA 904.0 Radium Sum C	
Radium 226 (sub)	10/22/2023 08:25	EPA 903.1	

**WO# : 30582997**

PN: RDC

Due Date: 05/18/23

CLIENT: PRCE\_44\_MV KY

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_



DC# Title: ENV-FRM-GBUR-0088 v04\_Sample Condition Upon Receipt-  
Pittsburgh

WO#: 30582997

Effective Date: 02/03/2023

PN: ADC Due Date: 05/10/23

Client Name: Pace & Madisonville

CLIENT: PACE\_44\_MVKY

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace  Other

Tracking Number: 7001

Examined By	<u>TH</u>
Labeled By	<u>TH</u>
Tamped By	<u>---</u>

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

Thermometer Used: \_\_\_\_\_ Type of Ice: Wet Blue (None)

Cooler Temperature: Observed Temp \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C  
Temp should be above freezing to 6°C

Comments:				pH paper Lot#	D.P.O. Residual Chlorine Lot #
	Yes	No	NA	<u>1002121</u>	
Chain of Custody Present	<u>✓</u>				1
Chain of Custody Filled Out: -Were client corrections present on COC	<u>✓</u>				2
Chain of Custody Relinquished	<u>✓</u>				3
Sampler Name & Signature on COC					4
Sample labels match COC: -Includes date/time/ID Matrix	<u>✓</u>				5. <u>No date/time on bottles.</u>
Samples Arrived within Hold Time:	<u>✓</u>				6
Short Hold Time Analysis (<72hr remaining):					7
Rush Turn Around Time Requested:					8
Sufficient Volume:	<u>✓</u>				9
Correct Containers Used: -Pace Containers Used	<u>✓</u>				10
Containers Intact:	<u>✓</u>				11
Orthophosphate field filtered:					12
Hex Cr Aqueous samples field filtered:					13
Organic Samples checked for dechlorination					14
Filtered volume received for dissolved tests:					15
All containers checked for preservation: exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix	<u>✓</u>				16. <u>Added 2.5ml of HNO3 to all bottles</u>
All containers meet method preservation requirements:	<u>✓</u>	<u>✓</u>		Initial when completed <u>TH</u>	Date/Time of Preservation <u>5/11/23 14:10</u>
8260C/D: Headspace in VOA Vials (> 6mm)				Lot# of added Preservative	17
624.1: Headspace in VOA Vials (0mm)					18
Trip Blank Present:				Trip blank custody seal present? YES or NO	
Rad Samples Screened <0.5 stream/hr.	<u>✓</u>			Initial when completed <u>TH</u>	Date: <u>5/11/23</u> Survey Meter SN: <u>1066</u>
Comments:					

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





May 19, 2023

Rob Whittington  
Pace Analytical Madisonville  
825 Industrial Rd  
Madisonville, KY 42431

RE: Project: 3043167  
Pace Project No.: 30582962

Dear Rob Whittington:

Enclosed are the analytical results for sample(s) received by the laboratory on April 28, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Greensburg

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

Sincerely,

Carla Cmar  
carla.cmar@pacelabs.com  
(724)850-5600  
Project Manager

Enclosures

cc: Doug Wolfe, Pace Analytical Madisonville



## REPORT OF LABORATORY ANALYSIS

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



## CERTIFICATIONS

Project: 3043167  
Pace Project No.: 30582962

---

### **Pace Analytical Services Pennsylvania**

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Florida: Cert E871149 SEKS WET

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

---

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: 3043167  
Pace Project No.: 30582962

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30582962001	3043167-01	Water	04/25/23 08:40	04/28/23 09:40

### REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, LLC.



### SAMPLE ANALYTE COUNT

Project: 3043167  
Pace Project No.: 30582962

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30582962001	3043167-01	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 3043167  
 Pace Project No.: 30582962

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: 3043167-01</b> <b>Lab ID: 30582962001</b> Collected: 04/25/23 08:40      Received: 04/28/23 09:40      Matrix: Water PWS:      Site ID:      Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.773 ± 0.625 (0.909)</b> C:NA T:89%	pCi/L	05/17/23 14:07	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.942 ± 0.397 (0.616)</b> C:78% T:86%	pCi/L	05/11/23 13:01	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	<b>1.72 ± 1.02 (1.53)</b>	pCi/L	05/19/23 14:57	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: 3043167  
 Pace Project No.: 30582962

---

QC Batch: 585433	Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1	Analysis Description: 903.1 Radium-226
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30582962001

---

METHOD BLANK: 2843307 Matrix: Water

Associated Lab Samples: 30582962001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.266 ± 0.302 (0.477) C:NA T:91%	pCi/L	05/17/23 14:07	

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

### REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: 3043167  
 Pace Project No.: 30582962

---

QC Batch: 585436	Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0	Analysis Description: 904.0 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30582962001

---

METHOD BLANK: 2843322 Matrix: Water  
 Associated Lab Samples: 30582962001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.423 ± 0.344 (0.683) C:75% T:85%	pCi/L	05/11/23 12:59	

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

**REPORT OF LABORATORY ANALYSIS**

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## QUALIFIERS

Project: 3043167  
Pace Project No.: 30582962

---

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 3043167  
Pace Project No.: 30582962

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30582962001	3043167-01	EPA 903.1	585433		
30582962001	3043167-01	EPA 904.0	585436		
30582962001	3043167-01	Total Radium Calculation	589434		

### REPORT OF LABORATORY ANALYSIS

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**SUBCONTRACT ORDER**

**Pace Analytical Services, LLC Kentucky  
3043167**

**SENDING LABORATORY:**

Pace Analytical Services, LLC Kentucky  
PO BOX 907  
Madisonville, KY 42431  
Phone: (270) 821-7375  
Fax: 844-270-7904  
Project Manager: Rob Whittington

**RECEIVING LABORATORY:**

Pace Analytical Services LLC Greensburg PA  
1638 Rosey Town Rd Suite 2,3,4  
Greensburg, PA 15601  
Phone: (724) 850-5615  
Fax:

<u>Analyte</u>	<u>Expires</u>	<u>Laboratory ID</u>	<u>Comments</u>
<u>Sample ID: 3043167-01</u>	<u>Water</u>	<u>Sampled:04/25/2023 08:40</u>	<u>Specific Method</u>
Radium Total (sub)	10/22/2023 08:40	EPA 904.0 Radium Sum C	
Radium 228 (sub)	10/22/2023 08:40	EPA 904.0 Radium Sum C	
Radium 226 (sub)	10/22/2023 08:40	EPA 903.1	

**WO# : 30582962**

**PH: ADC      Due Date: 05/18/23  
CLIENT: PACE\_44\_RVKY**

<u>Released By</u>	<u>Date</u>	<u>Received By</u>	<u>Date</u>



DC# Title: ENV-FRM-GBUR-0088 v04 Sample Condition Upon Receipt-  
Pittsburgh

WO#: 30582962

Effective Date: 02/09/2023

PH: ADC

Due Date: 05/18/23

Client Name: Face Madisonville

CLIENT: FACE\_44\_NYKY

Courier:  Fed Ex  UMS  USPS  Client  Commercial  Pace  Other

Tracking Number: 7071

Examined By TD

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

Labeled By TD

Thermometer Used: \_\_\_\_\_ Type of Ice: Wet Blue (None)

Temped By \_\_\_\_\_

Cooler Temperature: Observed Temp \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to 5°C

Comments:

	Yes	No	NA	pH paper Lot# <u>100321</u>	D.P.O. Residual Chlorine Lot # _____
Chain of Custody Present	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.	
Chain of Custody Filled Out -Were client corrections present on COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.	
Chain of Custody Fulfilled	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. <u>TD 5/1/23</u>	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4. <u>TD</u>	
Sample Labels match COC: -Includes date/time/ID Matrix.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5. <u>No detel line on bottles.</u>	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.	
Short Hold Time Analysis (<72hr remaining):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.	
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.	
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.	
Correct Containers Used: -Pace Containers Used	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.	
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.	<u>TD 6/1/23</u>
Orthophosphate field filtered:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.	
Hex Cr Aqueous samples field filtered:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	13.	
Organic Samples checked for dechlorination	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.	
Filtered volume received for dissolved tests:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.	
All containers checked for preservation: exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16.	<u>Added 50 ml of HNO3 to all bottles</u>
All containers meet method preservation requirements:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Initial when completed <u>TD</u>	Date/Time of Preservation <u>5/1/23 13:00</u>
B260C/D: Headspace in VOA Vials (> 6mm)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Lot# of added Preservative <u>HNO3 217007</u>	
B24.1: Headspace in VOA Vials (0mm)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	17.	
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	18.	
Rad Samples Screened <0.5 rrem/yr.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Trip blank custody seal present? YES or NO	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed <u>TD</u>	Date: <u>5/1/23</u> Survey Meter SN: <u>1663</u>

Comments:

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

Client: \_\_\_\_\_ Profile Number: 11857  
 Site: 3042167 Page 1 of 1  
 Notes: \_\_\_\_\_

Sample Line Item	Amber Glass					Plastic										Vials					Other								
	AG1H	AG3S	AG3U	AG6U	AG6T	BP1N	BP1U	BP2S	BP2U	BP3C	BP3H	BP3S	BP3U	DG9S	VG9H	VG9T	VO9U	VOAK	WG9U	WG9U	ZPLC	GCUB	GJN	12GN	GN	BO1U			



May 19, 2023

Rob Whittington  
Pace Analytical Madisonville  
825 Industrial Rd  
Madisonville, KY 42431

RE: Project: 3043171  
Pace Project No.: 30582992

Dear Rob Whittington:

Enclosed are the analytical results for sample(s) received by the laboratory on April 28, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Greensburg

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

Sincerely,



Carla Cmar  
carla.cmar@pacelabs.com  
(724)850-5600  
Project Manager

Enclosures

cc: Doug Wolfe, Pace Analytical Madisonville



## REPORT OF LABORATORY ANALYSIS

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### CERTIFICATIONS

Project: 3043171  
Pace Project No.: 30582992

---

#### Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601  
ANAB DOD-ELAP Rad Accreditation #: L2417  
Alabama Certification #: 41590  
Arizona Certification #: AZ0734  
Arkansas Certification  
California Certification #: 04222CA  
Colorado Certification #: PA01547  
Connecticut Certification #: PH-0694  
Delaware Certification  
EPA Region 4 DW Rad  
Florida/TNI Certification #: E87683  
Georgia Certification #: C040  
Florida: Cert E871149 SEKS WET  
Guam Certification  
Hawaii Certification  
Idaho Certification  
Illinois Certification  
Indiana Certification  
Iowa Certification #: 391  
Kansas/TNI Certification #: E-10358  
Kentucky Certification #: KY90133  
KY WW Permit #: KY0098221  
KY WW Permit #: KY0000221  
Louisiana DHH/TNI Certification #: LA180012  
Louisiana DEQ/TNI Certification #: 4086  
Maine Certification #: 2017020  
Maryland Certification #: 308  
Massachusetts Certification #: M-PA1457  
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235  
Montana Certification #: Cert0082  
Nebraska Certification #: NE-OS-29-14  
Nevada Certification #: PA014572018-1  
New Hampshire/TNI Certification #: 297617  
New Jersey/TNI Certification #: PA051  
New Mexico Certification #: PA01457  
New York/TNI Certification #: 10888  
North Carolina Certification #: 42706  
North Dakota Certification #: R-190  
Ohio EPA Rad Approval: #41249  
Oregon/TNI Certification #: PA200002-010  
Pennsylvania/TNI Certification #: 65-00282  
Puerto Rico Certification #: PA01457  
Rhode Island Certification #: 65-00282  
South Dakota Certification  
Tennessee Certification #: 02867  
Texas/TNI Certification #: T104704188-17-3  
Utah/TNI Certification #: PA014572017-9  
USDA Soil Permit #: P330-17-00091  
Vermont Dept. of Health: ID# VT-0282  
Virgin Island/PADEP Certification  
Virginia/VELAP Certification #: 460198  
Washington Certification #: C868  
West Virginia DEP Certification #: 143  
West Virginia DHHR Certification #: 9964C  
Wisconsin Approve List for Rad  
Wyoming Certification #: 8TMS-L

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### REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: 3043171  
Pace Project No.: 30582992

---

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30582992001	3043171-01	Water	04/26/23 10:10	04/28/23 09:40

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 3043171  
Pace Project No.: 30582992

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30582992001	3043171-01	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

### REPORT OF LABORATORY ANALYSIS

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**ANALYTICAL RESULTS - RADIOCHEMISTRY**

Project: 3043171  
 Pace Project No.: 30582992

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: 3043171-01</b> <b>Lab ID: 30582992001</b> Collected: 04/26/23 10:10      Received: 04/28/23 09:40      Matrix: Water PWS:      Site ID:      Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	<b>0.337 ± 0.442 (0.736)</b> C:NA T:95%	pCi/L	05/17/23 14:20	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>0.878 ± 0.410 (0.698)</b> C:81% T:85%	pCi/L	05/11/23 13:01	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>1.22 ± 0.852 (1.43)</b>	pCi/L	05/19/23 14:57	7440-14-4	

**REPORT OF LABORATORY ANALYSIS**

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: 3043171  
 Pace Project No.: 30582992

QC Batch: 585433	Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1	Analysis Description: 903.1 Radium-226
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30582992001

METHOD BLANK: 2843307 Matrix: Water

Associated Lab Samples: 30582992001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.266 ± 0.302 (0.477) C:NA T:91%	pCi/L	05/17/23 14:07	

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

**REPORT OF LABORATORY ANALYSIS**

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: 3043171  
Pace Project No.: 30582992

---

QC Batch: 585436	Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0	Analysis Description: 904.0 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30582992001

---

METHOD BLANK: 2843322 Matrix: Water

Associated Lab Samples: 30582992001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.423 ± 0.344 (0.683) C:75% T:85%	pCi/L	05/11/23 12:59	

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

### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: 3043171  
Pace Project No.: 30582992

---

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 3043171  
Pace Project No.: 30582992

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30582992001	3043171-01	EPA 903.1	585433		
30582992001	3043171-01	EPA 904.0	585436		
30582992001	3043171-01	Total Radium Calculation	589434		

### REPORT OF LABORATORY ANALYSIS

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Chain of Custody



Workorder: 3043171

Workorder Name: MW-4D Wilson 092-00004 Owner Received Date: 4/26/2023

Results Requested By: Standard

Report To: Subcontract To: Requested Analysis

Pace Analytical Services, LLC  
 825 Industrial Road  
 Madisonville, KY 42409  
 270-821-7375  
 rob.whittington@pacelabs.com

Pace Analytical Services LLC Greensburg P/ 1638 Rosey Town Rd Suite 2,3,4 Greensburg, PA 15601 (724) 850-5615

WO#: 30582992

30582992

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers		LAB USE ONLY	
1	3043171-01		04/26/23 10:10	IR44-McCoy	Water				
2									
3									
4									
5									
6									
7									
8									
9									
10									
Transfers Released By		Date/Time		Received By		Date/Time		Comments	
1		Jessica Franklin		4/27/2023					
2									
3									

Cooler Temperature on Receipt \_\_\_\_\_ °C Custody Seal Y or (N) Received on Ice Y or (N) Sample Intact (Y) or (N)

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

**SUBCONTRACT ORDER**  
**Pace Analytical Services, LLC Kentucky**  
**3043171**

**SENDING LABORATORY:**

Pace Analytical Services, LLC Kentucky  
 PO BOX 907  
 Madisonville, KY 42431  
 Phone: (270) 821-7375  
 Fax: 844-270-7904  
 Project Manager: Rob Whittington

**RECEIVING LABORATORY:**

Pace Analytical Services LLC Greensburg PA  
 1638 Rosey Town Rd Suite 2,3,4  
 Greensburg, PA 15601  
 Phone: (724) 850-5615  
 Fax:

Analysis	Expires	Laboratory ID	Comments
Sample ID: 3043171-01	Water	Sampled: 04/26/2023 10:10	Specific Method
Radium Total (sub)	10/23/2023 10:10	EPA 904.C Radium Sum C	
Radium 228 (sub)	10/23/2023 10:10	EPA 904.C Radium Sum C	
Radium 226 (sub)	10/23/2023 10:10	EPA 903.1	

**WO# : 30582992**

PR: ADC      Due Date: 05/19/23  
 CLIENT: PACE\_44\_KYKY

Released By	Date	Received By	Date



DC# Title: ENV-FRM-GBUR-0088 v04\_S  
Pittsburgh

Lab Receipt  
WO#: 30582992

PH: ADC Due Date: 05/19/23  
CLIENT: PACE\_44\_NVKY

Effective Date: 02/03/2023

Client Name: Pace Missionville

Courier:  Fed Ex  UPS  USPS  Gaert  Commercial  Pace  Other

Tracking Number: 7001

Examined By: PH  
Labeled By: PH  
Tamped By: ---

Custody Seal on Cooler/Box Present:  Yes  No Seal Intact:  Yes  No

Thermometer Used: --- Type of Ice: Wet Blue None

Cooler Temperature: Observed Temp --- °C Correction Factor: --- °C Fine Temp: --- °C

Temp should be above freezing to 5°C

Comments:	Yes	No	NA	pH paper Lot#	D.P.O. Residual Chlorine Lot #
				180314	---
Chain of Custody Present	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.	
Chain of Custody Filled Out: -Were client corrections present on COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.	
Chain of Custody Relinquished	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.	
Sampler Name & Signature on COC:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4.	
Sample Labels match COC: -Includes date/time/ID Match: <u>PH</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.	<u>No label time on bottles.</u>
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.	
Short Hold Time Analysis (<72hr remaining):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.	
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.	
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.	
Correct Containers Used: -Pace Containers Used	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.	
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.	
Orthophosphate field filtered:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.	
Hex Cr Aqueous samples field filtered:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	13.	
Organic Samples checked for decoloration	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.	
Filtered volume received for dissolved tests:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.	
All containers checked for preservation: exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16.	<u>labeled 5.0ml of H<sub>2</sub>O to all bottles</u>
All containers meet method preservation requirements:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Initial when completed: <u>PH</u>	Date/Time of Preservation: <u>14:05</u>
Lot# of added Preservative					
#280C/D: Headspace in VOA Vials (> 6mm)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	17.	
#281.1: Headspace in VOA Vials (0mm)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	18.	
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Trip blank custody seal present? YES or NO	
Rad Samples Screened <0.5 mrem/hr.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed: <u>PH</u>	Survey Meter SN: <u>5112</u>
Comments:					

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







May 19, 2023

Rob Whittington  
Pace Analytical Madisonville  
825 Industrial Rd  
Madisonville, KY 42431

RE: Project: 3043172  
Pace Project No.: 30582995

Dear Rob Whittington:

Enclosed are the analytical results for sample(s) received by the laboratory on April 28, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Greensburg

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

Sincerely,

Carla Cmar  
carla.cmar@pacelabs.com  
(724)850-5600  
Project Manager

Enclosures

cc: Doug Wolfe, Pace Analytical Madisonville



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: 3043172

Pace Project No.: 30582995

---

### **Pace Analytical Services Pennsylvania**

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Florida: Cert E871149 SEKS WET

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

---

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: 3043172  
Pace Project No.: 30582995

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30582995001	3043172-01	Water	04/25/23 11:20	04/28/23 09:40

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 3043172  
Pace Project No.: 30582995

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30582995001	3043172-01	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 3043172  
Pace Project No.: 30582995

Sample: 3043172-01 Lab ID: 30582995001 Collected: 04/25/23 11:20 Received: 04/28/23 09:40 Matrix: Water  
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	<b>0.227 ± 0.445 (0.800)</b> C:NA T:98%	pCi/L	05/17/23 14:33	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>0.810 ± 0.364 (0.591)</b> C:81% T:89%	pCi/L	05/11/23 13:01	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>1.04 ± 0.809 (1.39)</b>	pCi/L	05/19/23 14:57	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: 3043172  
 Pace Project No.: 30582995

QC Batch: 585433	Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1	Analysis Description: 903.1 Radium-226
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30582995001

METHOD BLANK: 2843307 Matrix: Water

Associated Lab Samples: 30582995001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.266 ± 0.302 (0.477) C:NA T:91%	pCi/L	05/17/23 14:07	

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

**REPORT OF LABORATORY ANALYSIS**

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: 3043172  
Pace Project No.: 30582995

---

QC Batch: 585436	Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0	Analysis Description: 904.0 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30582995001

---

METHOD BLANK: 2843322 Matrix: Water

Associated Lab Samples: 30582995001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.423 ± 0.344 (0.683) C:75% T:85%	pCi/L	05/11/23 12:59	

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

### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: 3043172  
Pace Project No.: 30582995

---

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 3043172  
Pace Project No.: 30582995

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30582995001	3043172-01	EPA 903.1	585433		
30582995001	3043172-01	EPA 904.0	585436		
30582995001	3043172-01	Total Radium Calculation	589434		

### REPORT OF LABORATORY ANALYSIS

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Chain of Custody



Workorder: 3043172

Workorder Name: MW-S Wilson 092-00004

Owner Received Date: 4/26/2023

Results Requested By: Standard

Report To:

Subcontract To:

Requested Analysis:

Pace Analytical Services, LLC  
 825 Industrial Road  
 Madisonville, KY 42409  
 270-821-7375  
 rob.whittington@pacelabs.com

Pace Analytical Services LLC Greensburg P/ 1638 Rosey Town Rd Suite 2,3,4 Greensburg, PA 15601 (724) 850-5615

WO#: 30582995  
 PACE ANALYTICAL SERVICES  
 30582995

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers		LAB USE ONLY
1								
2	3043172-01		04/25/23 11:20	IR44-McCoy	Water			EPA 903.1 X EPA 904.0 Radium Sum Calc X
3								
4								
5								
6								
7								
8								
9								
10								

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	Kayla Zachary	4/27/2023			
2					
3					

Cooler Temperature on Receipt \_\_\_\_\_ °C Custody Seal Y or (N) \_\_\_\_\_ Received on Ice Y or (N) \_\_\_\_\_ Sample Intact Y or N \_\_\_\_\_

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

Friday, June 17, 2016 11:01:34 AM

FMT-ALL-C-002 rev.00 24March2009

Page 1 of 1

**SUBCONTRACT ORDER**

**Pace Analytical Services, LLC Kentucky**

**3043172**

**SENDING LABORATORY:**

Pace Analytical Services, LLC Kentucky  
PO BOX 907  
Madisonville, KY 42431  
Phone: (270) 821-7375  
Fax: 844-270-7904  
Project Manager: Rob Whittington

**RECEIVING LABORATORY:**

Pace Analytical Services LLC Greensburg PA  
1638 Russey Town Rd Suite 2,3,4  
Greensburg, PA 15601  
Phone: (724) 850-5615  
Fax:

Analysis	Expires	Laboratory ID	Comments
Sample ID: 3043172-01	Water	Sampled: 10/25/2023 11:20	Specific Method
Radium Total (sub)	10/22/2023 11:20	EPA 904.0 Radium Sum C	
Radium 228 (sub)	10/22/2023 11:20	EPA 904.0 Radium Sum C	
Radium 226 (sub)	10/22/2023 11:20	EPA 903.1	

**WO# : 30582995**

PH: RDC      Due Date: 05/18/23  
CLIENT: PACE\_44\_WKY

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_



DC# Title: ENV-FRMFGBUR-0088 v04\_Sample Condition upon Receipt-  
Pittsburgh

WO#: 30582995

Effective Date: 02/09/2023

PI: ADC

Due Date: 05/19/23

Client Name: Pace Marietta

CLIENT: PACE\_44\_MVNY

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace  Other

Tracking Number: 160A

Examined By	<u>RL</u>
Labeled By	<u>RL</u>
Temped By	<u>-</u>

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

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

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

Temp should be above freezing in °C

Comments:	Yes	No	NA	pH paper Lot#	D.P.D. Residual Chlorine Lot #
				<u>100211</u>	<u>-</u>
Chain of Custody Present	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	
Chain of Custody Filled Out: -Were client corrections present on COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2	
Chain of Custody Relinquished	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3	
Sampler Name & Signature on COC:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4	
Sample Labels match COC: -Includes date/time/ID Matrix: <u>WWT</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5. <u>No date/time on bottles.</u>	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6	
Short Hold Time Analysis (<72hr remaining):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7	
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8	
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9	
Correct Containers Used: -Pace Containers Used	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10	
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11	
Orthophosphate field filtered:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12	
Hex Cr Aqueous samples field filtered:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	13	
Organic Samples checked for dechlorination	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14	
Filtered volume received for dissolved tests:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15	
All containers checked for preservation: exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16. <u>Added 5.0 ml of HNO3 to all bottles.</u>	
All containers meet method preservation requirements:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Initial when completed: <u>RL</u>	Date/Time of Preservation: <u>5/11/23 14:20</u>
				Lot# of added Preservative: <u>HNO3 212007</u>	
8260C/D: Headspace in VOA Vials (> 6mm)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	17	
624.1: Headspace in VOA Vials (0mm)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	18	
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Trip blank custody seal present? YES or NO	
Rad Samples Screened <0.5 mrem/hr.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed: <u>RL</u>	Date: <u>5/11/23</u> Survey Meter SN: <u>1663</u>
Comments:					

Note: For MC compliance projects with discrepancies, a copy of this form must be sent to the O&G Certification office. For review is documented electronically in UITS through the SRF Review schedule in the Workorder Edit Screen.

Client

Site

3043172

Profile Number

11851

Notes

Page 1 of 1

Sample Line Item	Amber Glass					Plastic					Viials					Other										
	AG1H	AG3S	AG3U	AG5U	AG5T	BP1U	BP2S	BP2U	BP3C	BP3N	BP3S	BP3U	DG9S	VG9H	VG9T	VG9U	VOAK	WG1U	WG1U	ZPLC	GCUB	GN	12GN	13GN	14GN	
1																										

WO#: 30582995

PM: RDC

Due Date: 05/19/23

CLIENT: PAGE\_44\_MWY

Container Codes

### Glass

Code	Description
GGJN	1 Gallon Jug with HNO3
AG2U	100mL amber glass unpreserved
AG5T	100mL amber glass Na Thiosulfate
GGJN	1 Gallon Jug
AG1S	1L amber glass H2SO4
AG1H	1L amber glass HCl
AG1T	1L amber glass Na Thiosulfate
AG1U	1L clear glass unpreserved
AG1S	250mL amber glass H2SO4
AG3U	250mL amber glass unpreserved
DG9S	40mL amber VOA vial H2SO4
VG9U	40mL clear VOA vial
VG9T	40mL clear VOA vial Na Thiosulfate
VG9H	40mL clear VOA vial HCl
JG1U	4oz amber wide jar
WG1U	4oz white jar unpreserved
BG2U	500mL clear glass unpreserved
AG2U	500mL amber glass unpreserved
WG1U	8oz white jar unpreserved
GN	General

### Plastic/Mlec.

Code	Description
GCUB	1 gallon cubitainer
12GN	1/2 gallon cubitainer
SP5T	120mL coborn Na Thiosulfate
BP1N	1L plastic HNO3
BP1U	1L plastic unpreserved
BP9S	250mL plastic H2SO4
BP9N	250mL plastic HNO3
BP3U	250mL plastic unpreserved
BP3C	250mL plastic NaOH
BP2S	500mL plastic H2SO4
BP2U	500mL plastic unpreserved

Code	Description
EZJ	Eg Encore
VOAK	KV Volatile Solnt
WIP1	Wipe/Swab
ZPIC	Siphic Bag
WT	Waler
SL	Sollh
OL	Mont-Ag Liquid
WIP	Wipe



May 19, 2023

Rob Whittington  
Pace Analytical Madisonville  
825 Industrial Rd  
Madisonville, KY 42431

RE: Project: 3043173  
Pace Project No.: 30583004

Dear Rob Whittington:

Enclosed are the analytical results for sample(s) received by the laboratory on April 28, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Greensburg

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

Sincerely,

Carla Cmar  
carla.cmar@pacelabs.com  
(724)850-5600  
Project Manager

Enclosures

cc: Doug Wolfe, Pace Analytical Madisonville



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: 3043173

Pace Project No.: 30583004

---

### **Pace Analytical Services Pennsylvania**

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Florida: Cert E871149 SEKS WET

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

---

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: 3043173  
Pace Project No.: 30583004

---

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30583004001	3043173-01	Water	04/25/23 13:00	04/28/23 09:40

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 3043173  
Pace Project No.: 30583004

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30583004001	3043173-01	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

### REPORT OF LABORATORY ANALYSIS

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**ANALYTICAL RESULTS - RADIOCHEMISTRY**

Project: 3043173  
 Pace Project No.: 30583004

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: 3043173-01</b> <b>Lab ID: 30583004001</b> Collected: 04/25/23 13:00      Received: 04/28/23 09:40      Matrix: Water PWS:      Site ID:      Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	<b>0.602 ± 0.575 (0.876)</b> C:NA T:97%	pCi/L	05/17/23 14:33	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>1.04 ± 0.433 (0.706)</b> C:79% T:92%	pCi/L	05/11/23 13:02	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>1.64 ± 1.01 (1.58)</b>	pCi/L	05/19/23 14:57	7440-14-4	

**REPORT OF LABORATORY ANALYSIS**

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: 3043173  
Pace Project No.: 30583004

---

QC Batch: 585433	Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1	Analysis Description: 903.1 Radium-226
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30583004001

---

METHOD BLANK: 2843307 Matrix: Water

Associated Lab Samples: 30583004001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.266 ± 0.302 (0.477) C:NA T:91%	pCi/L	05/17/23 14:07	

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: 3043173  
Pace Project No.: 30583004

---

QC Batch: 585436	Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0	Analysis Description: 904.0 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30583004001

---

METHOD BLANK: 2843322 Matrix: Water

Associated Lab Samples: 30583004001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.423 ± 0.344 (0.683) C:75% T:85%	pCi/L	05/11/23 12:59	

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## QUALIFIERS

Project: 3043173  
Pace Project No.: 30583004

---

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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TNI - The NELAC Institute.

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

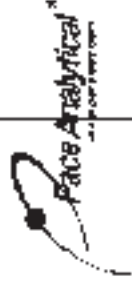
Project: 3043173  
Pace Project No.: 30583004

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30583004001	3043173-01	EPA 903.1	585433		
30583004001	3043173-01	EPA 904.0	585436		
30583004001	3043173-01	Total Radium Calculation	589434		

### REPORT OF LABORATORY ANALYSIS

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Chain of Custody



Workorder: 3043173      Workorder Name: MW-6 Wilson 092-00004      Owner Received Date: 4/26/2023      Results Requested By: Standard

Report To: Subcontract To:

Requested Analysis

Pace Analytical Services, LLC  
 825 Industrial Road  
 Madisonville, KY 42409  
 270-821-7375  
 rob.whittington@pace-labs.com

Pace Analytical Services LLC Greensburg P/ 1638 Rosey Town Rd Suite 2,3,4 Greensburg, PA 15601 (724) 850-5615

EPA 904.0 Radium Summ Calc

WO#: 30583004



Preserve Containers

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	LAB USE ONLY
1						
2	3043173-01		04/25/23 13:00	IR4A-McCoy	Water	
3						
4						
5						
6						
7						
8						
9						
10						

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	Jessica Franklin	4/27/2023	<i>[Signature]</i>		
2					
3					

Cooler Temperature on Receipt: \_\_\_\_\_ °C      Custody Seal Y or (N) \_\_\_\_\_      Received on Ice Y or (N) \_\_\_\_\_      Sample Intact (Y or N) \_\_\_\_\_

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC

This chain of custody is considered complete as is since this information is available in the owner laboratory.

**SUBCONTRACT ORDER**

**Pace Analytical Services, LLC Kentucky  
3043173**

**SENDING LABORATORY:**

Pace Analytical Services, LLC Kentucky  
PO BOX 907  
Madisonville, KY 42431  
Phone: (270) 821-1375  
Fax: 844-270-7904  
Project Manager: Rob Whittington

**RECEIVING LABORATORY:**

Pace Analytical Services LLC Greensburg PA  
1638 Rosey Town Rd Suite 2,3,4  
Greensburg, PA 15601  
Phone (724) 850-5615  
Fax:

Analysis	Expires	Laboratory ID	Comments
Sample ID: 3043173-01	Water	Sampled 10/25/2023 13:00	Specific Method
Radium Total (sub)	10/22/2023 13:00	EPA 904.0 Radium Sum C	
Radium 228 (sub)	10/22/2023 13:00	EPA 904.0 Radium Sum C	
Radium 226 (sub)	10/22/2023 13:00	EPA 903.1	

**WO# : 30583004**

**PI: ADC      Due Date: 05/19/23  
CLIENT: PAGE\_44\_MVKY**

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_



DC# Title: ENV-FRM-GBUR-0088 V04\_Sample Continuation upon Receipt-  
Pittsburgh

WO#: 30583004

Effective Date: 02/03/2023

PR: ADC

Due Date: 05/19/23

Client Name: Pace Madisonville

CLIENT: PACE\_44\_MKY

Carrier:  Fed Ex  UPS  USPS  Client  Commercial  Pace  Other

Tracking Number: 107A

Examined By	<u>M</u>
Labeled By	<u>M</u>
Temped By	<u>-</u>

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

Thermometer Used: - Type of Ice: Wet Blue ROTE

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

Temp should be above freezing to 6°C

Comments:	pH paper Lot#			D.S.D. Residual Chlorine Lot #								
	Yes	No	NA									
Chain of Custody Present	<input checked="" type="checkbox"/>			1. <u>1073121</u>								
Chain of Custody Filled Out: -Were client corrections present on COC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		2.								
Chain of Custody Relinquished	<input checked="" type="checkbox"/>			3.								
Sampler Name & Signature on COC		<input checked="" type="checkbox"/>		4.								
Sample Labels match COC -Includes date/time/ID Matrix: <u>WT</u>		<input checked="" type="checkbox"/>		5. <u>No duplicate on bottles.</u>								
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>			6.								
Short Hold Time Analysis (<72hr remaining):		<input checked="" type="checkbox"/>		7.								
Rush Turn Around Time Requested:		<input checked="" type="checkbox"/>		8.								
Sufficient Volume:	<input checked="" type="checkbox"/>			9.								
Correct Containers Used: -Pace Containers Used	<input checked="" type="checkbox"/>			10.								
Containers Intact:	<input checked="" type="checkbox"/>			11.								
Orthophosphate field filtered:			<input checked="" type="checkbox"/>	12.								
Hex Or Aqueous samples field filtered:			<input checked="" type="checkbox"/>	13.								
Organic Samples checked for dechlorination			<input checked="" type="checkbox"/>	14.								
Filtered volume received for dissolved tests:	<input checked="" type="checkbox"/>			15.								
All containers checked for preservation: exceptions: VOA, coliform, TOC, C&G, Phenols, Radon, non-aqueous matrix	<input checked="" type="checkbox"/>			16. <u>Added 5.0 ml of HCl to all bottles.</u>								
All containers meet method preservation requirements:		<input checked="" type="checkbox"/>		<table border="1"> <tr> <td>Initial when completed</td> <td><u>M</u></td> <td>Date/Time of Preservation</td> <td><u>5/16/23 15:10</u></td> </tr> <tr> <td>Lot# of added Preservative</td> <td colspan="3"><u>Miles 217007</u></td> </tr> </table>	Initial when completed	<u>M</u>	Date/Time of Preservation	<u>5/16/23 15:10</u>	Lot# of added Preservative	<u>Miles 217007</u>		
Initial when completed	<u>M</u>	Date/Time of Preservation	<u>5/16/23 15:10</u>									
Lot# of added Preservative	<u>Miles 217007</u>											
8260C/D: Headspace in VOA Vials (> 6mm)			<input checked="" type="checkbox"/>	17.								
824.1: Headspace in VOA Vials (0mm)			<input checked="" type="checkbox"/>	18.								
Trip Blank Present:	<input checked="" type="checkbox"/>			Trip blank custody seal present? YES or NO								
Rad Samples Screened <0.5 mrem/hr.	<input checked="" type="checkbox"/>			<table border="1"> <tr> <td>Initial when completed</td> <td><u>SH</u></td> <td>Date:</td> <td><u>5/16/23</u></td> <td>Survey Meter SN</td> <td><u>1563</u></td> </tr> </table>	Initial when completed	<u>SH</u>	Date:	<u>5/16/23</u>	Survey Meter SN	<u>1563</u>		
Initial when completed	<u>SH</u>	Date:	<u>5/16/23</u>	Survey Meter SN	<u>1563</u>							
Comments:												

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





May 19, 2023

Rob Whittington  
Pace Analytical Madisonville  
825 Industrial Rd  
Madisonville, KY 42431

RE: Project: 3043174  
Pace Project No.: 30582998

Dear Rob Whittington:

Enclosed are the analytical results for sample(s) received by the laboratory on April 28, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Greensburg

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

Sincerely,

Carla Cmar  
carla.cmar@pacelabs.com  
(724)850-5600  
Project Manager

Enclosures

cc: Doug Wolfe, Pace Analytical Madisonville



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: 3043174  
Pace Project No.: 30582998

---

### Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Florida: Cert E871149 SEKS WET

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

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## REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: 3043174  
Pace Project No.: 30582998

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30582998001	3043174-01	Water	04/25/23 13:52	04/28/23 09:40

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 3043174  
Pace Project No.: 30582998

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30582998001	3043174-01	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 3043174  
 Pace Project No.: 30582998

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: 3043174-01</b> <b>Lab ID: 30582998001</b> Collected: 04/25/23 13:52      Received: 04/28/23 09:40      Matrix: Water PWS:      Site ID:      Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	<b>-0.0689 ± 0.357 (0.828)</b> C:NA T:89%	pCi/L	05/17/23 14:33	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>0.924 ± 0.475 (0.864)</b> C:80% T:85%	pCi/L	05/11/23 13:02	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>0.924 ± 0.832 (1.69)</b>	pCi/L	05/19/23 14:57	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: 3043174  
 Pace Project No.: 30582998

---

QC Batch: 585433	Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1	Analysis Description: 903.1 Radium-226
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30582998001

---

METHOD BLANK: 2843307 Matrix: Water

Associated Lab Samples: 30582998001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.266 ± 0.302 (0.477) C:NA T:91%	pCi/L	05/17/23 14:07	

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

**REPORT OF LABORATORY ANALYSIS**

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: 3043174  
Pace Project No.: 30582998

---

QC Batch: 585436	Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0	Analysis Description: 904.0 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30582998001

---

METHOD BLANK: 2843322 Matrix: Water

Associated Lab Samples: 30582998001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.423 ± 0.344 (0.683) C:75% T:85%	pCi/L	05/11/23 12:59	

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

### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: 3043174  
Pace Project No.: 30582998

---

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 3043174  
Pace Project No.: 30582998

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30582998001	3043174-01	EPA 903.1	585433		
30582998001	3043174-01	EPA 904.0	585436		
30582998001	3043174-01	Total Radium Calculation	589434		

### REPORT OF LABORATORY ANALYSIS

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Chain of Custody



Workorder: 3043174

Workorder Name: MW-7 Wilson 092-00004

Owner Received Date: 4/26/2013

Results Requested By: Standard

Report To:

Subcontract To:

Requested Analysis

Pace Analytical Services, LLC  
 825 Industrial Road  
 Madisonville, KY 42409  
 270-821-7375  
 rob.whittington@pacelabs.com

Pace Analytical Services LLC Greensburg PA  
 1638 Rosey Town Rd Suite 2,3,4  
 Greensburg, PA 15601  
 (724) 850-5615

MO# : 30582998  
 30582998

Preserved Containers

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	EPA 903.1	EPA 904.0 Radium Sum Calc	UOB USE DML Y
1								
2	3043174-01		04/25/23 13:52	IR44-McCoy	Water	X	X	OC1
3								
4								
5								
6								
7								
8								
9								
10								

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	Jessica Franklin	4/27/2013			
2					
3					

Cooler Temperature on Receipt: \_\_\_\_\_ °C    Custody Seal Y or (N)    Received on Ice Y or (N)    Sample Intact (Y) or (N)

In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC

This chain of custody is considered complete as is since this information is available in the owner laboratory.

**SUBCONTRACT ORDER**  
**Pace Analytical Services, LLC Kentucky**  
**3043174**

**SENDING LABORATORY:**

Pace Analytical Services, LLC Kentucky  
 PO BOX 907  
 Madisonville, KY 42411  
 Phone: (270) 821 7375  
 Fax: 844-270-7904  
 Project Manager: Rob Whittington

**RECEIVING LABORATORY:**

Pace Analytical Services LLC Greensburg PA  
 1638 Rosey Town Rd Suite 2,3,4  
 Greensburg, PA 15601  
 Phone : (724) 850-5615  
 Fax:

Analysis	Expires	Laboratory ID	Comments
Sample ID: 3043174-01	Water	Sampled: 04/25/2023 13:52	Specific Method
Radium Total (sub)	10/22/2023 13:52	EPA 904.0 Radium Sum C	
Radium 228 (sub)	10/22/2023 13:52	EPA 904.0 Radium Sum C	
Radium 226 (sub)	10/22/2023 13:52	EPA 903.1	

**WO# : 30582998**

PK: ADC      Due Date: 05/19/23  
 CLIENT: PACE\_44\_KYKY

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_



DC# Title: ENV-FRM-GBUR-0088 v04\_Sample Condition Upon Receipt  
Pittsburgh

WO#: 30582998

Effective Date: 02/03/2023

PH: DOC

Due Date: 05/19/23

Client Name: Pace Madisonville

CLIENT: PAGE\_44\_MVKT

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace  Other

Tracking Number: 707N

Examined By	<u>TM</u>
Labeled By	<u>TM</u>
Temped By	<u>-</u>

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

Thermometer Used: \_\_\_\_\_ Type of Ice: Wet Blue None

Cooler Temperature: Observed Temp \_\_\_\_\_ °C      Correction Factor: \_\_\_\_\_ °C      Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to 5°C

Comments:	Yes	No	NA	pH paper Lot#	D.P.D. Residual Chlorine Lot #
				<u>W03124</u>	
Chain of Custody Present	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.	
Chain of Custody Filled Out: -Were client corrections present on CDC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.	
Chain of Custody Relinquished	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.	
Sampler Name & Signature on CDC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4.	
Sample Labels match CDC: -Includes date/time/ID Matrix: <u>WT</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.	<u>No date/time on bottles</u>
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.	
Short Hold Time Analysis (<72hr remaining):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.	
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.	
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.	
Correct Containers Used: -Pace Containers Used	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.	
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.	
Orthophosphate field filtered:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	12.	
Hex Cr Aqueous samples field filtered:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	13.	
Organic Samples checked for dechlorination	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	14.	
Filtered volume received for dissolved tests:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	15.	
All containers checked for preservation: exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16.	<u>Added 2 5ml of HNO3 to each bottle</u>
All containers meet method preservation requirements:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Initial when completed: <u>TM</u>	Date/Time of Preservation: <u>5/11/23 14:35</u>
8260C/D: Headspace in VOA Vials (> 6mm)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Lot# of added Preservative: <u>HNO3 2/7/07</u>	
624.1: Headspace in VOA Vials (0mm)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	17.	
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	18.	Trip blank custody seal present? YES or NO
Rad Samples Screened <0.5 mm/hr.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed: <u>TM</u>	Date: <u>5/11/23</u> Survey Meter SN: <u>US5</u>
Comments:					

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

Client \_\_\_\_\_

Site 3043174

Page 1 of 1

Profile Number 11851

Notes \_\_\_\_\_

Sample Line Item	Amber Glass					Plastic					Viata					Other											
	AG1H	AG3S	AG3E	AG3U	AG9T	BP1M	BP1U	BP2S	BP2U	BP30	BP3N	BP3S	BP3U	DG9S	VG9H	VG9T	VG9U	VOAK	WG9FU	WG9KU	ZPLC	GCUB	GCUN	12GN	GN	BC1U	
1																											

WO#: 30582998

PH: 800 Due Date: 05/19/23

CLIENT: PAGE\_44\_PAKY

Container Codes

Glass	
GIN	1 Gallon Jug with HVO3
AG5U	100mL amber glass unpreserved
AG5T	100mL amber glass Na Thiosulfate
GCUN	1 Gallon Jug
AG1S	1L amber glass H2SO4
AG1H	1L amber glass HCl
AG1T	1L amber glass MA Thio-Jiffine
BG1U	1L clear glass unpreserved
AG3S	250mL amber glass H2SO4
AG3U	250mL amber glass unpreserved
GN	General

Plastic/Misc.	
GCUB	1 gallon cubitainer
12GN	1/2 gallon cubitainer
SF5T	120mL colliform Na Thiosulfate
BP1N	1L plastic HVO3
BP1U	1L plastic unpreserved
BP3S	250mL plastic H2SO4
BP3N	250mL plastic HNO3
BP3U	250mL plastic unpreserved
BP3C	250mL plastic NaOH
BP2S	500mL plastic H2SO4
BP2U	500mL plastic unpreserved
EZ1	1g Encore
VOAK	Kit Viallike Solid
I	Wipes/Swab
ZPLC	Ziploc Bag
WT	Wanar
SL	Solid
OL	Non-Aq Liquid
WP	Wipe



May 19, 2023

Rob Whittington  
Pace Analytical Madisonville  
825 Industrial Rd  
Madisonville, KY 42431

RE: Project: 3043175  
Pace Project No.: 30583008

Dear Rob Whittington:

Enclosed are the analytical results for sample(s) received by the laboratory on April 28, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Greensburg

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

Sincerely,

Carla Cmar  
carla.cmar@pacelabs.com  
(724)850-5600  
Project Manager

Enclosures

cc: Doug Wolfe, Pace Analytical Madisonville



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: 3043175  
Pace Project No.: 30583008

---

### Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601  
ANAB DOD-ELAP Rad Accreditation #: L2417  
Alabama Certification #: 41590  
Arizona Certification #: AZ0734  
Arkansas Certification  
California Certification #: 04222CA  
Colorado Certification #: PA01547  
Connecticut Certification #: PH-0694  
Delaware Certification  
EPA Region 4 DW Rad  
Florida/TNI Certification #: E87683  
Georgia Certification #: C040  
Florida: Cert E871149 SEKS WET  
Guam Certification  
Hawaii Certification  
Idaho Certification  
Illinois Certification  
Indiana Certification  
Iowa Certification #: 391  
Kansas/TNI Certification #: E-10358  
Kentucky Certification #: KY90133  
KY WW Permit #: KY0098221  
KY WW Permit #: KY0000221  
Louisiana DHH/TNI Certification #: LA180012  
Louisiana DEQ/TNI Certification #: 4086  
Maine Certification #: 2017020  
Maryland Certification #: 308  
Massachusetts Certification #: M-PA1457  
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235  
Montana Certification #: Cert0082  
Nebraska Certification #: NE-OS-29-14  
Nevada Certification #: PA014572018-1  
New Hampshire/TNI Certification #: 297617  
New Jersey/TNI Certification #: PA051  
New Mexico Certification #: PA01457  
New York/TNI Certification #: 10888  
North Carolina Certification #: 42706  
North Dakota Certification #: R-190  
Ohio EPA Rad Approval: #41249  
Oregon/TNI Certification #: PA200002-010  
Pennsylvania/TNI Certification #: 65-00282  
Puerto Rico Certification #: PA01457  
Rhode Island Certification #: 65-00282  
South Dakota Certification  
Tennessee Certification #: 02867  
Texas/TNI Certification #: T104704188-17-3  
Utah/TNI Certification #: PA014572017-9  
USDA Soil Permit #: P330-17-00091  
Vermont Dept. of Health: ID# VT-0282  
Virgin Island/PADEP Certification  
Virginia/VELAP Certification #: 460198  
Washington Certification #: C868  
West Virginia DEP Certification #: 143  
West Virginia DHHR Certification #: 9964C  
Wisconsin Approve List for Rad  
Wyoming Certification #: 8TMS-L

---

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: 3043175  
Pace Project No.: 30583008

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30583008001	3043175-01	Water	04/26/23 08:04	04/28/23 09:40

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 3043175  
Pace Project No.: 30583008

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30583008001	3043175-01	EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 3043175  
Pace Project No.: 30583008

Sample: 3043175-01 Lab ID: 30583008001 Collected: 04/26/23 08:04 Received: 04/28/23 09:40 Matrix: Water  
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	<b>0.839 ± 0.513 (0.630)</b> C:NA T:100%	pCi/L	05/17/23 15:14	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>0.819 ± 0.414 (0.716)</b> C:79% T:88%	pCi/L	05/11/23 16:17	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>1.66 ± 0.927 (1.35)</b>	pCi/L	05/19/23 15:07	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: 3043175  
 Pace Project No.: 30583008

QC Batch: 585444	Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1	Analysis Description: 903.1 Radium-226
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30583008001

---

METHOD BLANK: 2843355 Matrix: Water

Associated Lab Samples: 30583008001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0499 ± 0.228 (0.135) C:NA T:94%	pCi/L	05/17/23 15:01	

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

**REPORT OF LABORATORY ANALYSIS**

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: 3043175  
 Pace Project No.: 30583008

---

QC Batch: 585445	Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0	Analysis Description: 904.0 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30583008001

---

METHOD BLANK: 2843363 Matrix: Water

Associated Lab Samples: 30583008001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.459 ± 0.319 (0.599) C:77% T:85%	pCi/L	05/11/23 16:16	

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

**REPORT OF LABORATORY ANALYSIS**

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## QUALIFIERS

Project: 3043175  
Pace Project No.: 30583008

---

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 3043175  
Pace Project No.: 30583008

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30583008001	3043175-01	EPA 903.1	585444		
30583008001	3043175-01	EPA 904.0	585445		
30583008001	3043175-01	Total Radium Calculation	589438		

### REPORT OF LABORATORY ANALYSIS

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Chain of Custody



Workorder: 3043175      Workorder Name: MW-8 Wilson C92-00004      Owner Received Date: 4/26/2023      Results Requested By: Standard

Report To: Subcontract To:

Pace Analytical Services, LLC  
 825 Industrial Road  
 Madisonville, KY 42409  
 270-821-7375  
 rob.whittington@pacelabs.com

Pace Analytical Services LLC Greensburg P/ 1638 Rosey Town Rd Suite 2,3,4 Greensburg, PA 15601 (724) 850-5615

Requested Analysis

WO#: 30583008  
 36583888

Preserve Containers

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	EPA 903.1	EPA 904.0 Radium Sum Calc	LAB USE ONLY
1	3043175-01		04/26/23 08:04	IR-44-McCoy	Water	X	X	CO
2								
3								
4								
5								
6								
7								
8								
9								
10								

Transfers Released By	Date/Time	Received By	Date/Time	Comments
Jessica Franklin	4/27/2023	[Signature]	4/27/2023	

Cooler Temperature on Receipt ← °C      Custody Seal Y or N      Received on Ice Y or N      Sample Intact (Y) or N

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



**SUBCONTRACT ORDER**

Pace Analytical Services, LLC Kentucky  
3043175

**SENDING LABORATORY:**

Pace Analytical Services, LLC Kentucky  
PO BOX 907  
Madisonville, KY 42431  
Phone: (270) 821-7375  
Fax: 844-270-7904  
Project Manager: Rob Whittington

**RECEIVING LABORATORY:**

Pace Analytical Services LLC Greensburg PA  
1638 Rosey Town Rd Suite 2,3,4  
Greensburg, PA 15601  
Phone: (724) 850-5615  
Fax:

Analysis	Expires	Laboratory ID	Comments
Sample ID: 3043175-01	Water	Sampled: 04/26/2023 08:04	Specific Method
Radium Total (sub)	10/23/2023 08:04	EPA 904.0 Radium Sum C	
Radium 226 (sub)	10/23/2023 08:04	EPA 904.0 Radium Sum C	
Radium 226 (sub)	10/23/2023 08:04	EPA 903.1	

**WO# : 30583008**  
PR: ROC  
CLIENT: PACE\_44\_MKY  
Due Date: 05/19/23

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_



DC# Title: ENV-FRM-GBUR-0088 v04\_Sample Condition Blank  
Pittsburgh

WO#: 30583008

Effective Date: 02/03/2023

Due Date: 05/10/23  
PR: ADC  
CLIENT: PACE\_44\_MVNY

Client Name: Pace Madisonville

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace  Other

Tracking Number: 1000

Examined By	<u>TH</u>
Labeled By	<u>TH</u>
Temped By	<u>-</u>

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

Thermometer Used: -      Type of Ice: Wet Blue None

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

Temp should be above freezing to 6°C

Comments:	pH paper Lot#			D.P.D. Residual Chlorine Lot#
	Yes	No	NA	
Chain of Custody Present	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1. <u>1003121</u>
Chain of Custody Filled Out: -Were client corrections present on COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. <u>-</u>
Chain of Custody Reinforced	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. <u>-</u>
Sampler Name & Signature on COC	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. <u>-</u>
Sample Labels match COC: -Includes date/time/ID Matrix: <u>WT</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5. <u>Number time on bottles</u>
Samples Arrived within Hold Time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6. <u>-</u>
Short Hold Time Analysis (<72hr remaining):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7. <u>-</u>
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8. <u>-</u>
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9. <u>-</u>
Correct Containers Used: -Pace Containers Used	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10. <u>-</u>
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11. <u>-</u>
Orthophosphate field filtered:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	12. <u>-</u>
Hex Cr Aqueous samples field filtered:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	13. <u>-</u>
Organic Samples checked for dechlorination	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	14. <u>-</u>
Filtered volume received for dissolved tests	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15. <u>-</u>
All containers checked for preservation: exceptions: VDA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16. <u>Added 2.5ml of HNO3 to all bottles</u>
All containers meet method preservation requirements:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Initial when completed: <u>TH</u> Date/Time of Preservation: <u>5/11/23 15:25</u>
				Lot# of added Preservative: <u>HNO3 217007</u>
8260C/D: Headspace in VOA Vials (> 6mm)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	17. <u>-</u>
624.1: Headspace in VOA Vials (0mm)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	18. <u>-</u>
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Trip blank custody seal present? YES or NO
Rad Samples Screened <0.5 mrem/hr.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed: <u>TH</u> Date: <u>5/11/23</u> Survey Meter SN: <u>1663</u>
Comments:	<u>-</u>			

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

Client

Site S043175

Page 1 of 1

Profile Number 11851

Notes

Sample Line Item	Amber Glass					Plastic					Viats					Other															
	AG1H	AG38	AG3U	AG5U	AG5T	BP1N	BP1U	BP28	BP2U	BP30	BP3N	BP3S	BP3U	DG9S	VG8H	VG8T	VG8U	VOAK	WG7U	WG9U	ZPLC	GCUB	GM	MGN	BO1U						

WO# : 30583008

PH: IPC Due Date: 05/19/23  
 CLIENT: PRICE\_44\_PWKY

Container Codes

### Glass

GA1N	1 Gallon Jug with HDPE	DESS	40mL amber VOA vial H2SO4
AG3U	300mL amber glass unpreserved	VG8U	40mL clear VOA vial
AG5T	100mL amber glass NB Thiosulfate	VG3T	40mL clear VOA vial Na Thiosulfate
GA1N	1 Gallon Jug	VG3H	40mL clear VOA vial HCl
AG1S	1L amber glass H2SO4	JG7U	4oz amber wide jar
AG1H	1L amber glass HCl	WG7U	4oz wide jar unpreserved
AG1T	1L amber glass NB Thiosulfate	RG2U	500mL clear glass unpreserved
BG1U	1L clear glass unpreserved	AG2U	500mL amber glass unpreserved
AG3S	250mL amber glass H2SO4	WG8U	Box wide jar unpreserved
AG5U	250mL amber glass unpreserved	GN	General

### Plastic/Misc.

GCUB	1 gallon cubitainer	EZ1	5g Encore
12GV	1/2 gallon cubitainer	VOAK	KI Volatile Sol'd
SP5T	120mL collform NB Thiosulfate	I	Wafer/Swab
BP1N	1L plastic HNO3	ZPLC	Slipbc Bag
BP1U	1L plastic unpreserved	W-	Wafer
BP3S	250mL plastic H2SO4	SL	Sold
BP3N	250mL plastic HNO3	OL	Non-Aq Liquid
BP3J	250mL plastic unpreserved	WV	Wafer
BP3C	250mL plastic NaOH		
BP2S	500mL plastic H2SO4		
BP2U	500mL plastic unpreserved		



May 19, 2023

Rob Whittington  
Pace Analytical Madisonville  
825 Industrial Rd  
Madisonville, KY 42431

RE: Project: 3043176  
Pace Project No.: 30583006

Dear Rob Whittington:

Enclosed are the analytical results for sample(s) received by the laboratory between April 28, 2023 and May 03, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Greensburg

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

Sincerely,

Carla Cmar  
carla.cmar@pacelabs.com  
(724)850-5600  
Project Manager

Enclosures

cc: Doug Wolfe, Pace Analytical Madisonville



## REPORT OF LABORATORY ANALYSIS

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### CERTIFICATIONS

Project: 3043176  
Pace Project No.: 30583006

---

#### Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601  
ANAB DOD-ELAP Rad Accreditation #: L2417  
Alabama Certification #: 41590  
Arizona Certification #: AZ0734  
Arkansas Certification  
California Certification #: 04222CA  
Colorado Certification #: PA01547  
Connecticut Certification #: PH-0694  
Delaware Certification  
EPA Region 4 DW Rad  
Florida/TNI Certification #: E87683  
Georgia Certification #: C040  
Florida: Cert E871149 SEKS WET  
Guam Certification  
Hawaii Certification  
Idaho Certification  
Illinois Certification  
Indiana Certification  
Iowa Certification #: 391  
Kansas/TNI Certification #: E-10358  
Kentucky Certification #: KY90133  
KY WW Permit #: KY0098221  
KY WW Permit #: KY0000221  
Louisiana DHH/TNI Certification #: LA180012  
Louisiana DEQ/TNI Certification #: 4086  
Maine Certification #: 2017020  
Maryland Certification #: 308  
Massachusetts Certification #: M-PA1457  
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235  
Montana Certification #: Cert0082  
Nebraska Certification #: NE-OS-29-14  
Nevada Certification #: PA014572018-1  
New Hampshire/TNI Certification #: 297617  
New Jersey/TNI Certification #: PA051  
New Mexico Certification #: PA01457  
New York/TNI Certification #: 10888  
North Carolina Certification #: 42706  
North Dakota Certification #: R-190  
Ohio EPA Rad Approval: #41249  
Oregon/TNI Certification #: PA200002-010  
Pennsylvania/TNI Certification #: 65-00282  
Puerto Rico Certification #: PA01457  
Rhode Island Certification #: 65-00282  
South Dakota Certification  
Tennessee Certification #: 02867  
Texas/TNI Certification #: T104704188-17-3  
Utah/TNI Certification #: PA014572017-9  
USDA Soil Permit #: P330-17-00091  
Vermont Dept. of Health: ID# VT-0282  
Virgin Island/PADEP Certification  
Virginia/VELAP Certification #: 460198  
Washington Certification #: C868  
West Virginia DEP Certification #: 143  
West Virginia DHHR Certification #: 9964C  
Wisconsin Approve List for Rad  
Wyoming Certification #: 8TMS-L

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### REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: 3043176  
Pace Project No.: 30583006

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30583006001	3043176-01	Water	04/25/23 14:30	04/28/23 09:40
30583006002	3043176-01_MS	Water	04/25/23 14:30	05/03/23 11:08
30583006003	3043176-01_MSD	Water	04/25/23 14:30	05/03/23 11:08

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 3043176  
Pace Project No.: 30583006

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30583006001	3043176-01	EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
30583006002	3043176-01_MS	EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
30583006003	3043176-01_MSD	EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 3043176  
Pace Project No.: 30583006

Sample: 3043176-01		Lab ID: 30583006001	Collected: 04/25/23 14:30	Received: 04/28/23 09:40	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg							
Radium-226	EPA 903.1	<b>0.118 ± 0.615 (1.28)</b> <b>C:NA T:95%</b>		pCi/L	05/17/23 15:14	13982-63-3	
Pace Analytical Services - Greensburg							
Radium-228	EPA 904.0	<b>0.696 ± 0.477 (0.928)</b> <b>C:81% T:87%</b>		pCi/L	05/11/23 16:17	15262-20-1	
Pace Analytical Services - Greensburg							
Total Radium	Total Radium Calculation	<b>0.814 ± 1.09 (2.21)</b>		pCi/L	05/19/23 15:07	7440-14-4	

Sample: 3043176-01_MS		Lab ID: 30583006002	Collected: 04/25/23 14:30	Received: 05/03/23 11:08	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg							
Radium-226	EPA 903.1	<b>96.88 %REC ± NA (NA)</b> <b>C:NA T:NA</b>		pCi/L	05/17/23 15:14	13982-63-3	
Pace Analytical Services - Greensburg							
Radium-228	EPA 904.0	<b>78.79 %REC ± NA (NA)</b> <b>C:NA T:NA</b>		pCi/L	05/11/23 16:17	15262-20-1	

Sample: 3043176-01_MSD		Lab ID: 30583006003	Collected: 04/25/23 14:30	Received: 05/03/23 11:08	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC) Carr Trac		Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg							
Radium-226	EPA 903.1	<b>90.11 %REC 7.24RPD ± NA (NA)</b> <b>C:NA T:NA</b>		pCi/L	05/17/23 15:14	13982-63-3	
Pace Analytical Services - Greensburg							
Radium-228	EPA 904.0	<b>96.66 %REC 20.37RPD ± NA (NA)</b> <b>C:NA T:NA</b>		pCi/L	05/11/23 16:17	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: 3043176  
Pace Project No.: 30583006

---

QC Batch: 585444	Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1	Analysis Description: 903.1 Radium-226
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30583006001, 30583006002, 30583006003

---

METHOD BLANK: 2843355 Matrix: Water

Associated Lab Samples: 30583006001, 30583006002, 30583006003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0499 ± 0.228 (0.135) C:NA T:94%	pCi/L	05/17/23 15:01	

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

### REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: 3043176  
 Pace Project No.: 30583006

---

QC Batch: 585445	Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0	Analysis Description: 904.0 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30583006001, 30583006002, 30583006003

---

METHOD BLANK: 2843363 Matrix: Water  
 Associated Lab Samples: 30583006001, 30583006002, 30583006003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.459 ± 0.319 (0.599) C:77% T:85%	pCi/L	05/11/23 16:16	

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

**REPORT OF LABORATORY ANALYSIS**

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## QUALIFIERS

Project: 3043176  
Pace Project No.: 30583006

---

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

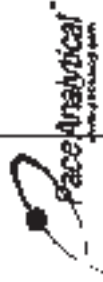
Project: 3043176  
Pace Project No.: 30583006

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30583006001	3043176-01	EPA 903.1	585444		
30583006002	3043176-01_MS	EPA 903.1	585444		
30583006003	3043176-01_MSD	EPA 903.1	585444		
30583006001	3043176-01	EPA 904.0	585445		
30583006002	3043176-01_MS	EPA 904.0	585445		
30583006003	3043176-01_MSD	EPA 904.0	585445		
30583006001	3043176-01	Total Radium Calculation	589438		

### REPORT OF LABORATORY ANALYSIS

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Chain of Custody



Workorder: 3043176

Workorder Name: Well Duplicate 1 Wilson 02 Owner Received Date: 4/26/2023

Results Requested By: Standard

Report To:

Subcontract To:

Requested Analysis

Pace Analytical Services, LLC  
 825 Industrial Road  
 Madisonville, KY 42409  
 270-821-7375  
 rob.whittington@pacelabs.com

Pace Analytical Services LLC Greensburg PA  
 1638 Rosey Town Rd Suite 2,3,4  
 Greensburg, PA 15601  
 (724) 850-5615

WO#: 30583006



Reserved Containers

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	EPA 903.1	EPA 904.0 Radium Sum Calc	LAB USE ONLY
1								
2	3043176-01		04/25/23 14:30	IR44-McCoy	Water	X	X	GC
3								
4								
5								
6								
7								
8								
9								
10								

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	Jessica Franklin	4/27/2023	[Signature]	4/28/2023	
2					
3					

Cooler Temperature on Receipt: \_\_\_\_\_ °C Custody Seal Y or N: \_\_\_\_\_ Received on Ice Y or N: \_\_\_\_\_ Sample Intact Y or N: \_\_\_\_\_

\*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC

This chain of custody is considered complete as is since this information is available in the owner laboratory.

Friday, June 17, 2016 11:01:34 AM

FMT-ALL-C-002 rev.00 24 March 2009

Page 1 of 1

**SUBCONTRACT ORDER**

Pace Analytical Services, LLC Kentucky

3043176

**SENDING LABORATORY:**

Pace Analytical Services, LLC Kentucky

PO BOX 907

Madisonville, KY 42431

Phone: (270) 821-7375

Fax: 844-270-7904

Project Manager: Rob Whittington

**RECEIVING LABORATORY:**

Pace Analytical Services LLC Greensburg PA

1638 Rosey Town Rd Suite 2,3,4

Greensburg, PA 15601

Phone: (724) 850-5615

Fax:

Analysis	Expires	Laboratory ID	Comments
Sample ID: 3043176-01	Water	Sampled:04/29/2023 14:30	Specific Method
Radium Total (sub)	10/22/2023 14:30	RPA 9040 Radium Sum C	
Radium 228 (sub)	10/22/2023 14:30	EPA 9040 Radium Sum C	
Radium 226 (sub)	10/22/2023 14:30	EPA 9031	

**WO#: 30583006**

PH: RDC      Due Date: 05/18/23

CLIENT: PACE\_44\_MWY

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_





DC# Title: ENV-FRM-GBUR-0088 v04\_Sample Condition Upon Receipt  
Pittsburgh

WO#: 30583006

Effective Date: 02/03/2023

PR: ADC

Due Date: 05/19/23

Client Name: Page Manufacturing

CLIENT: PAGE\_44\_NYKY

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Page  Other

Tracking Number: 7071

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

Thermometer Used: \_\_\_\_\_ Type of Ice: Wet Blue (none)

Cooler Temperature: Observed Temp \_\_\_\_\_ °C Correction Factor \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to 6°C

Examined By	<u>SM</u>
Labeled By	<u>SM</u>
Temped By	

Comments:	pH paper Lot# <u>1007.01</u>			D.P.D. Residual Chlorine Lot#
	Yes	No	NA	
Chain of Custody Present	<input checked="" type="checkbox"/>			1.
Chain of Custody Filled Out: -Were client corrections present on COC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		2.
Chain of Custody Relinquished	<input checked="" type="checkbox"/>			3.
Sampler Name & Signature on COC:		<input checked="" type="checkbox"/>		4.
Sample labels match COC: -Includes date/time/ID Matrix		<input checked="" type="checkbox"/>		5. <u>No date/time on bottles</u>
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>			6.
Short Hold Time Analysis (<72hr remaining):		<input checked="" type="checkbox"/>		7.
Rush Turn Around Time Requested:		<input checked="" type="checkbox"/>		8.
Sufficient Volume:	<input checked="" type="checkbox"/>			9.
Correct Containers Used: -Page Containers Used	<input checked="" type="checkbox"/>			10.
Containers Intact:	<input checked="" type="checkbox"/>			11.
Orthophosphate field filtered:			<input checked="" type="checkbox"/>	12.
Hex Or Aqueous samples field filtered:			<input checked="" type="checkbox"/>	13.
Organic Samples checked for dechlorination			<input checked="" type="checkbox"/>	14.
Filtered volume received for dissolved tests:			<input checked="" type="checkbox"/>	15.
All containers checked for preservation: exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix	<input checked="" type="checkbox"/>			16. <u>Added 5.0 ml of HNO<sub>3</sub> to all bottles.</u>
All containers meet method preservation requirements:		<input checked="" type="checkbox"/>		Initial when completed <u>SM</u> Date/Time of Preservation <u>5/11/23 15:20</u>
				Label of added Preservative <u>HNO<sub>3</sub> 2/2007</u>
8260/0: Headspace in VOA Vials (> 6mm)			<input checked="" type="checkbox"/>	17.
624.1: Headspace in VOA Vials (0mm)			<input checked="" type="checkbox"/>	18.
Trip Blank Present:			<input checked="" type="checkbox"/>	Trip blank custody seal present? YES or NO
Rad Samples Screened <0.5 mrem/hr.	<input checked="" type="checkbox"/>			Initial when completed <u>SM</u> Date: <u>5/11/23</u> Survey Meter SN: <u>4567</u>
Comments:				

Notes: For MC compliance samples with discrepancies, a copy of this form must be sent to the DENR Certification Office. PM Review is documented electronically in LIMS through the GRF Review module in the Workorder Edit Screen.





May 19, 2023

Rob Whittington  
Pace Analytical Madisonville  
825 Industrial Rd  
Madisonville, KY 42431

RE: Project: 3043177  
Pace Project No.: 30583011

Dear Rob Whittington:

Enclosed are the analytical results for sample(s) received by the laboratory on April 28, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Greensburg

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

Sincerely,

Carla Cmar  
carla.cmar@pacelabs.com  
(724)850-5600  
Project Manager

Enclosures

cc: Doug Wolfe, Pace Analytical Madisonville



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: 3043177  
Pace Project No.: 30583011

---

### Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Florida: Cert E871149 SEKS WET

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

---

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: 3043177  
Pace Project No.: 30583011

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30583011001	3043177-01	Water	04/25/23 08:44	04/28/23 09:40

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 3043177  
Pace Project No.: 30583011

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30583011001	3043177-01	EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 3043177  
 Pace Project No.: 30583011

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: 3043177-01</b> <b>Lab ID: 30583011001</b> Collected: 04/25/23 08:44      Received: 04/28/23 09:40      Matrix: Water PWS:      Site ID:      Sample Type:						
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	<b>0.769 ± 0.691 (1.05)</b> C:NA T:85%	pCi/L	05/17/23 15:14	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>0.231 ± 0.385 (0.839)</b> C:78% T:80%	pCi/L	05/11/23 16:18	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>1.000 ± 1.08 (1.89)</b>	pCi/L	05/19/23 15:07	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: 3043177  
 Pace Project No.: 30583011

---

QC Batch: 585444	Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1	Analysis Description: 903.1 Radium-226
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30583011001

---

METHOD BLANK: 2843355 Matrix: Water

Associated Lab Samples: 30583011001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0499 ± 0.228 (0.135) C:NA T:94%	pCi/L	05/17/23 15:01	

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

**REPORT OF LABORATORY ANALYSIS**

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: 3043177  
 Pace Project No.: 30583011

QC Batch: 585445	Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0	Analysis Description: 904.0 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30583011001

METHOD BLANK: 2843363 Matrix: Water

Associated Lab Samples: 30583011001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.459 ± 0.319 (0.599) C:77% T:85%	pCi/L	05/11/23 16:16	

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

**REPORT OF LABORATORY ANALYSIS**

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## QUALIFIERS

Project: 3043177  
Pace Project No.: 30583011

---

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 3043177  
Pace Project No.: 30583011

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30583011001	3043177-01	EPA 903.1	585444		
30583011001	3043177-01	EPA 904.0	585445		
30583011001	3043177-01	Total Radium Calculation	589438		

### REPORT OF LABORATORY ANALYSIS

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Chain of Custody



Workorder: 3043177

Workorder Name: Web Duplicate 2 Wilson DE Owner Received Date: 4/26/2023

Results Requested By: Standard

Report To:

Requested Analysis:

Pace Analytical Services, LLC  
 825 Industrial Road  
 Madisonville, KY 42409  
 270-821-7375  
 rob.whittington@pacelabs.com

Pace Analytical Services LLC Greensburg Pf  
 1638 Rosey Town Rd Suite 2,3,4  
 Greensburg, PA 15601  
 (724) 850-5615

WO#: 30583011



Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers		Date/Time	Comments
						EPA 903.1	FPA 904.1 Radium Sum Calc		
1									
2	3043177-01		04/25/23 08:44	IR44-McCoy	Water	X	X	4/28/2023	
3									
4									
5									
6									
7									
8									
9									
10									

Transfers Released By	Date/Time	Received By	Date/Time	Comments
Jessica Franklin	4/27/2023	[Signature]	4/28/2023	

Cooler Temperature on Receipt: \_\_\_\_\_ °C Custody Seal Y or N Received on Ice Y or N Sample Intact Y or N  
 \*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this CDC  
 This chain of custody is considered complete as is since this information is available in the owner laboratory.

Friday, June 17, 2016 11:01:34 AM

FMT-ALL-C-002 rev.00 24March2009

Page 1 of 2

**SUBCONTRACT ORDER**

Pace Analytical Services, LLC Kentucky

3043177

**SENDING LABORATORY:**

Pace Analytical Services, LLC Kentucky

PO BOX 907

Madisonville, KY 42431

Phone: (270) 821-7375

Fax: 844-270-7904

Project Manager: Rob Whittington

**RECEIVING LABORATORY:**

Pace Analytical Services LLC Greensburg PA

1638 Rosey Town Rd Suite 2,3,4

Greensburg, PA 15601

Phone: (724) 850-5615

Fax:

Analysis	Expires	Laboratory ID	Comments
Sample ID: 3043177-01	Water	Sampled: 04/25/2023 08:44	Specific Method
Radium Total (sub)	10/22/2023 08:44	EPA 904.0 Radium Sum C	
Radium 228 (sub)	10/22/2023 08:44	EPA 904.0 Radium Sum C	
Radium 226 (sub)	10/22/2023 08:44	EPA 903.1	

**WO#: 30583011**

PR: ADC

Due Date: 05/19/23

CLIENT: PACE\_44\_MVKY

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_

DC# Title: ENV-FRM-GBUR-0088 v04\_Sample Condition Upon Receipt-  
Pittsburgh

WO#: 30583011



Effective Date: 02/03/2023

PN: ADC

Due Date: 05/19/23

Client Name: Pace Analytical

CLIENT: PACE\_44\_NVKY

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace  Other

Tracking Number: 7677

Examined By	TH
Labeled By	TR
Temped By	-

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

Thermometer Used: \_\_\_\_\_ Type of Ice: Wet Blue None

Cooler Temperature: Observed Temp \_\_\_\_\_ °C    Correction Factor: \_\_\_\_\_ °C    Final Temp: \_\_\_\_\_ °C  
Temp should be above freezing w/ 6°C

Comments:

Comments:	Yes	No	NA	pH paper Lot# 100311	D.P.D. Residual Chlorine Lot #
Chain of Custody Filled Out: -Were client corrections present on COC	✓			2.	
Chain of Custody Relinquished	✓			3.	
Sampler Name & Signature on COC:		✓		4.	
Sample Labels match COC: -Includes date/time/ID Matrix: <u>WT</u>		✓		5. No detail time on bottles.	
Samples Arrived within Hold Time:	✓			6.	
Short Hold Time Analysis (<72hr remaining):		✓		7.	
Rush Turn Around Time Requested:		✓		8.	
Sufficient Volume:	✓			9.	
Correct Containers Used: -Pace Containers Used	✓			10.	
Containers Intact:	✓			11.	
Orthophosphate field filtered:			✓	12.	
Hex Or Aqueous samples field filtered:			✓	13.	
Organic Samples checked for dechlorination:			✓	14.	
Filtered volume received for dissolved tests:			✓	15.	
All containers checked for preservation: exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix	✓			16.	
All containers meet method preservation requirements:	✓			Initial when completed: TH	Date/Time of Preservation
8260C/D: Headspace in VOA Vials (> 6mm)			✓	Lot# of added Preservative	
624.1: Headspace in VOA Vials (0mm)			✓	17.	
Trip Blank Present:			✓	18.	
Trip blank custody seal present? YES or NO					
Rad Samples Screened <0.5 mrem/hr.	✓			Initial when completed: TH	Date: 6/1/23 Survey Meter Ser: 1553
Comments:					

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







May 19, 2023

Rob Whittington  
Pace Analytical Madisonville  
825 Industrial Rd  
Madisonville, KY 42431

RE: Project: 3048773  
Pace Project No.: 30583005

Dear Rob Whittington:

Enclosed are the analytical results for sample(s) received by the laboratory on April 28, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Greensburg

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

Sincerely,

Carla Cmar  
carla.cmar@pacelabs.com  
(724)850-5600  
Project Manager

Enclosures

cc: Doug Wolfe, Pace Analytical Madisonville



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: 3048773  
Pace Project No.: 30583005

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### Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Florida: Cert E871149 SEKS WET

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification #: 9991

Missouri Certification #: 235

Montana Certification #: Cert0082

Nebraska Certification #: NE-OS-29-14

Nevada Certification #: PA014572018-1

New Hampshire/TNI Certification #: 297617

New Jersey/TNI Certification #: PA051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Ohio EPA Rad Approval: #41249

Oregon/TNI Certification #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Approve List for Rad

Wyoming Certification #: 8TMS-L

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## REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: 3048773  
Pace Project No.: 30583005

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30583005001	3048773-01	Water	04/25/23 14:22	04/28/23 09:40

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 3048773  
Pace Project No.: 30583005

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30583005001	3048773-01	EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 3048773  
Pace Project No.: 30583005

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
<b>Sample: 3048773-01</b> <b>Lab ID: 30583005001</b> Collected: 04/25/23 14:22      Received: 04/28/23 09:40      Matrix: Water PWS:      Site ID:      Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>-0.114 ± 0.386 (0.853)</b> C:NA T:98%	pCi/L	05/17/23 15:01	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.803 ± 0.440 (0.796)</b> C:79% T:82%	pCi/L	05/11/23 16:17	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	<b>0.803 ± 0.826 (1.65)</b>	pCi/L	05/19/23 15:07	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: 3048773  
 Pace Project No.: 30583005

QC Batch: 585444	Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1	Analysis Description: 903.1 Radium-226
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30583005001

METHOD BLANK: 2843355 Matrix: Water

Associated Lab Samples: 30583005001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0499 ± 0.228 (0.135) C:NA T:94%	pCi/L	05/17/23 15:01	

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

**REPORT OF LABORATORY ANALYSIS**

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: 3048773  
Pace Project No.: 30583005

---

QC Batch: 585445	Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0	Analysis Description: 904.0 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30583005001

---

METHOD BLANK: 2843363 Matrix: Water

Associated Lab Samples: 30583005001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.459 ± 0.319 (0.599) C:77% T:85%	pCi/L	05/11/23 16:16	

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

### REPORT OF LABORATORY ANALYSIS

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## QUALIFIERS

Project: 3048773  
Pace Project No.: 30583005

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### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 3048773  
Pace Project No.: 30583005

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30583005001	3048773-01	EPA 903.1	585444		
30583005001	3048773-01	EPA 904.0	585445		
30583005001	3048773-01	Total Radium Calculation	589438		

### REPORT OF LABORATORY ANALYSIS

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Chain of Custody



Workorder: 3043773

Workorder Name: Field Blank Wilson 092-001 Owner Received Date: 4/26/2023

Results Requested By: Standard

Report To:

Subcontract To:

Requested Analysis

Pace Analytical Services, LLC  
 625 Industrial Road  
 Madisonville, KY 42409  
 270-821-7375  
 rob.whittington@pacelabs.com

Pace Analytical Services LLC Greensburg P/ 1638 Rosey Town Rd Suite 2,3,4 Greensburg, PA 15601 (724) 850-5615

WO#: 30583005

30583005

Preserved Containers

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Received By	Date/Time	Released By	Date/Time	Comments
1										
2	3043773-01		04/25/23 14:22	IR44-McCoy	Water	<i>[Signature]</i>	4/27/2023	<i>[Signature]</i>	4/28/2023	
3										
4										
5										
6										
7										
8										
9										
10										

LAB USE ONLY  
 COI

EPA 903.1 X  
 EPA 904.0 Radium Sum Calc X

Cooler Temperature on Receipt \_\_\_\_\_ °C Custody Seal Y or N Received on Ice Y or N Sample Intact or N

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

**SUBCONTRACT ORDER**

**Pace Analytical Services, LLC Kentucky  
3043773**

**SENDING LABORATORY:**

Pace Analytical Services, LLC Kentucky  
PO BOX 907  
Madisonville, KY 42431  
Phone: (270) 821-7375  
Fax: 844-270-7904  
Project Manager: Rob Whittington

**RECEIVING LABORATORY:**

Pace Analytical Services LLC Greensburg PA  
1638 Rosey Town Rd Suite 2,3,4  
Greensburg, PA 15601  
Phone (724) 850-5615  
Fax:

Analysis	Expires	Laboratory ID	Comments
Sample ID: 3043773-01	Water	Sampled 04/25/2023 14:22	Specific Method
Radium Total (sub)	10/22/2023 14:22	EPA 904.0 Radium Sum C	
Radium 228 (sub)	10/22/2023 14:22	EPA 904.0 Radium Sum C	
Radium 226 (sub)	10/22/2023 14:22	EPA 903.1	

**WO# : 30583005**

**PR: ADC      Due Date: 05/19/23  
CLIENT: PRCE\_44\_MVY**

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_



DC# Title: ENV-FRM-GBUR-0088 v04\_Sample Condition Upon Receipt-  
Pittsburgh

WO# : 30583005

Effective Date: 02/03/2023

PH: ADC Due Date: 05/19/23  
CLIENT: PACE\_44\_MVNY

Client Name: Pace Andersonville

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace  Other

Tracking Number: 707A

Examined By	<u>JM</u>
Labeled By	<u>PA</u>
Temped By	<u>—</u>

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

Thermometer Used: \_\_\_\_\_ Type of Ice: Wet Blue Mint

Cooler Temperature: Observed Temp \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to B+C

Comments:	Yes	No	NA	pH paper Lot#	D.P.D. Residual Chlorine Lot #
				<u>10031M</u>	<u>—</u>
Chain of Custody Present	<u>J</u>			1.	
Chain of Custody Filled Out: -Were client corrections present on COC	<u>J</u>			2.	
Chain of Custody Relinquished	<u>J</u>			3.	
Sampler Name & Signature on COC:		<u>J</u>		4.	
Sample Labels match COC: -Includes date/time/ID Matrix:				5.	<u>NO date/time on bottles</u>
Samples Arrived within Hold Time:	<u>J</u>			6.	
Short Hold Time Analysis (<72hr remaining):		<u>J</u>		7.	
Rush Turn Around Time Requested:		<u>J</u>		8.	
Sufficient Volume:	<u>J</u>			9.	
Correct Containers Used: -Pace Containers Used	<u>J</u>			10.	
Containers Intact:	<u>J</u>			11.	
Orthophosphate field filtered:			<u>J</u>	12.	
Hex Or Aqueous samples field filtered:			<u>J</u>	13.	
Organic Samples checked for dechlorination			<u>J</u>	14.	
Filtered volume received for dissolved tests:	<u>J</u>			15.	
All containers checked for preservation: exceptions: VOA, coliform, TOC, U&G, Phenolics, Radon, non-aqueous matrix	<u>J</u>			16.	
All containers meet method preservation requirements:	<u>J</u>			initial when completed: <u>JM</u>	Use/Type of Preservation: <u>PH<sub>2</sub></u>
6250C/D: Headspace in VOA Vials (> 6mm)			<u>J</u>	17.	Lot# of added Preservative: _____
624.3: Headspace in VOA Vials (6mm)			<u>J</u>	18.	
Trip Blank Present:			<u>J</u>	Trip blank custody seal present? YES or NO	
Rad Samples Screened <0.5 mrem/hr.	<u>J</u>			initial when completed: <u>JM</u>	Date: <u>5/11/23</u> Survey Meter SN: <u>4563</u>
Comments:					

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







May 19, 2023

Rob Whittington  
Pace Analytical Madisonville  
825 Industrial Rd  
Madisonville, KY 42431

RE: Project: 3043176  
Pace Project No.: 30583006

Dear Rob Whittington:

Enclosed are the analytical results for sample(s) received by the laboratory between April 28, 2023 and May 03, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Greensburg

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

Sincerely,

Carla Cmar  
carla.cmar@pacelabs.com  
(724)850-5600  
Project Manager

Enclosures

cc: Doug Wolfe, Pace Analytical Madisonville



## REPORT OF LABORATORY ANALYSIS

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### CERTIFICATIONS

Project: 3043176  
Pace Project No.: 30583006

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#### Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601  
ANAB DOD-ELAP Rad Accreditation #: L2417  
Alabama Certification #: 41590  
Arizona Certification #: AZ0734  
Arkansas Certification  
California Certification #: 04222CA  
Colorado Certification #: PA01547  
Connecticut Certification #: PH-0694  
Delaware Certification  
EPA Region 4 DW Rad  
Florida/TNI Certification #: E87683  
Georgia Certification #: C040  
Florida: Cert E871149 SEKS WET  
Guam Certification  
Hawaii Certification  
Idaho Certification  
Illinois Certification  
Indiana Certification  
Iowa Certification #: 391  
Kansas/TNI Certification #: E-10358  
Kentucky Certification #: KY90133  
KY WW Permit #: KY0098221  
KY WW Permit #: KY0000221  
Louisiana DHH/TNI Certification #: LA180012  
Louisiana DEQ/TNI Certification #: 4086  
Maine Certification #: 2017020  
Maryland Certification #: 308  
Massachusetts Certification #: M-PA1457  
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235  
Montana Certification #: Cert0082  
Nebraska Certification #: NE-OS-29-14  
Nevada Certification #: PA014572018-1  
New Hampshire/TNI Certification #: 297617  
New Jersey/TNI Certification #: PA051  
New Mexico Certification #: PA01457  
New York/TNI Certification #: 10888  
North Carolina Certification #: 42706  
North Dakota Certification #: R-190  
Ohio EPA Rad Approval: #41249  
Oregon/TNI Certification #: PA200002-010  
Pennsylvania/TNI Certification #: 65-00282  
Puerto Rico Certification #: PA01457  
Rhode Island Certification #: 65-00282  
South Dakota Certification  
Tennessee Certification #: 02867  
Texas/TNI Certification #: T104704188-17-3  
Utah/TNI Certification #: PA014572017-9  
USDA Soil Permit #: P330-17-00091  
Vermont Dept. of Health: ID# VT-0282  
Virgin Island/PADEP Certification  
Virginia/VELAP Certification #: 460198  
Washington Certification #: C868  
West Virginia DEP Certification #: 143  
West Virginia DHHR Certification #: 9964C  
Wisconsin Approve List for Rad  
Wyoming Certification #: 8TMS-L

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### REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: 3043176  
Pace Project No.: 30583006

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30583006001	3043176-01	Water	04/25/23 14:30	04/28/23 09:40
30583006002	3043176-01_MS	Water	04/25/23 14:30	05/03/23 11:08
30583006003	3043176-01_MSD	Water	04/25/23 14:30	05/03/23 11:08

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 3043176  
Pace Project No.: 30583006

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30583006001	3043176-01	EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
30583006002	3043176-01_MS	EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
30583006003	3043176-01_MSD	EPA 903.1	JLJ	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 3043176  
Pace Project No.: 30583006

Sample: 3043176-01		Lab ID: 30583006001	Collected: 04/25/23 14:30	Received: 04/28/23 09:40	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.118 ± 0.615 (1.28)</b> <b>C:NA T:95%</b>	pCi/L	05/17/23 15:14	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.696 ± 0.477 (0.928)</b> <b>C:81% T:87%</b>	pCi/L	05/11/23 16:17	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	<b>0.814 ± 1.09 (2.21)</b>	pCi/L	05/19/23 15:07	7440-14-4	

Sample: 3043176-01_MS		Lab ID: 30583006002	Collected: 04/25/23 14:30	Received: 05/03/23 11:08	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>96.88 %REC ± NA (NA)</b> <b>C:NA T:NA</b>	pCi/L	05/17/23 15:14	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>78.79 %REC ± NA (NA)</b> <b>C:NA T:NA</b>	pCi/L	05/11/23 16:17	15262-20-1	

Sample: 3043176-01_MSD		Lab ID: 30583006003	Collected: 04/25/23 14:30	Received: 05/03/23 11:08	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>90.11 %REC 7.24RPD ± NA (NA)</b> <b>C:NA T:NA</b>	pCi/L	05/17/23 15:14	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>96.66 %REC 20.37RPD ± NA (NA)</b> <b>C:NA T:NA</b>	pCi/L	05/11/23 16:17	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL - RADIOCHEMISTRY

Project: 3043176  
Pace Project No.: 30583006

---

QC Batch: 585444	Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1	Analysis Description: 903.1 Radium-226
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30583006001, 30583006002, 30583006003

---

METHOD BLANK: 2843355 Matrix: Water

Associated Lab Samples: 30583006001, 30583006002, 30583006003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0499 ± 0.228 (0.135) C:NA T:94%	pCi/L	05/17/23 15:01	

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

### REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: 3043176  
 Pace Project No.: 30583006

---

QC Batch: 585445	Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0	Analysis Description: 904.0 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30583006001, 30583006002, 30583006003

---

METHOD BLANK: 2843363 Matrix: Water  
 Associated Lab Samples: 30583006001, 30583006002, 30583006003

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.459 ± 0.319 (0.599) C:77% T:85%	pCi/L	05/11/23 16:16	

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

**REPORT OF LABORATORY ANALYSIS**

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## QUALIFIERS

Project: 3043176  
Pace Project No.: 30583006

---

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

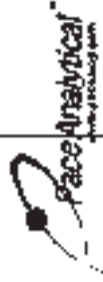
Project: 3043176  
Pace Project No.: 30583006

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30583006001	3043176-01	EPA 903.1	585444		
30583006002	3043176-01_MS	EPA 903.1	585444		
30583006003	3043176-01_MSD	EPA 903.1	585444		
30583006001	3043176-01	EPA 904.0	585445		
30583006002	3043176-01_MS	EPA 904.0	585445		
30583006003	3043176-01_MSD	EPA 904.0	585445		
30583006001	3043176-01	Total Radium Calculation	589438		

### REPORT OF LABORATORY ANALYSIS

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Chain of Custody



Workorder: 3043176

Workorder Name: Well Duplicate 1 Wilson 02 Owner Received Date: 4/26/2023

Results Requested By: Standard

Report To:

Subcontract To:

Requested Analysis

Pace Analytical Services, LLC  
 825 Industrial Road  
 Madisonville, KY 42409  
 270-821-7375  
 rob.whittington@pacelabs.com

Pace Analytical Services LLC Greensburg PA  
 1638 Rosey Town Rd Suite 2,3,4  
 Greensburg, PA 15601  
 (724) 850-5615

WO#: 30583006



Reserved Containers

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	EPA 903.1	EPA 904.0 Radium Sum Calc	LAB USE ONLY
1								
2	3043176-01		04/25/23 14:30	IR44-McCoy	Water	X	X	GC
3								
4								
5								
6								
7								
8								
9								
10								

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	Jessica Franklin	4/27/2023	[Signature]	4/28/2023	
2					
3					

Cooler Temperature on Receipt: \_\_\_\_\_ °C Custody Seal Y or N: \_\_\_\_\_ Received on Ice Y or N: \_\_\_\_\_ Sample Intact Y or N: \_\_\_\_\_  
 \*\*\*In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC  
 This chain of custody is considered complete as is since this information is available in the owner laboratory.

Friday, June 17, 2016 11:01:34 AM

FMT-ALL-C-002 rev.00 24 March 2009

Page 1 of 1

**SUBCONTRACT ORDER**

Pace Analytical Services, LLC Kentucky

3043176

**SENDING LABORATORY:**

Pace Analytical Services, LLC Kentucky

PO BOX 907

Madisonville, KY 42431

Phone: (270) 821-7375

Fax: 844-270-7904

Project Manager: Rob Whittington

**RECEIVING LABORATORY:**

Pace Analytical Services LLC Greensburg PA

1638 Rosey Town Rd Suite 2,3,4

Greensburg, PA 15601

Phone: (724) 850-5615

Fax:

Analysis	Expires	Laboratory ID	Comments
Sample ID: 3043176-01	Water	Sampled:04/23/2023 14:30	Specific Method
Radium Total (sub)	10/22/2023 14:30	RPA 9040 Radium Sum C	
Radium 228 (sub)	10/22/2023 14:30	EPA 9040 Radium Sum C	
Radium 226 (sub)	10/22/2023 14:30	EPA 9031	

**WO#: 30583006**

PH: RDC      Due Date: 05/18/23

CLIENT: PACE\_44\_NWKY

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_



DC# Title: ENV-FRM-GBUR-0088 v04\_Sample Condition Upon Receipt  
Pittsburgh

WO#: 30583006

Effective Date: 02/03/2023

PR: ADC

Due Date: 05/19/23

Client Name: Page Manufacturing

CLIENT: PAGE\_44\_NVKY

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Page  Other

Tracking Number: 7071

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

Thermometer Used: \_\_\_\_\_ Type of Ice: Wet Blue (none)

Cooler Temperature: Observed Temp \_\_\_\_\_ °C Correction Factor \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C

Temp should be above freezing to 6°C

Examined By	<u>SM</u>
Labeled By	<u>SM</u>
Temped By	

Comments:	pH paper Lot# <u>1007.01</u>			D.P.D. Residual Chlorine Lot#
	Yes	No	NA	
Chain of Custody Present	<input checked="" type="checkbox"/>			1.
Chain of Custody Filled Out: -Were client corrections present on COC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		2.
Chain of Custody Relinquished	<input checked="" type="checkbox"/>			3.
Sampler Name & Signature on COC:		<input checked="" type="checkbox"/>		4.
Sample labels match COC: -Includes date/time/ID Matrix		<input checked="" type="checkbox"/>		5. <u>No date/time on bottles</u>
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>			6.
Short Hold Time Analysis (<72hr remaining):		<input checked="" type="checkbox"/>		7.
Rush Turn Around Time Requested:		<input checked="" type="checkbox"/>		8.
Sufficient Volume:	<input checked="" type="checkbox"/>			9.
Correct Containers Used: -Page Containers Used	<input checked="" type="checkbox"/>			10.
Containers Intact:	<input checked="" type="checkbox"/>			11.
Orthophosphate field filtered:			<input checked="" type="checkbox"/>	12.
Hex Or Aqueous samples field filtered:			<input checked="" type="checkbox"/>	13.
Organic Samples checked for dechlorination			<input checked="" type="checkbox"/>	14.
Filtered volume received for dissolved tests:			<input checked="" type="checkbox"/>	15.
All containers checked for preservation: exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix	<input checked="" type="checkbox"/>			16. <u>Added 5.0 ml of HNO<sub>3</sub> to all bottles.</u>
All containers meet method preservation requirements:		<input checked="" type="checkbox"/>		Initial when completed <u>SM</u> Date/Time of Preservation <u>5/11/23 15:20</u>
				Label of added Preservative <u>HNO<sub>3</sub> 2/2007</u>
8260/0: Headspace in VOA Vials (> 6mm)			<input checked="" type="checkbox"/>	17.
624.1: Headspace in VOA Vials (0mm)			<input checked="" type="checkbox"/>	18.
Trip Blank Present:			<input checked="" type="checkbox"/>	Trip blank custody seal present? YES or NO
Rad Samples Screened <0.5 mrem/hr.	<input checked="" type="checkbox"/>			Initial when completed <u>SM</u> Date: <u>5/11/23</u> Survey Meter SN: <u>4567</u>
Comments:				

Note: For RC compliance samples with discrepancies, a copy of this form must be sent to the DENR Certification Office. PM Review is documented electronically in LIMS through the GRF Review module in the Workorder Edit Screen.





## Certificate of Analysis 3100291

Dawn Storckman  
Big Rivers Electric Corporation Wilson Station  
PO Box 24  
Henderson, KY 42419

Customer ID: 44-100168  
Report Printed: 01/05/2024 14:51

Project Name: Wilson Groundwater Wells 092-00004

Workorder: 3100291

Dear Dawn Storckman

Enclosed are the analytical results for samples received by the laboratory 10/04/2023 11:25.

The results relate to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services LLC Kentucky - Madisonville

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



#460210 Madisonville, KY  
#460291 Pikeville, KY

Rob Whittington, Project Manager

*This page is included as part of the Analytical Report and must be retained as a permanent record thereof.*





**SAMPLE SUMMARY**

Lab ID	Client Sample ID/Alias	Matrix	Date Collected	Date Received	Sampled By
3100291-09	MW4D/	Groundwater	10/02/2023 10:40	10/04/2023 11:25	Dave Medley
3100291-11	MW5/	Groundwater	10/02/2023 15:55	10/04/2023 11:25	Dave Medley
3100291-12	Mercury Field Blank MW-5/	Water	10/02/2023 15:55	10/04/2023 11:25	Dave Medley
3100291-13	MW6/	Groundwater	10/03/2023 10:45	10/04/2023 11:25	Travis Sneed
3100291-14	Mercury Field Blank MW-6/	Water	10/03/2023 10:45	10/04/2023 11:25	Travis Sneed
3100291-15	MW7/	Groundwater	10/03/2023 12:10	10/04/2023 11:25	Travis Sneed
3100291-16	Mercury Field Blank MW-7/	Water	10/03/2023 12:10	10/04/2023 11:25	Travis Sneed
3100291-17	MW8/	Groundwater	10/02/2023 14:35	10/04/2023 11:25	Travis Sneed
3100291-18	Mercury Field Blank MW-8/	Water	10/02/2023 14:35	10/04/2023 11:25	Travis Sneed
3100291-19	MW10/	Groundwater	10/03/2023 13:05	10/04/2023 11:25	Travis Sneed
3100291-20	Mercury Field Blank MW-10/	Water	10/03/2023 13:05	10/04/2023 11:25	Travis Sneed
3100291-21	MW-10D/	Groundwater	10/02/2023 09:45	10/04/2023 11:25	Dawn Storckman
3100291-22	Mercury Field Blank MW-10D/	Water	10/02/2023 09:45	10/04/2023 11:25	Dawn Storckman
3100291-23	MW102/	Groundwater	10/02/2023 12:30	10/04/2023 11:25	Travis Sneed
3100291-24	Mercury Field Blank MW-102/	Water	10/02/2023 12:30	10/04/2023 11:25	Travis Sneed
3100291-25	MW104/	Groundwater	10/02/2023 09:30	10/04/2023 11:25	Travis Sneed
3100291-26	Mercury Field Blank MW-104/	Water	10/02/2023 09:30	10/04/2023 11:25	Travis Sneed
3100291-27	MW-105R/	Groundwater	10/02/2023 08:35	10/04/2023 11:25	Dave Medley
3100291-28	Mercury Field Blank MW-105R/	Water	10/02/2023 08:35	10/04/2023 11:25	Dave Medley
3100291-29	MW110/	Groundwater	10/02/2023 07:35	10/04/2023 11:25	Travis Sneed
3100291-30	Mercury Field Blank MW-110/	Water	10/02/2023 07:35	10/04/2023 11:25	Travis Sneed
3100291-31	MW-111/	Groundwater	10/02/2023 12:25	10/04/2023 11:25	Dawn Storckman
3100291-32	Mercury Field Blank MW-111/	Water	10/02/2023 12:25	10/04/2023 11:25	Dawn Storckman
3100291-33	MW-112/	Groundwater	10/02/2023 13:00	10/04/2023 11:25	Dave Medley
3100291-34	Mercury Field Blank MW-112/	Water	10/02/2023 13:00	10/04/2023 11:25	Dave Medley
3100291-35	MW-113/	Groundwater	10/02/2023 08:30	10/04/2023 11:25	Dawn Storckman
3100291-36	Mercury Field Blank MW-113/	Water	10/02/2023 08:30	10/04/2023 11:25	Dawn Storckman
3100291-37	MW-114/	Groundwater	10/02/2023 10:45	10/04/2023 11:25	Travis Sneed



Pace Analytical Services, LLC

P.O. Box 907

Madisonville, KY 42431

270.821.7375

[www.pacelabs.com](http://www.pacelabs.com)

### SAMPLE SUMMARY

Lab ID	Client Sample ID/Alias	Matrix	Date Collected	Date Received	Sampled By
3100291-38	Mercury Field Blank MW-114/	Water	10/02/2023 10:45	10/04/2023 11:25	Travis Sneed
3100291-39	Well Duplicate 1/	Groundwater	10/02/2023 07:52	10/04/2023 11:25	Travis Sneed
3100291-40	Mercury Field Blank Well Dup-1/	Water	10/02/2023 07:52	10/04/2023 11:25	Travis Sneed
3100291-41	Well Duplicate 2/	Groundwater	10/02/2023 15:55	10/04/2023 11:25	Dave Medley
3100291-42	Mercury Field Blank Well Dup-2/	Water	10/02/2023 15:55	10/04/2023 11:25	Dave Medley
3100291-43	Field Blank/	Water	10/03/2023 11:20	10/04/2023 11:25	Travis Sneed
3100291-44	Mercury Field Blank/	Groundwater	10/03/2023 11:20	10/04/2023 11:25	Travis Sneed



<u>LabNumber</u>	<u>Measurement</u>	<u>Value</u>
3100291-09	Field Conductance	4920
	Field pH	6.18
	Field Temp (C)	22.63
3100291-11	Field Conductance	3900
	Field pH	6.24
	Field Temp (C)	23.33
3100291-13	Field Conductance	3270
	Field Dissolved Oxygen	0.60
	Field pH	6.31
	Field Temp (C)	20.31
	Field Turbidity	0.7
3100291-15	Field Conductance	2300
	Field Dissolved Oxygen	0.49
	Field pH	6.30
	Field Temp (C)	26.07
	Field Turbidity	88.2
3100291-17	Field Conductance	1770
	Field Dissolved Oxygen	0.49
	Field pH	6.63
	Field Temp (C)	20.50
	Field Turbidity	169
3100291-19	Field Conductance	3600
	Field Dissolved Oxygen	0.37
	Field pH	5.71
	Field Temp (C)	24.02
	Field Turbidity	1.7
3100291-21	Field Conductance	3370
	Field pH	6.37
	Field Temp (C)	21.51
3100291-23	Field Conductance	1160
	Field Dissolved Oxygen	2.29
	Field pH	7.42
	Field Temp (C)	19.21
	Field Turbidity	164
3100291-25	Field Conductance	2050
	Field Dissolved Oxygen	0.52
	Field pH	8.55
	Field Temp (C)	18.86
	Field Turbidity	293
3100291-27	Field Conductance	1280
	Field pH	6.17
	Field Temp (C)	18.24
3100291-29	Field Conductance	443
	Field Dissolved Oxygen	4.2
	Field pH	6.84
	Field Temp (C)	17.84
	Field Turbidity	204
3100291-31	Field Conductance	3420
	Field pH	6.24
	Field Temp (C)	21.99
3100291-33	Field Conductance	1500
	Field pH	6.28
	Field Temp (C)	19.19
3100291-35	Field Conductance	2100
	Field pH	6.32
	Field Temp (C)	18.94
3100291-37	Field Conductance	979



**Pace Analytical Services, LLC**

P.O. Box 907

Madisonville, KY 42431

270.821.7375

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3100291-37	Field Dissolved Oxygen	0.41
	Field pH	5.55
	Field Temp (C)	21.13
	Field Turbidity	9.2
3100291-39	Field Conductance	443
	Field Dissolved Oxygen	4.2
	Field pH	6.84
	Field Temp (C)	17.84
	Field Turbidity	204
3100291-41	Field Conductance	3900
	Field pH	6.24
	Field Temp (C)	23.33

**Work Order Comments:**

**Corrected Report:**

This report has been issued as a revision of the previous report dated 10/31/23@1429. Lead result has been added to MW1.



**ANALYTICAL RESULTS**

Lab Sample ID: **3100291-09**  
 Description: **MW4D**

Sample Collection Date Time: 10/02/2023 10:40  
 Sample Received Date Time: 10/04/2023 11:25

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:08	AKB
<b>Arsenic</b>	<b>0.0033</b>		mg/L	0.0010	0.0004	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:08	AKB
<b>Barium</b>	<b>0.015</b>		mg/L	0.004	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:08	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:08	AKB
<b>Boron</b>	<b>8.76</b>	D1	mg/L	1.00	1.00	SW846 6010 B	10/05/2023 11:34	10/06/2023 15:27	MRWD
Cadmium	ND	u	mg/L	0.0010	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:08	AKB
<b>Calcium</b>	<b>968</b>	D1	mg/L	40.0	13.0	SW846 6010 B	10/05/2023 11:34	10/06/2023 15:30	MRWD
Chromium	ND	u	mg/L	0.0020	0.0006	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:08	AKB
<b>Cobalt</b>	<b>0.025</b>		mg/L	0.004	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:08	AKB
Copper	ND	u	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:08	AKB
<b>Iron</b>	<b>21.7</b>	D1	mg/L	1.00	0.500	SW846 6010 B	10/05/2023 11:34	10/06/2023 15:27	MRWD
Lead	ND	u	mg/L	0.002	0.0005	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:08	AKB
<b>Lithium</b>	<b>0.16</b>		mg/L	0.02	0.005	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:08	AKB
<b>Magnesium</b>	<b>373</b>	D1	mg/L	20.0	9.00	SW846 6010 B	10/05/2023 11:34	10/06/2023 15:30	MRWD
<b>Molybdenum</b>	<b>0.008</b>	J	mg/L	0.01	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:08	AKB
<b>Nickel</b>	<b>0.046</b>		mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:08	AKB
<b>Potassium</b>	<b>39.3</b>	D1	mg/L	5.00	2.20	SW846 6010 B	10/05/2023 11:34	10/06/2023 15:27	MRWD
<b>Selenium</b>	<b>0.001</b>	J	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:08	AKB
<b>Sodium</b>	<b>293</b>	D1	mg/L	26.0	10.0	SW846 6010 B	10/05/2023 11:34	10/06/2023 15:30	MRWD
Thallium	ND	u	mg/L	0.0020	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:08	AKB
<b>Zinc</b>	<b>0.05</b>		mg/L	0.02	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:08	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	10/05/2023 10:07	10/05/2023 13:57	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>385</b>		mg/L	4		2320 B-2011	10/06/2023 16:36	10/06/2023 16:36	DJK
Carbonate Alkalinity as CaCO3	ND	u	mg/L	4		2320 B-2011	10/06/2023 16:36	10/06/2023 16:36	DJK
<b>Total Alkalinity</b>	<b>385</b>		mg/L	4		2320 B-2011	10/06/2023 16:36	10/06/2023 16:36	DJK
<b>Chemical Oxygen Demand</b>	<b>109</b>		mg/L	13	8	HACH 8000	10/11/2023 08:53	10/12/2023 10:35	HMF
<b>Specific Conductance (Lab)</b>	<b>4900</b>		umhos/cm	1	1	2510 B-2011	10/04/2023 13:30	10/05/2023 12:52	AED
<b>Hardness as CaCO3</b>	<b>2640</b>	D1, D	mg/L	5	5	2340 C (as HACH 8226)	10/11/2023 13:39	10/11/2023 13:39	CLL
<b>Total Dissolved Solids</b>	<b>4200</b>		mg/L	250	250	2540 C-2015	10/05/2023 12:00	10/05/2023 12:00	HAG
<b>Total Organic Carbon</b>	<b>0.9</b>		mg/L	0.5	0.4	5310 C-2014	10/11/2023 16:38	10/17/2023 05:21	HMF

**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
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**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>0.293</b>	_Sub	pCi/L			EPA 903.1	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>See Attached Subcontract Report</b>	<b>1.69</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>Radium</b>	<b>1.98</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>See Attached Subcontract Report</b>	<b>1.98</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>934</b>	D	mg/L	5.0	3.6	EPA 300.0 REV 2.1	10/13/2023 15:03	10/13/2023 15:03	CSC
<b>Fluoride</b>	<b>0.22</b>		mg/L	0.20		EPA 300.0 REV 2.1	10/10/2023 01:15	10/10/2023 01:15	CSC
<b>Sulfate</b>	<b>2460</b>	D	mg/L	10.0	10.0	EPA 300.0 REV 2.1	10/13/2023 15:03	10/13/2023 15:03	CSC



**ANALYTICAL RESULTS**

Lab Sample ID: **3100291-11**  
 Description: **MW5**

Sample Collection Date Time: 10/02/2023 15:55  
 Sample Received Date Time: 10/04/2023 11:25

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:10	AKB
<b>Arsenic</b>	<b>0.0028</b>		mg/L	0.0010	0.0004	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:10	AKB
<b>Barium</b>	<b>0.011</b>		mg/L	0.004	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:10	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:10	AKB
<b>Boron</b>	<b>0.75</b>	M2	mg/L	0.10	0.10	SW846 6010 B	10/05/2023 11:34	10/06/2023 15:33	MRWD
Cadmium	ND	u	mg/L	0.0010	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:10	AKB
<b>Calcium</b>	<b>573</b>	D1, M3	mg/L	40.0	13.0	SW846 6010 B	10/05/2023 11:34	10/06/2023 15:40	MRWD
Chromium	ND	u	mg/L	0.0020	0.0006	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:10	AKB
<b>Cobalt</b>	<b>0.005</b>		mg/L	0.004	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:10	AKB
Copper	ND	u	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:10	AKB
<b>Iron</b>	<b>7.05</b>		mg/L	0.100	0.050	SW846 6010 B	10/05/2023 11:34	10/06/2023 15:33	MRWD
Lead	ND	u	mg/L	0.002	0.0005	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:10	AKB
<b>Lithium</b>	<b>0.04</b>		mg/L	0.02	0.005	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:10	AKB
<b>Magnesium</b>	<b>266</b>	D1, M3	mg/L	20.0	9.00	SW846 6010 B	10/05/2023 11:34	10/06/2023 15:40	MRWD
<b>Molybdenum</b>	<b>0.004</b>	J	mg/L	0.01	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:10	AKB
<b>Nickel</b>	<b>0.004</b>		mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:10	AKB
<b>Potassium</b>	<b>8.23</b>		mg/L	0.50	0.22	SW846 6010 B	10/05/2023 11:34	10/06/2023 15:33	MRWD
Selenium	ND	u	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:10	AKB
<b>Sodium</b>	<b>77.1</b>	D1, M1	mg/L	2.60	1.00	SW846 6010 B	10/05/2023 11:34	10/06/2023 15:37	MRWD
Thallium	ND	u	mg/L	0.0020	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:10	AKB
<b>Zinc</b>	<b>0.01</b>	J	mg/L	0.02	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:10	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	10/05/2023 10:07	10/05/2023 14:02	TML

**M2**

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>500</b>		mg/L	4		2320 B-2011	10/06/2023 16:43	10/06/2023 16:43	DJK
Carbonate Alkalinity as CaCO3	ND	u	mg/L	4		2320 B-2011	10/06/2023 16:43	10/06/2023 16:43	DJK
<b>Total Alkalinity</b>	<b>500</b>		mg/L	4		2320 B-2011	10/06/2023 16:43	10/06/2023 16:43	DJK
<b>Chemical Oxygen Demand</b>	<b>27</b>		mg/L	13	8	HACH 8000	10/11/2023 08:53	10/12/2023 10:35	HMF
<b>Specific Conductance (Lab)</b>	<b>4090</b>		umhos/cm	1	1	2510 B-2011	10/04/2023 13:36	10/05/2023 13:58	AED
<b>Hardness as CaCO3</b>	<b>2960</b>	D1, D	mg/L	5	5	2340 C (as HACH 8226)	10/11/2023 13:39	10/11/2023 13:39	CLL
<b>Total Dissolved Solids</b>	<b>3680</b>		mg/L	250	250	2540 C-2015	10/05/2023 12:00	10/05/2023 12:00	HAG
<b>Total Organic Carbon</b>	<b>1.9</b>		mg/L	0.5	0.4	5310 C-2014	10/11/2023 16:38	10/12/2023 18:53	HMF





**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>0.115</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 903.1</b>	<b>10/31/2023 13:40</b>	<b>10/31/2023 13:42</b>	<b>RCW</b>
<b>See Attached Subcontract Report</b>	<b>1.81</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>10/31/2023 13:40</b>	<b>10/31/2023 13:42</b>	<b>RCW</b>
<b>See Attached Subcontract Report</b>	<b>1.93</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>10/31/2023 13:40</b>	<b>10/31/2023 13:42</b>	<b>RCW</b>
<b>Radium</b>	<b>1.93</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>10/31/2023 13:40</b>	<b>10/31/2023 13:42</b>	<b>RCW</b>

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>320</b>	<b>D</b>	<b>mg/L</b>	<b>2.5</b>	<b>1.8</b>	<b>EPA 300.0 REV 2.1</b>	<b>10/13/2023 15:58</b>	<b>10/13/2023 15:58</b>	<b>CSC</b>
<b>Fluoride</b>	<b>ND</b>	<b>u</b>	<b>mg/L</b>	<b>0.20</b>		<b>EPA 300.0 REV 2.1</b>	<b>10/10/2023 01:43</b>	<b>10/10/2023 01:43</b>	<b>CSC</b>
<b>Sulfate</b>	<b>1950</b>	<b>D</b>	<b>mg/L</b>	<b>20.0</b>	<b>20.0</b>	<b>EPA 300.0 REV 2.1</b>	<b>10/18/2023 13:50</b>	<b>10/18/2023 13:50</b>	<b>CSC</b>



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### ANALYTICAL RESULTS

Lab Sample ID: **3100291-12**  
Description: **Mercury Field Blank MW-5**

Sample Collection Date Time: 10/02/2023 15:55

Sample Received Date Time: 10/04/2023 11:25

#### Metals by EPA 200 Series Methods Madisonville

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	10/05/2023 10:07	10/05/2023 14:59	TML



**ANALYTICAL RESULTS**

Lab Sample ID: **3100291-13**  
 Description: **MW6**

Sample Collection Date Time: 10/03/2023 10:45  
 Sample Received Date Time: 10/04/2023 11:25

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:12	AKB
<b>Arsenic</b>	<b>0.0054</b>		mg/L	0.0010	0.0004	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:12	AKB
<b>Barium</b>	<b>0.014</b>		mg/L	0.004	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:12	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:12	AKB
<b>Boron</b>	<b>0.71</b>		mg/L	0.10	0.10	SW846 6010 B	10/05/2023 11:34	10/06/2023 16:06	MRWD
Cadmium	ND	u	mg/L	0.0010	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:12	AKB
<b>Calcium</b>	<b>504</b>	D1	mg/L	40.0	13.0	SW846 6010 B	10/05/2023 11:34	10/06/2023 16:12	MRWD
Chromium	ND	u	mg/L	0.0020	0.0006	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:12	AKB
<b>Cobalt</b>	<b>0.007</b>		mg/L	0.004	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:12	AKB
Copper	ND	u	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:12	AKB
<b>Iron</b>	<b>6.12</b>		mg/L	0.100	0.050	SW846 6010 B	10/05/2023 11:34	10/06/2023 16:06	MRWD
Lead	ND	u	mg/L	0.002	0.0005	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:12	AKB
<b>Lithium</b>	<b>0.04</b>		mg/L	0.02	0.005	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:12	AKB
<b>Magnesium</b>	<b>230</b>	D1	mg/L	20.0	9.00	SW846 6010 B	10/05/2023 11:34	10/06/2023 16:12	MRWD
<b>Molybdenum</b>	<b>0.007</b>	J	mg/L	0.01	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:12	AKB
<b>Nickel</b>	<b>0.014</b>		mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:12	AKB
<b>Potassium</b>	<b>8.22</b>		mg/L	0.50	0.22	SW846 6010 B	10/05/2023 11:34	10/06/2023 16:06	MRWD
Selenium	ND	u	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:12	AKB
<b>Sodium</b>	<b>35.4</b>	D1	mg/L	2.60	1.00	SW846 6010 B	10/05/2023 11:34	10/06/2023 16:09	MRWD
Thallium	ND	u	mg/L	0.0020	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:12	AKB
<b>Zinc</b>	<b>0.01</b>	J	mg/L	0.02	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:12	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	10/05/2023 10:07	10/05/2023 14:08	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>523</b>		mg/L	4		2320 B-2011	10/06/2023 16:50	10/06/2023 16:50	DJK
Carbonate Alkalinity as CaCO3	ND	u	mg/L	4		2320 B-2011	10/06/2023 16:50	10/06/2023 16:50	DJK
<b>Total Alkalinity</b>	<b>523</b>		mg/L	4		2320 B-2011	10/06/2023 16:50	10/06/2023 16:50	DJK
<b>Chemical Oxygen Demand</b>	<b>9</b>	J	mg/L	13	8	HACH 8000	10/11/2023 08:53	10/12/2023 10:35	HMF
<b>Specific Conductance (Lab)</b>	<b>3110</b>		umhos/cm	1	1	2510 B-2011	10/04/2023 13:30	10/05/2023 12:52	AED
<b>Hardness as CaCO3</b>	<b>2330</b>	D1, D	mg/L	5	5	2340 C (as HACH 8226)	10/11/2023 13:39	10/11/2023 13:39	CLL
<b>Total Dissolved Solids</b>	<b>2820</b>		mg/L	100	100	2540 C-2015	10/05/2023 12:00	10/05/2023 12:00	HAG
<b>Total Organic Carbon</b>	<b>2.1</b>		mg/L	0.5	0.4	5310 C-2014	10/11/2023 16:38	10/12/2023 19:14	HMF

**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
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**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>0.885</b>	_Sub	pCi/L			EPA 903.1	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>See Attached Subcontract Report</b>	<b>1.09</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>See Attached Subcontract Report</b>	<b>1.98</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>Radium</b>	<b>1.98</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>33.7</b>		mg/L	0.5	0.4	EPA 300.0 REV 2.1	10/10/2023 02:10	10/10/2023 02:10	CSC
Fluoride	ND	u	mg/L	0.20		EPA 300.0 REV 2.1	10/10/2023 02:10	10/10/2023 02:10	CSC
<b>Sulfate</b>	<b>3140</b>	D	mg/L	20.0	20.0	EPA 300.0 REV 2.1	10/13/2023 16:53	10/13/2023 16:53	CSC



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### ANALYTICAL RESULTS

Lab Sample ID: **3100291-14**  
Description: **Mercury Field Blank MW-6**

Sample Collection Date Time: 10/03/2023 10:45

Sample Received Date Time: 10/04/2023 11:25

#### Metals by EPA 200 Series Methods Madisonville

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	10/05/2023 10:07	10/05/2023 15:04	TML



**ANALYTICAL RESULTS**

Lab Sample ID: **3100291-15**  
 Description: **MW7**

Sample Collection Date Time: 10/03/2023 12:10  
 Sample Received Date Time: 10/04/2023 11:25

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:15	AKB
<b>Arsenic</b>	<b>0.0040</b>		mg/L	0.0010	0.0004	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:15	AKB
<b>Barium</b>	<b>0.016</b>		mg/L	0.004	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:15	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:15	AKB
<b>Boron</b>	<b>3.01</b>	D1	mg/L	1.00	1.00	SW846 6010 B	10/05/2023 11:34	10/06/2023 16:19	MRWD
Cadmium	ND	u	mg/L	0.0010	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:15	AKB
<b>Calcium</b>	<b>343</b>	D1	mg/L	40.0	13.0	SW846 6010 B	10/05/2023 11:34	10/06/2023 16:22	MRWD
<b>Chromium</b>	<b>0.0011</b>	J	mg/L	0.0020	0.0006	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:15	AKB
Cobalt	ND	u	mg/L	0.004	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:15	AKB
Copper	ND	u	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:15	AKB
<b>Iron</b>	<b>5.94</b>		mg/L	0.100	0.050	SW846 6010 B	10/05/2023 11:34	10/06/2023 16:15	MRWD
Lead	ND	u	mg/L	0.002	0.0005	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:15	AKB
<b>Lithium</b>	<b>0.03</b>		mg/L	0.02	0.005	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:15	AKB
<b>Magnesium</b>	<b>124</b>	D1	mg/L	20.0	9.00	SW846 6010 B	10/05/2023 11:34	10/06/2023 16:22	MRWD
<b>Molybdenum</b>	<b>0.005</b>	J	mg/L	0.01	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:15	AKB
<b>Nickel</b>	<b>0.005</b>		mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:15	AKB
<b>Potassium</b>	<b>5.40</b>		mg/L	0.50	0.22	SW846 6010 B	10/05/2023 11:34	10/06/2023 16:15	MRWD
Selenium	ND	u	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:15	AKB
<b>Sodium</b>	<b>31.2</b>	D1	mg/L	2.60	1.00	SW846 6010 B	10/05/2023 11:34	10/06/2023 16:19	MRWD
Thallium	ND	u	mg/L	0.0020	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:15	AKB
<b>Zinc</b>	<b>0.01</b>	J	mg/L	0.02	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:15	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	10/05/2023 10:07	10/05/2023 14:13	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>283</b>		mg/L	4		2320 B-2011	10/06/2023 16:58	10/06/2023 16:58	DJK
Carbonate Alkalinity as CaCO3	ND	u	mg/L	4		2320 B-2011	10/06/2023 16:58	10/06/2023 16:58	DJK
<b>Total Alkalinity</b>	<b>283</b>		mg/L	4		2320 B-2011	10/06/2023 16:58	10/06/2023 16:58	DJK
<b>Chemical Oxygen Demand</b>	<b>10</b>	J	mg/L	13	8	HACH 8000	10/11/2023 08:53	10/12/2023 10:35	HMF
<b>Specific Conductance (Lab)</b>	<b>2190</b>		umhos/cm	1	1	2510 B-2011	10/04/2023 13:30	10/05/2023 12:52	AED
<b>Hardness as CaCO3</b>	<b>1350</b>	D	mg/L	2	2	2340 C (as HACH 8226)	10/10/2023 10:45	10/10/2023 10:45	CLL
<b>Total Dissolved Solids</b>	<b>2230</b>		mg/L	100	100	2540 C-2015	10/05/2023 12:00	10/05/2023 12:00	HAG
<b>Total Organic Carbon</b>	<b>1.5</b>		mg/L	0.5	0.4	5310 C-2014	10/11/2023 16:38	10/12/2023 19:35	HMF

**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
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**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>0.389</b>	_Sub	pCi/L			EPA 903.1	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>See Attached Subcontract Report</b>	<b>0.204</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>See Attached Subcontract Report</b>	<b>0.593</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>Radium</b>	<b>0.593</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>76.0</b>		mg/L	0.5	0.4	EPA 300.0 REV 2.1	10/10/2023 02:37	10/10/2023 02:37	CSC
<b>Fluoride</b>	<b>0.23</b>		mg/L	0.20		EPA 300.0 REV 2.1	10/10/2023 02:37	10/10/2023 02:37	CSC
<b>Sulfate</b>	<b>1630</b>	D	mg/L	10.0	10.0	EPA 300.0 REV 2.1	10/13/2023 17:20	10/13/2023 17:20	CSC





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### ANALYTICAL RESULTS

Lab Sample ID: **3100291-16**  
Description: **Mercury Field Blank MW-7**

Sample Collection Date Time: 10/03/2023 12:10

Sample Received Date Time: 10/04/2023 11:25

#### Metals by EPA 200 Series Methods Madisonville

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	10/05/2023 10:07	10/05/2023 15:10	TML



**ANALYTICAL RESULTS**

Lab Sample ID: **3100291-17**  
 Description: **MW8**

Sample Collection Date Time: 10/02/2023 14:35  
 Sample Received Date Time: 10/04/2023 11:25

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:17	AKB
<b>Arsenic</b>	<b>0.0056</b>		mg/L	0.0010	0.0004	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:17	AKB
<b>Barium</b>	<b>0.021</b>		mg/L	0.004	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:17	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:17	AKB
Boron	ND	D1, U	mg/L	1.00	1.00	SW846 6010 B	10/05/2023 11:34	10/06/2023 16:28	MRWD
Cadmium	ND	u	mg/L	0.0010	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:17	AKB
<b>Calcium</b>	<b>214</b>	D1	mg/L	40.0	13.0	SW846 6010 B	10/05/2023 11:34	10/06/2023 16:31	MRWD
<b>Chromium</b>	<b>0.0016</b>	J	mg/L	0.0020	0.0006	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:17	AKB
Cobalt	ND	u	mg/L	0.004	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:17	AKB
<b>Copper</b>	<b>0.002</b>	J	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:17	AKB
<b>Iron</b>	<b>20.9</b>	D1	mg/L	1.00	0.500	SW846 6010 B	10/05/2023 11:34	10/06/2023 16:28	MRWD
<b>Lead</b>	<b>0.0006</b>	J	mg/L	0.002	0.0005	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:17	AKB
<b>Lithium</b>	<b>0.009</b>	J	mg/L	0.02	0.005	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:17	AKB
<b>Magnesium</b>	<b>110</b>	D1	mg/L	20.0	9.00	SW846 6010 B	10/05/2023 11:34	10/06/2023 16:31	MRWD
<b>Molybdenum</b>	<b>0.01</b>		mg/L	0.01	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:17	AKB
<b>Nickel</b>	<b>0.004</b>		mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:17	AKB
<b>Potassium</b>	<b>2.49</b>		mg/L	0.50	0.22	SW846 6010 B	10/05/2023 11:34	10/06/2023 16:25	MRWD
Selenium	ND	u	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:17	AKB
<b>Sodium</b>	<b>28.7</b>	D1	mg/L	2.60	1.00	SW846 6010 B	10/05/2023 11:34	10/06/2023 16:28	MRWD
Thallium	ND	u	mg/L	0.0020	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:17	AKB
<b>Zinc</b>	<b>0.01</b>	J	mg/L	0.02	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:17	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	10/05/2023 10:07	10/05/2023 14:25	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>304</b>		mg/L	4		2320 B-2011	10/06/2023 17:04	10/06/2023 17:04	DJK
Carbonate Alkalinity as CaCO3	ND	u	mg/L	4		2320 B-2011	10/06/2023 17:04	10/06/2023 17:04	DJK
<b>Total Alkalinity</b>	<b>304</b>		mg/L	4		2320 B-2011	10/06/2023 17:04	10/06/2023 17:04	DJK
<b>Chemical Oxygen Demand</b>	<b>17</b>		mg/L	13	8	HACH 8000	10/11/2023 08:53	10/12/2023 10:35	HMF
<b>Specific Conductance (Lab)</b>	<b>1780</b>		umhos/cm	1	1	2510 B-2011	10/04/2023 13:30	10/05/2023 12:52	AED
<b>Hardness as CaCO3</b>	<b>1020</b>	D	mg/L	2	2	2340 C (as HACH 8226)	10/10/2023 10:45	10/10/2023 10:45	CLL
<b>Total Dissolved Solids</b>	<b>1640</b>		mg/L	100	100	2540 C-2015	10/05/2023 12:00	10/05/2023 12:00	HAG
<b>Total Organic Carbon</b>	<b>3.0</b>		mg/L	0.5	0.4	5310 C-2014	10/11/2023 16:38	10/12/2023 19:56	HMF

**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
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**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>0.314</b>	_Sub	pCi/L			EPA 903.1	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>See Attached Subcontract Report</b>	<b>0.763</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>See Attached Subcontract Report</b>	<b>1.08</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>Radium</b>	<b>1.08</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>3.7</b>		mg/L	0.5	0.4	EPA 300.0 REV 2.1	10/10/2023 03:05	10/10/2023 03:05	CSC
<b>Fluoride</b>	<b>0.25</b>		mg/L	0.20		EPA 300.0 REV 2.1	10/10/2023 03:05	10/10/2023 03:05	CSC
<b>Sulfate</b>	<b>1140</b>	D	mg/L	5.0	5.0	EPA 300.0 REV 2.1	10/13/2023 17:47	10/13/2023 17:47	CSC



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### ANALYTICAL RESULTS

Lab Sample ID: **3100291-18**  
Description: **Mercury Field Blank MW-8**

Sample Collection Date Time: 10/02/2023 14:35

Sample Received Date Time: 10/04/2023 11:25

#### Metals by EPA 200 Series Methods Madisonville

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	3.2	J	ng/L	5.0	1.8	EPA 245.7 REV 2	10/05/2023 10:07	10/05/2023 15:16	TML



**ANALYTICAL RESULTS**

Lab Sample ID: **3100291-19**

Description: **MW10**

Sample Collection Date Time: 10/03/2023 13:05

Sample Received Date Time: 10/04/2023 11:25

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:19	AKB
<b>Arsenic</b>	<b>0.0020</b>		mg/L	0.0010	0.0004	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:19	AKB
<b>Barium</b>	<b>0.009</b>		mg/L	0.004	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:19	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:19	AKB
<b>Boron</b>	<b>0.47</b>		mg/L	0.10	0.10	SW846 6010 B	10/05/2023 11:34	10/06/2023 16:44	MRWD
Cadmium	ND	u	mg/L	0.0010	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:19	AKB
<b>Calcium</b>	<b>411</b>	D1	mg/L	40.0	13.0	SW846 6010 B	10/05/2023 11:34	10/06/2023 16:50	MRWD
Chromium	ND	u	mg/L	0.0020	0.0006	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:19	AKB
<b>Cobalt</b>	<b>0.064</b>		mg/L	0.004	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:19	AKB
<b>Copper</b>	<b>0.001</b>	J	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:19	AKB
<b>Iron</b>	<b>25.8</b>	D1	mg/L	1.00	0.500	SW846 6010 B	10/05/2023 11:34	10/06/2023 16:47	MRWD
Lead	ND	u	mg/L	0.002	0.0005	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:19	AKB
<b>Lithium</b>	<b>0.009</b>	J	mg/L	0.02	0.005	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:19	AKB
<b>Magnesium</b>	<b>231</b>	D1	mg/L	20.0	9.00	SW846 6010 B	10/05/2023 11:34	10/06/2023 16:50	MRWD
Molybdenum	ND	u	mg/L	0.01	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:19	AKB
<b>Nickel</b>	<b>0.033</b>		mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:19	AKB
<b>Potassium</b>	<b>7.39</b>		mg/L	0.50	0.22	SW846 6010 B	10/05/2023 11:34	10/06/2023 16:44	MRWD
Selenium	ND	u	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:19	AKB
<b>Sodium</b>	<b>141</b>	D1	mg/L	26.0	10.0	SW846 6010 B	10/05/2023 11:34	10/06/2023 16:50	MRWD
Thallium	ND	u	mg/L	0.0020	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:19	AKB
<b>Zinc</b>	<b>0.02</b>		mg/L	0.02	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:19	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	10/06/2023 07:36	10/06/2023 12:35	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>187</b>		mg/L	4		2320 B-2011	10/06/2023 17:09	10/06/2023 17:09	DJK
Carbonate Alkalinity as CaCO3	ND	u	mg/L	4		2320 B-2011	10/06/2023 17:09	10/06/2023 17:09	DJK
<b>Total Alkalinity</b>	<b>187</b>		mg/L	4		2320 B-2011	10/06/2023 17:09	10/06/2023 17:09	DJK
<b>Chemical Oxygen Demand</b>	<b>38</b>		mg/L	13	8	HACH 8000	10/11/2023 08:53	10/12/2023 10:35	HMF
<b>Specific Conductance (Lab)</b>	<b>3490</b>		umhos/cm	1	1	2510 B-2011	10/04/2023 13:30	10/05/2023 12:52	AED
<b>Hardness as CaCO3</b>	<b>1890</b>	D	mg/L	5	5	2340 C (as HACH 8226)	10/10/2023 10:45	10/10/2023 10:45	CLL
<b>Total Dissolved Solids</b>	<b>3180</b>		mg/L	250	250	2540 C-2015	10/05/2023 12:00	10/05/2023 12:00	HAG
<b>Total Organic Carbon</b>	<b>1.8</b>		mg/L	0.5	0.4	5310 C-2014	10/11/2023 16:38	10/12/2023 20:17	HMF

**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
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**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>0.121</b>	_Sub	pCi/L			EPA 903.1	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>See Attached Subcontract Report</b>	<b>0.794</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>See Attached Subcontract Report</b>	<b>0.915</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>Radium</b>	<b>0.915</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>59.2</b>		mg/L	0.5	0.4	EPA 300.0 REV 2.1	10/10/2023 03:32	10/10/2023 03:32	CSC
Fluoride	ND	u	mg/L	0.20		EPA 300.0 REV 2.1	10/10/2023 03:32	10/10/2023 03:32	CSC
<b>Sulfate</b>	<b>4180</b>	D	mg/L	20.0	20.0	EPA 300.0 REV 2.1	10/13/2023 19:10	10/13/2023 19:10	CSC



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### ANALYTICAL RESULTS

Lab Sample ID: **3100291-20**

Description: **Mercury Field Blank MW-10**

Sample Collection Date Time: 10/03/2023 13:05

Sample Received Date Time: 10/04/2023 11:25

#### Metals by EPA 200 Series Methods Madisonville

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	2.7	J	ng/L	5.0	1.8	EPA 245.7 REV 2	10/06/2023 07:36	10/06/2023 13:37	TML





**ANALYTICAL RESULTS**

Lab Sample ID: **3100291-21**  
 Description: **MW-10D**

Sample Collection Date Time: 10/02/2023 09:45  
 Sample Received Date Time: 10/04/2023 11:25

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:22	AKB
<b>Arsenic</b>	<b>0.0032</b>		mg/L	0.0010	0.0004	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:22	AKB
<b>Barium</b>	<b>0.019</b>		mg/L	0.004	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:22	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:22	AKB
<b>Boron</b>	<b>2.65</b>	D1	mg/L	1.00	1.00	SW846 6010 B	10/05/2023 11:34	10/06/2023 16:57	MRWD
Cadmium	ND	u	mg/L	0.0010	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:22	AKB
<b>Calcium</b>	<b>523</b>	D1	mg/L	40.0	13.0	SW846 6010 B	10/05/2023 11:34	10/06/2023 17:00	MRWD
Chromium	ND	u	mg/L	0.0020	0.0006	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:22	AKB
Cobalt	ND	u	mg/L	0.004	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:22	AKB
<b>Copper</b>	<b>0.001</b>	J	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:22	AKB
<b>Iron</b>	<b>25.6</b>	D1	mg/L	1.00	0.500	SW846 6010 B	10/05/2023 11:34	10/06/2023 16:57	MRWD
Lead	ND	u	mg/L	0.002	0.0005	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:22	AKB
<b>Lithium</b>	<b>0.09</b>		mg/L	0.02	0.005	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:22	AKB
<b>Magnesium</b>	<b>154</b>	D1	mg/L	20.0	9.00	SW846 6010 B	10/05/2023 11:34	10/06/2023 17:00	MRWD
<b>Molybdenum</b>	<b>0.004</b>	J	mg/L	0.01	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:22	AKB
<b>Nickel</b>	<b>0.012</b>		mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:22	AKB
<b>Potassium</b>	<b>13.2</b>	D1	mg/L	5.00	2.20	SW846 6010 B	10/05/2023 11:34	10/06/2023 16:57	MRWD
Selenium	ND	u	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:22	AKB
<b>Sodium</b>	<b>97.3</b>	D1	mg/L	2.60	1.00	SW846 6010 B	10/05/2023 11:34	10/06/2023 16:57	MRWD
Thallium	ND	u	mg/L	0.0020	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:22	AKB
<b>Zinc</b>	<b>0.008</b>	J	mg/L	0.02	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:22	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	10/06/2023 07:36	10/06/2023 12:40	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>270</b>		mg/L	4		2320 B-2011	10/06/2023 17:39	10/06/2023 17:39	DJK
Carbonate Alkalinity as CaCO3	ND	u	mg/L	4		2320 B-2011	10/06/2023 17:39	10/06/2023 17:39	DJK
<b>Total Alkalinity</b>	<b>270</b>		mg/L	4		2320 B-2011	10/06/2023 17:39	10/06/2023 17:39	DJK
<b>Chemical Oxygen Demand</b>	<b>28</b>		mg/L	13	8	HACH 8000	10/11/2023 08:53	10/12/2023 10:35	HMF
<b>Specific Conductance (Lab)</b>	<b>3410</b>		umhos/cm	1	1	2510 B-2011	10/04/2023 13:30	10/05/2023 12:52	AED
<b>Hardness as CaCO3</b>	<b>1910</b>	D	mg/L	5	5	2340 C (as HACH 8226)	10/10/2023 10:45	10/10/2023 10:45	CLL
<b>Total Dissolved Solids</b>	<b>2870</b>		mg/L	250	250	2540 C-2015	10/05/2023 12:00	10/05/2023 12:00	HAG
<b>Total Organic Carbon</b>	<b>1.0</b>		mg/L	0.5	0.4	5310 C-2014	10/11/2023 16:38	10/12/2023 22:25	HMF

**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
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**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>0.056</b>	_Sub	pCi/L			EPA 903.1	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>See Attached Subcontract Report</b>	<b>1.31</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>Radium</b>	<b>1.37</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>See Attached Subcontract Report</b>	<b>1.37</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>208</b>	D	mg/L	2.5	1.8	EPA 300.0 REV 2.1	10/11/2023 14:52	10/11/2023 14:52	CSC
<b>Fluoride</b>	<b>0.41</b>		mg/L	0.20		EPA 300.0 REV 2.1	10/10/2023 22:22	10/10/2023 22:22	CSC
<b>Sulfate</b>	<b>2240</b>	D	mg/L	10.0	10.0	EPA 300.0 REV 2.1	10/11/2023 15:20	10/11/2023 15:20	CSC



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### ANALYTICAL RESULTS

Lab Sample ID: **3100291-22**

Description: **Mercury Field Blank MW-10D**

Sample Collection Date Time: 10/02/2023 09:45

Sample Received Date Time: 10/04/2023 11:25

#### Metals by EPA 200 Series Methods Madisonville

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	2.4	J	ng/L	5.0	1.8	EPA 245.7 REV 2	10/06/2023 07:36	10/06/2023 13:43	TML



**ANALYTICAL RESULTS**

Lab Sample ID: **3100291-23**  
 Description: **MW102**

Sample Collection Date Time: 10/02/2023 12:30  
 Sample Received Date Time: 10/04/2023 11:25

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:56	AKB
<b>Arsenic</b>	<b>0.0049</b>		mg/L	0.0010	0.0004	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:56	AKB
<b>Barium</b>	<b>0.051</b>		mg/L	0.004	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:56	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:56	AKB
Boron	ND	u	mg/L	0.10	0.10	SW846 6010 B	10/05/2023 11:34	10/05/2023 17:40	MRWD
<b>Cadmium</b>	<b>0.0002</b>	J	mg/L	0.0010	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:56	AKB
<b>Calcium</b>	<b>85.5</b>	D1	mg/L	4.00	1.30	SW846 6010 B	10/05/2023 11:34	10/05/2023 17:43	MRWD
<b>Chromium</b>	<b>0.0024</b>		mg/L	0.0020	0.0006	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:56	AKB
<b>Cobalt</b>	<b>0.004</b>		mg/L	0.004	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:56	AKB
<b>Copper</b>	<b>0.002</b>	J	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:56	AKB
<b>Iron</b>	<b>7.87</b>		mg/L	0.100	0.050	SW846 6010 B	10/05/2023 11:34	10/05/2023 17:40	MRWD
<b>Lead</b>	<b>0.002</b>		mg/L	0.002	0.0005	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:56	AKB
Lithium	ND	u	mg/L	0.02	0.005	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:56	AKB
<b>Magnesium</b>	<b>40.9</b>	D1	mg/L	2.00	0.900	SW846 6010 B	10/05/2023 11:34	10/05/2023 17:43	MRWD
Molybdenum	ND	u	mg/L	0.01	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:56	AKB
<b>Nickel</b>	<b>0.004</b>		mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:56	AKB
<b>Potassium</b>	<b>1.38</b>		mg/L	0.50	0.22	SW846 6010 B	10/05/2023 11:34	10/05/2023 17:40	MRWD
Selenium	ND	u	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:56	AKB
<b>Sodium</b>	<b>128</b>	D1	mg/L	26.0	10.0	SW846 6010 B	10/09/2023 11:15	10/10/2023 14:18	MRWD
<b>Thallium</b>	<b>0.0002</b>	J	mg/L	0.0020	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:56	AKB
<b>Zinc</b>	<b>0.01</b>	J	mg/L	0.02	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:56	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	10/06/2023 07:36	10/06/2023 12:46	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>292</b>		mg/L	4		2320 B-2011	10/06/2023 17:44	10/06/2023 17:44	DJK
Carbonate Alkalinity as CaCO3	ND	u	mg/L	4		2320 B-2011	10/06/2023 17:44	10/06/2023 17:44	DJK
<b>Total Alkalinity</b>	<b>292</b>		mg/L	4		2320 B-2011	10/06/2023 17:44	10/06/2023 17:44	DJK
Chemical Oxygen Demand	ND	u	mg/L	13	8	HACH 8000	10/11/2023 08:53	10/12/2023 10:35	HMF
<b>Specific Conductance (Lab)</b>	<b>1240</b>		umhos/cm	1	1	2510 B-2011	10/04/2023 13:30	10/05/2023 12:52	AED
<b>Hardness as CaCO3</b>	<b>381</b>		mg/L	1	1	2340 C (as HACH 8226)	10/10/2023 10:45	10/10/2023 10:45	CLL
<b>Total Dissolved Solids</b>	<b>808</b>		mg/L	100	100	2540 C-2015	10/05/2023 12:00	10/05/2023 12:00	HAG
<b>Total Organic Carbon</b>	<b>1.2</b>		mg/L	0.5	0.4	5310 C-2014	10/11/2023 16:38	10/12/2023 22:46	HMF

**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
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**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>0.183</b>	_Sub	pCi/L			EPA 903.1	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>See Attached Subcontract Report</b>	<b>0.638</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>See Attached Subcontract Report</b>	<b>0.821</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>Radium</b>	<b>0.821</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>31.2</b>		mg/L	0.5	0.4	EPA 300.0 REV 2.1	10/10/2023 22:50	10/10/2023 22:50	CSC
<b>Fluoride</b>	<b>0.30</b>		mg/L	0.20		EPA 300.0 REV 2.1	10/10/2023 22:50	10/10/2023 22:50	CSC
<b>Sulfate</b>	<b>405</b>	D	mg/L	5.0	5.0	EPA 300.0 REV 2.1	10/11/2023 15:47	10/11/2023 15:47	CSC



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### ANALYTICAL RESULTS

Lab Sample ID: **3100291-24**

Description: **Mercury Field Blank MW-102**

Sample Collection Date Time: 10/02/2023 12:30

Sample Received Date Time: 10/04/2023 11:25

#### Metals by EPA 200 Series Methods Madisonville

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	10/06/2023 07:36	10/06/2023 13:48	TML



**ANALYTICAL RESULTS**

Lab Sample ID: **3100291-25**  
 Description: **MW104**

Sample Collection Date Time: 10/02/2023 09:30  
 Sample Received Date Time: 10/04/2023 11:25

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	M2, U	mg/L	0.005	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:58	AKB
<b>Arsenic</b>	<b>0.0027</b>		mg/L	0.0010	0.0004	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:58	AKB
<b>Barium</b>	<b>0.046</b>		mg/L	0.004	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:58	AKB
Beryllium	ND	U	mg/L	0.0020	0.0010	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:58	AKB
Boron	ND	M2, U	mg/L	0.10	0.10	SW846 6010 B	10/05/2023 11:34	10/05/2023 17:49	MRWD
Cadmium	ND	U	mg/L	0.0010	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:58	AKB
<b>Calcium</b>	<b>296</b>	D1, M3	mg/L	40.0	13.0	SW846 6010 B	10/05/2023 11:34	10/05/2023 17:56	MRWD
<b>Chromium</b>	<b>0.0043</b>		mg/L	0.0020	0.0006	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:58	AKB
Cobalt	ND	U	mg/L	0.004	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:58	AKB
<b>Copper</b>	<b>0.004</b>		mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:58	AKB
<b>Iron</b>	<b>8.65</b>		mg/L	0.100	0.050	SW846 6010 B	10/05/2023 11:34	10/05/2023 17:49	MRWD
<b>Lead</b>	<b>0.003</b>		mg/L	0.002	0.0005	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:58	AKB
<b>Lithium</b>	<b>0.03</b>		mg/L	0.02	0.005	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:58	AKB
<b>Magnesium</b>	<b>97.2</b>	D1, M3	mg/L	2.00	0.900	SW846 6010 B	10/05/2023 11:34	10/05/2023 17:52	MRWD
Molybdenum	ND	U	mg/L	0.01	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:58	AKB
<b>Nickel</b>	<b>0.006</b>		mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:58	AKB
<b>Potassium</b>	<b>3.61</b>		mg/L	0.50	0.22	SW846 6010 B	10/05/2023 11:34	10/05/2023 17:49	MRWD
Selenium	ND	U	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:58	AKB
<b>Sodium</b>	<b>82.5</b>	D2, M2	mg/L	2.60	1.00	SW846 6010 B	10/09/2023 11:15	10/10/2023 14:21	MRWD
Thallium	ND	U	mg/L	0.0020	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:58	AKB
<b>Zinc</b>	<b>0.02</b>		mg/L	0.02	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 15:58	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	U	ng/L	5.0	1.8	EPA 245.7 REV 2	10/06/2023 07:36	10/06/2023 12:52	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>417</b>		mg/L	4		2320 B-2011	10/06/2023 17:49	10/06/2023 17:49	DJK
Carbonate Alkalinity as CaCO3	ND	U	mg/L	4		2320 B-2011	10/06/2023 17:49	10/06/2023 17:49	DJK
<b>Total Alkalinity</b>	<b>417</b>		mg/L	4		2320 B-2011	10/06/2023 17:49	10/06/2023 17:49	DJK
<b>Chemical Oxygen Demand</b>	<b>12</b>	J	mg/L	13	8	HACH 8000	10/11/2023 08:53	10/12/2023 10:35	HMF
<b>Specific Conductance (Lab)</b>	<b>2060</b>		umhos/cm	1	1	2510 B-2011	10/04/2023 13:30	10/05/2023 12:52	AED
<b>Hardness as CaCO3</b>	<b>1150</b>	D	mg/L	2	2	2340 C (as HACH 8226)	10/10/2023 10:45	10/10/2023 10:45	CLL
<b>Total Dissolved Solids</b>	<b>1760</b>		mg/L	100	100	2540 C-2015	10/05/2023 12:00	10/05/2023 12:00	HAG
<b>Total Organic Carbon</b>	<b>0.9</b>		mg/L	0.5	0.4	5310 C-2014	10/11/2023 16:38	10/12/2023 23:08	HMF





**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>0.711</b>	_Sub	pCi/L			EPA 903.1	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>See Attached Subcontract Report</b>	<b>1.30</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>See Attached Subcontract Report</b>	<b>2.01</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>Radium</b>	<b>2.01</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>11.2</b>	M2	mg/L	0.5	0.4	EPA 300.0 REV 2.1	10/10/2023 23:17	10/10/2023 23:17	CSC
Fluoride	ND	M2, u	mg/L	0.20		EPA 300.0 REV 2.1	10/10/2023 23:17	10/10/2023 23:17	CSC
<b>Sulfate</b>	<b>1080</b>	D, M3	mg/L	10.0	10.0	EPA 300.0 REV 2.1	10/11/2023 16:14	10/11/2023 16:14	CSC



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### ANALYTICAL RESULTS

Lab Sample ID: **3100291-26**

Description: **Mercury Field Blank MW-104**

Sample Collection Date Time: 10/02/2023 09:30

Sample Received Date Time: 10/04/2023 11:25

#### Metals by EPA 200 Series Methods Madisonville

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	10/06/2023 07:36	10/06/2023 13:54	TML



**ANALYTICAL RESULTS**

Lab Sample ID: **3100291-27**  
 Description: **MW-105R**

Sample Collection Date Time: 10/02/2023 08:35  
 Sample Received Date Time: 10/04/2023 11:25

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:12	AKB
<b>Arsenic</b>	<b>0.0036</b>		mg/L	0.0010	0.0004	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:12	AKB
<b>Barium</b>	<b>0.033</b>		mg/L	0.004	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:12	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:12	AKB
Boron	ND	u	mg/L	0.10	0.10	SW846 6010 B	10/05/2023 11:34	10/05/2023 17:59	MRWD
Cadmium	ND	u	mg/L	0.0010	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:12	AKB
<b>Calcium</b>	<b>182</b>	D1	mg/L	40.0	13.0	SW846 6010 B	10/05/2023 11:34	10/05/2023 18:15	MRWD
Chromium	ND	u	mg/L	0.0020	0.0006	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:12	AKB
Cobalt	ND	u	mg/L	0.004	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:12	AKB
<b>Copper</b>	<b>0.001</b>	J	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:12	AKB
<b>Iron</b>	<b>4.39</b>		mg/L	0.100	0.050	SW846 6010 B	10/05/2023 11:34	10/05/2023 17:59	MRWD
Lead	ND	u	mg/L	0.002	0.0005	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:12	AKB
<b>Lithium</b>	<b>0.03</b>		mg/L	0.02	0.005	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:12	AKB
<b>Magnesium</b>	<b>59.6</b>	D1	mg/L	2.00	0.900	SW846 6010 B	10/05/2023 11:34	10/05/2023 18:12	MRWD
Molybdenum	ND	u	mg/L	0.01	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:12	AKB
<b>Nickel</b>	<b>0.002</b>	J	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:12	AKB
<b>Potassium</b>	<b>2.16</b>		mg/L	0.50	0.22	SW846 6010 B	10/05/2023 11:34	10/05/2023 17:59	MRWD
Selenium	ND	u	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:12	AKB
<b>Sodium</b>	<b>38.0</b>	D2	mg/L	2.60	1.00	SW846 6010 B	10/09/2023 11:15	10/10/2023 14:27	MRWD
Thallium	ND	u	mg/L	0.0020	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:12	AKB
<b>Zinc</b>	<b>0.01</b>	J	mg/L	0.02	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:12	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	10/06/2023 07:36	10/06/2023 12:57	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>416</b>		mg/L	4		2320 B-2011	10/06/2023 17:56	10/06/2023 17:56	DJK
Carbonate Alkalinity as CaCO3	ND	u	mg/L	4		2320 B-2011	10/06/2023 17:56	10/06/2023 17:56	DJK
<b>Total Alkalinity</b>	<b>416</b>		mg/L	4		2320 B-2011	10/06/2023 17:56	10/06/2023 17:56	DJK
Chemical Oxygen Demand	ND	u	mg/L	13	8	HACH 8000	10/11/2023 08:53	10/12/2023 10:35	HMF
<b>Specific Conductance (Lab)</b>	<b>1340</b>		umhos/cm	1	1	2510 B-2011	10/04/2023 13:30	10/05/2023 12:52	AED
<b>Hardness as CaCO3</b>	<b>685</b>	D	mg/L	2	2	2340 C (as HACH 8226)	10/10/2023 10:45	10/10/2023 10:45	CLL
<b>Total Dissolved Solids</b>	<b>1060</b>		mg/L	100	100	2540 C-2015	10/05/2023 12:00	10/05/2023 12:00	HAG
<b>Total Organic Carbon</b>	<b>1.1</b>		mg/L	0.5	0.4	5310 C-2014	10/11/2023 16:38	10/12/2023 23:29	HMF

**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
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**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>1.05</b>	_Sub	pCi/L			EPA 903.1	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>See Attached Subcontract Report</b>	<b>0.797</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>Radium</b>	<b>1.85</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>See Attached Subcontract Report</b>	<b>1.85</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>11.9</b>		mg/L	0.5	0.4	EPA 300.0 REV 2.1	10/10/2023 23:45	10/10/2023 23:45	CSC
Fluoride	ND	u	mg/L	0.20		EPA 300.0 REV 2.1	10/10/2023 23:45	10/10/2023 23:45	CSC
<b>Sulfate</b>	<b>428</b>	D	mg/L	5.0	5.0	EPA 300.0 REV 2.1	10/11/2023 16:42	10/11/2023 16:42	CSC



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### ANALYTICAL RESULTS

Lab Sample ID: **3100291-28**

Description: **Mercury Field Blank MW-105R**

Sample Collection Date Time: 10/02/2023 08:35

Sample Received Date Time: 10/04/2023 11:25

#### Metals by EPA 200 Series Methods Madisonville

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	2.1	J	ng/L	5.0	1.8	EPA 245.7 REV 2	10/06/2023 07:36	10/06/2023 14:00	TML



**ANALYTICAL RESULTS**

Lab Sample ID: **3100291-29**  
 Description: **MW110**

Sample Collection Date Time: 10/02/2023 07:35  
 Sample Received Date Time: 10/04/2023 11:25

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	U	mg/L	0.005	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:14	AKB
<b>Arsenic</b>	<b>0.0040</b>		mg/L	0.0010	0.0004	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:14	AKB
<b>Barium</b>	<b>0.068</b>		mg/L	0.004	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:14	AKB
Beryllium	ND	U	mg/L	0.0020	0.0010	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:14	AKB
Boron	ND	M2, U	mg/L	0.10	0.10	SW846 6010 B	10/05/2023 11:34	10/05/2023 18:18	MRWD
Cadmium	ND	U	mg/L	0.0010	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:14	AKB
<b>Calcium</b>	<b>39.3</b>	D1, M1	mg/L	4.00	1.30	SW846 6010 B	10/05/2023 11:34	10/05/2023 18:21	MRWD
<b>Chromium</b>	<b>0.0016</b>	J	mg/L	0.0020	0.0006	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:14	AKB
Cobalt	ND	U	mg/L	0.004	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:14	AKB
<b>Copper</b>	<b>0.002</b>	J	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:14	AKB
<b>Iron</b>	<b>7.17</b>	M1	mg/L	0.100	0.050	SW846 6010 B	10/05/2023 11:34	10/05/2023 18:18	MRWD
<b>Lead</b>	<b>0.001</b>	J	mg/L	0.002	0.0005	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:14	AKB
<b>Lithium</b>	<b>0.005</b>	J	mg/L	0.02	0.005	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:14	AKB
<b>Magnesium</b>	<b>20.2</b>	D1, M1	mg/L	2.00	0.900	SW846 6010 B	10/05/2023 11:34	10/05/2023 18:21	MRWD
Molybdenum	ND	U	mg/L	0.01	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:14	AKB
<b>Nickel</b>	<b>0.002</b>	J	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:14	AKB
<b>Potassium</b>	<b>0.58</b>	M1	mg/L	0.50	0.22	SW846 6010 B	10/05/2023 11:34	10/05/2023 18:18	MRWD
Selenium	ND	U	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:14	AKB
<b>Sodium</b>	<b>26.0</b>	D2, M2	mg/L	2.60	1.00	SW846 6010 B	10/09/2023 11:15	10/10/2023 14:43	MRWD
Thallium	ND	U	mg/L	0.0020	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:14	AKB
<b>Zinc</b>	<b>0.007</b>	J	mg/L	0.02	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:14	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Mercury</b>	<b>2.6</b>	J	ng/L	5.0	1.8	EPA 245.7 REV 2	10/06/2023 07:36	10/06/2023 13:03	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>147</b>		mg/L	4		2320 B-2011	10/06/2023 19:20	10/06/2023 19:20	DJK
Carbonate Alkalinity as CaCO3	ND	U	mg/L	4		2320 B-2011	10/06/2023 19:20	10/06/2023 19:20	DJK
<b>Total Alkalinity</b>	<b>147</b>	M3	mg/L	4		2320 B-2011	10/06/2023 19:20	10/06/2023 19:20	DJK
Chemical Oxygen Demand	ND	U	mg/L	13	8	HACH 8000	10/11/2023 08:53	10/12/2023 10:35	HMF
<b>Specific Conductance (Lab)</b>	<b>456</b>		umhos/cm	1	1	2510 B-2011	10/04/2023 13:30	10/05/2023 12:52	AED
<b>Hardness as CaCO3</b>	<b>115</b>		mg/L	1	1	2340 C (as HACH 8226)	10/11/2023 13:39	10/11/2023 13:39	CLL
<b>Total Dissolved Solids</b>	<b>278</b>		mg/L	50	50	2540 C-2015	10/05/2023 12:00	10/05/2023 12:00	HAG
<b>Total Organic Carbon</b>	<b>1.5</b>		mg/L	0.5	0.4	5310 C-2014	10/11/2023 16:38	10/12/2023 23:50	HMF



**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>0.411</b>	_Sub	pCi/L			EPA 903.1	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>See Attached Subcontract Report</b>	<b>0.998</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>See Attached Subcontract Report</b>	<b>1.41</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>Radium</b>	<b>1.41</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>9.7</b>		mg/L	0.5	0.4	EPA 300.0 REV 2.1	10/11/2023 00:12	10/11/2023 00:12	CSC
<b>Fluoride</b>	<b>0.24</b>		mg/L	0.20		EPA 300.0 REV 2.1	10/11/2023 00:12	10/11/2023 00:12	CSC
<b>Sulfate</b>	<b>68.4</b>		mg/L	1.0	1.0	EPA 300.0 REV 2.1	10/11/2023 00:12	10/11/2023 00:12	CSC





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### ANALYTICAL RESULTS

Lab Sample ID: **3100291-30**

Description: **Mercury Field Blank MW-110**

Sample Collection Date Time: 10/02/2023 07:35

Sample Received Date Time: 10/04/2023 11:25

#### Metals by EPA 200 Series Methods Madisonville

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	10/06/2023 07:36	10/06/2023 14:05	TML



**ANALYTICAL RESULTS**

Lab Sample ID: **3100291-31**  
 Description: **MW-111**

Sample Collection Date Time: 10/02/2023 12:25  
 Sample Received Date Time: 10/04/2023 11:25

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:17	AKB
<b>Arsenic</b>	<b>0.0024</b>		mg/L	0.0010	0.0004	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:17	AKB
<b>Barium</b>	<b>0.019</b>		mg/L	0.004	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:17	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:17	AKB
<b>Boron</b>	<b>0.21</b>		mg/L	0.10	0.10	SW846 6010 B	10/05/2023 11:34	10/05/2023 18:27	MRWD
Cadmium	ND	u	mg/L	0.0010	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:17	AKB
<b>Calcium</b>	<b>510</b>	D1	mg/L	40.0	13.0	SW846 6010 B	10/05/2023 11:34	10/05/2023 18:34	MRWD
Chromium	ND	u	mg/L	0.0020	0.0006	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:17	AKB
<b>Cobalt</b>	<b>0.012</b>		mg/L	0.004	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:17	AKB
<b>Copper</b>	<b>0.001</b>	J	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:17	AKB
<b>Iron</b>	<b>12.1</b>	D1	mg/L	1.00	0.500	SW846 6010 B	10/05/2023 11:34	10/05/2023 18:30	MRWD
Lead	ND	u	mg/L	0.002	0.0005	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:17	AKB
<b>Lithium</b>	<b>0.04</b>		mg/L	0.02	0.005	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:17	AKB
<b>Magnesium</b>	<b>253</b>	D1	mg/L	20.0	9.00	SW846 6010 B	10/05/2023 11:34	10/05/2023 18:34	MRWD
<b>Molybdenum</b>	<b>0.003</b>	J	mg/L	0.01	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:17	AKB
<b>Nickel</b>	<b>0.015</b>		mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:17	AKB
<b>Potassium</b>	<b>7.02</b>		mg/L	0.50	0.22	SW846 6010 B	10/05/2023 11:34	10/05/2023 18:27	MRWD
Selenium	ND	u	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:17	AKB
<b>Sodium</b>	<b>69.7</b>	D2	mg/L	2.60	1.00	SW846 6010 B	10/09/2023 11:15	10/10/2023 14:50	MRWD
Thallium	ND	u	mg/L	0.0020	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:17	AKB
<b>Zinc</b>	<b>0.006</b>	J	mg/L	0.02	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:17	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	10/06/2023 07:36	10/06/2023 13:09	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>608</b>		mg/L	4		2320 B-2011	10/06/2023 18:02	10/06/2023 18:02	DJK
Carbonate Alkalinity as CaCO3	ND	u	mg/L	4		2320 B-2011	10/06/2023 18:02	10/06/2023 18:02	DJK
<b>Total Alkalinity</b>	<b>608</b>		mg/L	4		2320 B-2011	10/06/2023 18:02	10/06/2023 18:02	DJK
<b>Chemical Oxygen Demand</b>	<b>16</b>		mg/L	13	8	HACH 8000	10/11/2023 08:53	10/12/2023 10:35	HMF
<b>Specific Conductance (Lab)</b>	<b>3520</b>		umhos/cm	1	1	2510 B-2011	10/04/2023 13:30	10/05/2023 12:52	AED
<b>Hardness as CaCO3</b>	<b>2230</b>	D	mg/L	5	5	2340 C (as HACH 8226)	10/10/2023 10:45	10/10/2023 10:45	CLL
<b>Total Dissolved Solids</b>	<b>3770</b>		mg/L	250	250	2540 C-2015	10/05/2023 12:00	10/05/2023 12:00	HAG
<b>Total Organic Carbon</b>	<b>2.8</b>		mg/L	0.5	0.4	5310 C-2014	10/11/2023 16:38	10/13/2023 00:11	HMF

**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
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**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>0.067</b>	_Sub	pCi/L			EPA 903.1	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>See Attached Subcontract Report</b>	<b>1.11</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>Radium</b>	<b>1.18</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>See Attached Subcontract Report</b>	<b>1.18</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>3.3</b>		mg/L	0.5	0.4	EPA 300.0 REV 2.1	10/11/2023 00:40	10/11/2023 00:40	CSC
<b>Fluoride</b>	<b>0.24</b>		mg/L	0.20		EPA 300.0 REV 2.1	10/11/2023 00:40	10/11/2023 00:40	CSC
<b>Sulfate</b>	<b>3210</b>	D	mg/L	20.0	20.0	EPA 300.0 REV 2.1	10/11/2023 17:09	10/11/2023 17:09	CSC



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### ANALYTICAL RESULTS

Lab Sample ID: **3100291-32**

Sample Collection Date Time: 10/02/2023 12:25

Description: **Mercury Field Blank MW-111**

Sample Received Date Time: 10/04/2023 11:25

#### Metals by EPA 200 Series Methods Madisonville

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	10/06/2023 07:36	10/06/2023 14:11	TML



**ANALYTICAL RESULTS**

Lab Sample ID: **3100291-33**

Sample Collection Date Time: 10/02/2023 13:00

Description: **MW-112**

Sample Received Date Time: 10/04/2023 11:25

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:19	AKB
<b>Arsenic</b>	<b>0.0017</b>		mg/L	0.0010	0.0004	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:19	AKB
<b>Barium</b>	<b>0.031</b>		mg/L	0.004	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:19	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:19	AKB
<b>Boron</b>	<b>0.14</b>		mg/L	0.10	0.10	SW846 6010 B	10/05/2023 11:34	10/05/2023 18:37	MRWD
Cadmium	ND	u	mg/L	0.0010	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:19	AKB
<b>Calcium</b>	<b>243</b>	D1	mg/L	40.0	13.0	SW846 6010 B	10/05/2023 11:34	10/05/2023 18:53	MRWD
Chromium	ND	u	mg/L	0.0020	0.0006	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:19	AKB
<b>Cobalt</b>	<b>0.005</b>		mg/L	0.004	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:19	AKB
<b>Copper</b>	<b>0.001</b>	J	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:19	AKB
<b>Iron</b>	<b>1.99</b>		mg/L	0.100	0.050	SW846 6010 B	10/05/2023 11:34	10/05/2023 18:37	MRWD
Lead	ND	u	mg/L	0.002	0.0005	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:19	AKB
<b>Lithium</b>	<b>0.01</b>	J	mg/L	0.02	0.005	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:19	AKB
<b>Magnesium</b>	<b>83.2</b>	D1	mg/L	2.00	0.900	SW846 6010 B	10/05/2023 11:34	10/05/2023 18:50	MRWD
<b>Molybdenum</b>	<b>0.002</b>	J	mg/L	0.01	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:19	AKB
<b>Nickel</b>	<b>0.007</b>		mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:19	AKB
<b>Potassium</b>	<b>4.26</b>		mg/L	0.50	0.22	SW846 6010 B	10/05/2023 11:34	10/05/2023 18:37	MRWD
Selenium	ND	u	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:19	AKB
<b>Sodium</b>	<b>19.5</b>	D2	mg/L	2.60	1.00	SW846 6010 B	10/09/2023 11:15	10/10/2023 14:56	MRWD
Thallium	ND	u	mg/L	0.0020	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:19	AKB
<b>Zinc</b>	<b>0.007</b>	J	mg/L	0.02	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:19	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	γ1, u	ng/L	5.0	1.8	EPA 245.7 REV 2	10/09/2023 08:14	10/09/2023 12:22	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>385</b>		mg/L	4		2320 B-2011	10/06/2023 18:11	10/06/2023 18:11	DJK
Carbonate Alkalinity as CaCO3	ND	u	mg/L	4		2320 B-2011	10/06/2023 18:11	10/06/2023 18:11	DJK
<b>Total Alkalinity</b>	<b>385</b>		mg/L	4		2320 B-2011	10/06/2023 18:11	10/06/2023 18:11	DJK
<b>Chemical Oxygen Demand</b>	<b>10</b>	J	mg/L	13	8	HACH 8000	10/11/2023 08:53	10/12/2023 10:35	HMF
<b>Specific Conductance (Lab)</b>	<b>1580</b>		umhos/cm	1	1	2510 B-2011	10/04/2023 13:36	10/05/2023 13:58	AED
<b>Hardness as CaCO3</b>	<b>954</b>	D	mg/L	2	2	2340 C (as HACH 8226)	10/10/2023 10:45	10/10/2023 10:45	CLL
<b>Total Dissolved Solids</b>	<b>1270</b>		mg/L	100	100	2540 C-2015	10/05/2023 12:00	10/05/2023 12:00	HAG
<b>Total Organic Carbon</b>	<b>2.8</b>		mg/L	0.5	0.4	5310 C-2014	10/11/2023 16:38	10/13/2023 00:32	HMF

**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
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**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>0.115</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 903.1</b>	<b>10/31/2023 13:40</b>	<b>10/31/2023 13:42</b>	<b>RCW</b>
<b>See Attached Subcontract Report</b>	<b>1.02</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>10/31/2023 13:40</b>	<b>10/31/2023 13:42</b>	<b>RCW</b>
<b>See Attached Subcontract Report</b>	<b>1.14</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>10/31/2023 13:40</b>	<b>10/31/2023 13:42</b>	<b>RCW</b>
<b>Radium</b>	<b>1.14</b>	<b>_Sub</b>	<b>pCi/L</b>			<b>EPA 904.0 Radium Sum Calc</b>	<b>10/31/2023 13:40</b>	<b>10/31/2023 13:42</b>	<b>RCW</b>

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>3.3</b>		<b>mg/L</b>	<b>0.5</b>	<b>0.4</b>	<b>EPA 300.0 REV 2.1</b>	<b>10/11/2023 01:07</b>	<b>10/11/2023 01:07</b>	<b>CSC</b>
<b>Fluoride</b>	<b>ND</b>	<b>u</b>	<b>mg/L</b>	<b>0.20</b>		<b>EPA 300.0 REV 2.1</b>	<b>10/11/2023 01:07</b>	<b>10/11/2023 01:07</b>	<b>CSC</b>
<b>Sulfate</b>	<b>748</b>	<b>D</b>	<b>mg/L</b>	<b>5.0</b>	<b>5.0</b>	<b>EPA 300.0 REV 2.1</b>	<b>10/11/2023 17:37</b>	<b>10/11/2023 17:37</b>	<b>CSC</b>



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### ANALYTICAL RESULTS

Lab Sample ID: **3100291-34**

Sample Collection Date Time: 10/02/2023 13:00

Description: **Mercury Field Blank MW-112**

Sample Received Date Time: 10/04/2023 11:25

#### Metals by EPA 200 Series Methods Madisonville

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	v1, u	ng/L	5.0	1.8	EPA 245.7 REV 2	10/09/2023 08:14	10/09/2023 13:31	TML





**ANALYTICAL RESULTS**

Lab Sample ID: **3100291-35**  
 Description: **MW-113**

Sample Collection Date Time: 10/02/2023 08:30  
 Sample Received Date Time: 10/04/2023 11:25

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:21	AKB
<b>Arsenic</b>	<b>0.0291</b>		mg/L	0.0010	0.0004	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:21	AKB
<b>Barium</b>	<b>0.020</b>		mg/L	0.004	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:21	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:21	AKB
Boron	ND	u	mg/L	0.10	0.10	SW846 6010 B	10/05/2023 11:34	10/05/2023 18:56	MRWD
Cadmium	ND	u	mg/L	0.0010	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:21	AKB
<b>Calcium</b>	<b>186</b>	D1	mg/L	40.0	13.0	SW846 6010 B	10/05/2023 11:34	10/05/2023 19:02	MRWD
Chromium	ND	u	mg/L	0.0020	0.0006	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:21	AKB
Cobalt	ND	u	mg/L	0.004	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:21	AKB
<b>Copper</b>	<b>0.002</b>	J	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:21	AKB
<b>Iron</b>	<b>11.0</b>	D1	mg/L	1.00	0.500	SW846 6010 B	10/05/2023 11:34	10/05/2023 18:59	MRWD
Lead	ND	u	mg/L	0.002	0.0005	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:21	AKB
<b>Lithium</b>	<b>0.05</b>		mg/L	0.02	0.005	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:21	AKB
<b>Magnesium</b>	<b>90.6</b>	D1	mg/L	2.00	0.900	SW846 6010 B	10/05/2023 11:34	10/05/2023 18:59	MRWD
<b>Molybdenum</b>	<b>0.003</b>	J	mg/L	0.01	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:21	AKB
<b>Nickel</b>	<b>0.010</b>		mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:21	AKB
<b>Potassium</b>	<b>2.46</b>		mg/L	0.50	0.22	SW846 6010 B	10/05/2023 11:34	10/05/2023 18:56	MRWD
Selenium	ND	u	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:21	AKB
<b>Sodium</b>	<b>196</b>	D1	mg/L	26.0	10.0	SW846 6010 B	10/09/2023 11:15	10/10/2023 15:05	MRWD
Thallium	ND	u	mg/L	0.0020	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:21	AKB
<b>Zinc</b>	<b>0.008</b>	J	mg/L	0.02	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:21	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	M2, u	ng/L	5.0	1.8	EPA 245.7 REV 2	10/06/2023 07:36	10/06/2023 13:14	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>439</b>		mg/L	4		2320 B-2011	10/06/2023 18:17	10/06/2023 18:17	DJK
Carbonate Alkalinity as CaCO3	ND	u	mg/L	4		2320 B-2011	10/06/2023 18:17	10/06/2023 18:17	DJK
<b>Total Alkalinity</b>	<b>439</b>	M3	mg/L	4		2320 B-2011	10/06/2023 18:17	10/06/2023 18:17	DJK
<b>Chemical Oxygen Demand</b>	<b>24</b>		mg/L	13	8	HACH 8000	10/11/2023 09:03	10/12/2023 10:35	HMF
<b>Specific Conductance (Lab)</b>	<b>2180</b>		umhos/cm	1	1	2510 B-2011	10/04/2023 13:36	10/05/2023 13:58	AED
<b>Hardness as CaCO3</b>	<b>861</b>	D1, D	mg/L	2	2	2340 C (as HACH 8226)	10/11/2023 13:39	10/11/2023 13:39	CLL
<b>Total Dissolved Solids</b>	<b>1780</b>		mg/L	100	100	2540 C-2015	10/05/2023 12:00	10/05/2023 12:00	HAG
<b>Total Organic Carbon</b>	<b>5.6</b>		mg/L	0.5	0.4	5310 C-2014	10/11/2023 16:41	10/13/2023 05:30	HMF

**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
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**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>0.470</b>	_Sub	pCi/L			EPA 903.1	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>See Attached Subcontract Report</b>	<b>2.42</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>Radium</b>	<b>2.89</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>See Attached Subcontract Report</b>	<b>2.89</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>39.8</b>		mg/L	0.5	0.4	EPA 300.0 REV 2.1	10/11/2023 01:34	10/11/2023 01:34	CSC
<b>Fluoride</b>	<b>0.22</b>		mg/L	0.20		EPA 300.0 REV 2.1	10/11/2023 01:34	10/11/2023 01:34	CSC
<b>Sulfate</b>	<b>1190</b>	D	mg/L	10.0	10.0	EPA 300.0 REV 2.1	10/11/2023 18:04	10/11/2023 18:04	CSC



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### ANALYTICAL RESULTS

Lab Sample ID: **3100291-36**

Sample Collection Date Time: 10/02/2023 08:30

Description: **Mercury Field Blank MW-113**

Sample Received Date Time: 10/04/2023 11:25

#### Metals by EPA 200 Series Methods Madisonville

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	10/06/2023 07:36	10/06/2023 14:17	TML



**ANALYTICAL RESULTS**

Lab Sample ID: **3100291-37**

Sample Collection Date Time: 10/02/2023 10:45

Description: **MW-114**

Sample Received Date Time: 10/04/2023 11:25

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:24	AKB
<b>Arsenic</b>	<b>0.0031</b>		mg/L	0.0010	0.0004	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:24	AKB
<b>Barium</b>	<b>0.070</b>		mg/L	0.004	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:24	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:24	AKB
Boron	ND	u	mg/L	0.10	0.10	SW846 6010 B	10/05/2023 11:34	10/05/2023 19:05	MRWD
Cadmium	ND	u	mg/L	0.0010	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:24	AKB
<b>Calcium</b>	<b>115</b>	D1	mg/L	40.0	13.0	SW846 6010 B	10/05/2023 11:34	10/05/2023 19:12	MRWD
Chromium	ND	u	mg/L	0.0020	0.0006	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:24	AKB
Cobalt	ND	u	mg/L	0.004	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:24	AKB
<b>Copper</b>	<b>0.001</b>	J	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:24	AKB
<b>Iron</b>	<b>1.44</b>		mg/L	0.100	0.050	SW846 6010 B	10/05/2023 11:34	10/05/2023 19:05	MRWD
Lead	ND	u	mg/L	0.002	0.0005	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:24	AKB
<b>Lithium</b>	<b>0.02</b>		mg/L	0.02	0.005	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:24	AKB
<b>Magnesium</b>	<b>27.5</b>	D1	mg/L	2.00	0.900	SW846 6010 B	10/05/2023 11:34	10/05/2023 19:09	MRWD
<b>Molybdenum</b>	<b>0.003</b>	J	mg/L	0.01	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:24	AKB
<b>Nickel</b>	<b>0.004</b>		mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:24	AKB
<b>Potassium</b>	<b>1.59</b>		mg/L	0.50	0.22	SW846 6010 B	10/05/2023 11:34	10/05/2023 19:05	MRWD
Selenium	ND	u	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:24	AKB
<b>Sodium</b>	<b>80.3</b>	D2	mg/L	2.60	1.00	SW846 6010 B	10/09/2023 11:15	10/10/2023 15:09	MRWD
Thallium	ND	u	mg/L	0.0020	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:24	AKB
<b>Zinc</b>	<b>0.006</b>	J	mg/L	0.02	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:24	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	10/09/2023 08:14	10/09/2023 12:27	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>334</b>		mg/L	4		2320 B-2011	10/06/2023 18:24	10/06/2023 18:24	DJK
Carbonate Alkalinity as CaCO3	ND	u	mg/L	4		2320 B-2011	10/06/2023 18:24	10/06/2023 18:24	DJK
<b>Total Alkalinity</b>	<b>334</b>		mg/L	4		2320 B-2011	10/06/2023 18:24	10/06/2023 18:24	DJK
Chemical Oxygen Demand	ND	u	mg/L	13	8	HACH 8000	10/11/2023 09:03	10/12/2023 10:35	HMF
<b>Specific Conductance (Lab)</b>	<b>1020</b>		umhos/cm	1	1	2510 B-2011	10/04/2023 13:36	10/05/2023 13:58	AED
<b>Hardness as CaCO3</b>	<b>354</b>		mg/L	1	1	2340 C (as HACH 8226)	10/10/2023 10:45	10/10/2023 10:45	CLL
<b>Total Dissolved Solids</b>	<b>632</b>		mg/L	100	100	2540 C-2015	10/05/2023 12:00	10/05/2023 12:00	HAG
<b>Total Organic Carbon</b>	<b>1.9</b>		mg/L	0.5	0.4	5310 C-2014	10/11/2023 16:41	10/13/2023 05:51	HMF

**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
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**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>0.268</b>	_Sub	pCi/L			EPA 903.1	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>See Attached Subcontract Report</b>	<b>2.90</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>Radium</b>	<b>3.17</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>See Attached Subcontract Report</b>	<b>3.17</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>32.1</b>		mg/L	0.5	0.4	EPA 300.0 REV 2.1	10/11/2023 02:02	10/11/2023 02:02	CSC
<b>Fluoride</b>	<b>0.23</b>		mg/L	0.20		EPA 300.0 REV 2.1	10/11/2023 02:02	10/11/2023 02:02	CSC
<b>Sulfate</b>	<b>162</b>		mg/L	1.0	1.0	EPA 300.0 REV 2.1	10/11/2023 02:02	10/11/2023 02:02	CSC



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### ANALYTICAL RESULTS

Lab Sample ID: **3100291-38**

Sample Collection Date Time: 10/02/2023 10:45

Description: **Mercury Field Blank MW-114**

Sample Received Date Time: 10/04/2023 11:25

#### Metals by EPA 200 Series Methods Madisonville

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	v1, u	ng/L	5.0	1.8	EPA 245.7 REV 2	10/09/2023 08:14	10/09/2023 13:37	TML



**ANALYTICAL RESULTS**

Lab Sample ID: **3100291-39**  
 Description: **Well Duplicate 1**

Sample Collection Date Time: 10/02/2023 07:52  
 Sample Received Date Time: 10/04/2023 11:25

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:26	AKB
<b>Arsenic</b>	<b>0.0024</b>		mg/L	0.0010	0.0004	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:26	AKB
<b>Barium</b>	<b>0.064</b>		mg/L	0.004	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:26	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:26	AKB
Boron	ND	u	mg/L	0.10	0.10	SW846 6010 B	10/05/2023 11:34	10/05/2023 19:15	MRWD
Cadmium	ND	u	mg/L	0.0010	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:26	AKB
<b>Calcium</b>	<b>37.7</b>	D1	mg/L	4.00	1.30	SW846 6010 B	10/05/2023 11:34	10/05/2023 19:28	MRWD
<b>Chromium</b>	<b>0.0018</b>	J	mg/L	0.0020	0.0006	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:26	AKB
Cobalt	ND	u	mg/L	0.004	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:26	AKB
<b>Copper</b>	<b>0.003</b>		mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:26	AKB
<b>Iron</b>	<b>5.67</b>		mg/L	0.100	0.050	SW846 6010 B	10/05/2023 11:34	10/05/2023 19:15	MRWD
<b>Lead</b>	<b>0.002</b>		mg/L	0.002	0.0005	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:26	AKB
<b>Lithium</b>	<b>0.005</b>	J	mg/L	0.02	0.005	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:26	AKB
<b>Magnesium</b>	<b>19.1</b>	D1	mg/L	2.00	0.900	SW846 6010 B	10/05/2023 11:34	10/05/2023 19:28	MRWD
Molybdenum	ND	u	mg/L	0.01	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:26	AKB
<b>Nickel</b>	<b>0.001</b>	J	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:26	AKB
<b>Potassium</b>	<b>0.65</b>		mg/L	0.50	0.22	SW846 6010 B	10/05/2023 11:34	10/05/2023 19:15	MRWD
Selenium	ND	u	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:26	AKB
<b>Sodium</b>	<b>25.9</b>	D2	mg/L	2.60	1.00	SW846 6010 B	10/09/2023 11:15	10/10/2023 15:24	MRWD
Thallium	ND	u	mg/L	0.0020	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:26	AKB
<b>Zinc</b>	<b>0.009</b>	J	mg/L	0.02	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:26	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	10/09/2023 08:14	10/09/2023 12:33	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>147</b>		mg/L	4		2320 B-2011	10/06/2023 18:30	10/06/2023 18:30	DJK
Carbonate Alkalinity as CaCO3	ND	u	mg/L	4		2320 B-2011	10/06/2023 18:30	10/06/2023 18:30	DJK
<b>Total Alkalinity</b>	<b>147</b>		mg/L	4		2320 B-2011	10/06/2023 18:30	10/06/2023 18:30	DJK
<b>Chemical Oxygen Demand</b>	<b>13</b>		mg/L	13	8	HACH 8000	10/11/2023 09:03	10/12/2023 10:35	HMF
<b>Specific Conductance (Lab)</b>	<b>463</b>		umhos/cm	1	1	2510 B-2011	10/04/2023 13:36	10/05/2023 13:58	AED
<b>Hardness as CaCO3</b>	<b>166</b>		mg/L	1	1	2340 C (as HACH 8226)	10/10/2023 10:45	10/10/2023 10:45	CLL
<b>Total Dissolved Solids</b>	<b>296</b>		mg/L	50	50	2540 C-2015	10/05/2023 12:00	10/05/2023 12:00	HAG
<b>Total Organic Carbon</b>	<b>1.6</b>		mg/L	0.5	0.4	5310 C-2014	10/11/2023 16:41	10/13/2023 06:12	HMF

**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
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**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>0.705</b>	_Sub	pCi/L			EPA 903.1	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>See Attached Subcontract Report</b>	<b>1.02</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>See Attached Subcontract Report</b>	<b>1.73</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>Radium</b>	<b>1.73</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>9.1</b>		mg/L	0.5	0.4	EPA 300.0 REV 2.1	10/11/2023 02:29	10/11/2023 02:29	CSC
<b>Fluoride</b>	<b>0.23</b>		mg/L	0.20		EPA 300.0 REV 2.1	10/11/2023 02:29	10/11/2023 02:29	CSC
<b>Sulfate</b>	<b>65.8</b>		mg/L	1.0	1.0	EPA 300.0 REV 2.1	10/11/2023 02:29	10/11/2023 02:29	CSC



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### ANALYTICAL RESULTS

Lab Sample ID: **3100291-40**

Sample Collection Date Time: 10/02/2023 07:52

Description: **Mercury Field Blank Well Dup-1**

Sample Received Date Time: 10/04/2023 11:25

#### Metals by EPA 200 Series Methods Madisonville

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	v1, u	ng/L	5.0	1.8	EPA 245.7 REV 2	10/09/2023 08:14	10/09/2023 13:42	TML



**ANALYTICAL RESULTS**

Lab Sample ID: **3100291-41**  
 Description: **Well Duplicate 2**

Sample Collection Date Time: 10/02/2023 15:55  
 Sample Received Date Time: 10/04/2023 11:25

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:28	AKB
<b>Arsenic</b>	<b>0.0028</b>		mg/L	0.0010	0.0004	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:28	AKB
<b>Barium</b>	<b>0.012</b>		mg/L	0.004	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:28	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:28	AKB
<b>Boron</b>	<b>0.90</b>		mg/L	0.10	0.10	SW846 6010 B	10/05/2023 11:34	10/05/2023 19:34	MRWD
Cadmium	ND	u	mg/L	0.0010	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:28	AKB
<b>Calcium</b>	<b>669</b>	D1	mg/L	40.0	13.0	SW846 6010 B	10/05/2023 11:34	10/05/2023 19:40	MRWD
<b>Chromium</b>	<b>0.0012</b>	J	mg/L	0.0020	0.0006	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:28	AKB
<b>Cobalt</b>	<b>0.007</b>		mg/L	0.004	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:28	AKB
Copper	ND	u	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:28	AKB
<b>Iron</b>	<b>7.31</b>		mg/L	0.100	0.050	SW846 6010 B	10/05/2023 11:34	10/05/2023 19:34	MRWD
Lead	ND	u	mg/L	0.002	0.0005	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:28	AKB
<b>Lithium</b>	<b>0.04</b>		mg/L	0.02	0.005	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:28	AKB
<b>Magnesium</b>	<b>319</b>	D1	mg/L	20.0	9.00	SW846 6010 B	10/05/2023 11:34	10/05/2023 19:40	MRWD
<b>Molybdenum</b>	<b>0.004</b>	J	mg/L	0.01	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:28	AKB
<b>Nickel</b>	<b>0.005</b>		mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:28	AKB
<b>Potassium</b>	<b>9.01</b>		mg/L	0.50	0.22	SW846 6010 B	10/05/2023 11:34	10/05/2023 19:34	MRWD
Selenium	ND	u	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:28	AKB
<b>Sodium</b>	<b>89.5</b>	D2	mg/L	2.60	1.00	SW846 6010 B	10/09/2023 11:15	10/10/2023 15:31	MRWD
Thallium	ND	u	mg/L	0.0020	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:28	AKB
<b>Zinc</b>	<b>0.009</b>	J	mg/L	0.02	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:28	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	10/09/2023 08:14	10/09/2023 12:39	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Bicarbonate Alkalinity as CaCO3</b>	<b>496</b>		mg/L	4		2320 B-2011	10/06/2023 18:34	10/06/2023 18:34	DJK
Carbonate Alkalinity as CaCO3	ND	u	mg/L	4		2320 B-2011	10/06/2023 18:34	10/06/2023 18:34	DJK
<b>Total Alkalinity</b>	<b>496</b>		mg/L	4		2320 B-2011	10/06/2023 18:34	10/06/2023 18:34	DJK
<b>Chemical Oxygen Demand</b>	<b>24</b>		mg/L	13	8	HACH 8000	10/11/2023 08:53	10/12/2023 10:35	HMF
<b>Specific Conductance (Lab)</b>	<b>4110</b>		umhos/cm	1	1	2510 B-2011	10/04/2023 13:36	10/05/2023 13:58	AED
<b>Hardness as CaCO3</b>	<b>2610</b>	D	mg/L	5	5	2340 C (as HACH 8226)	10/10/2023 10:45	10/10/2023 10:45	CLL
<b>Total Dissolved Solids</b>	<b>3560</b>		mg/L	100	100	2540 C-2015	10/05/2023 12:55	10/05/2023 12:55	HAG
<b>Total Organic Carbon</b>	<b>1.7</b>		mg/L	0.5	0.4	5310 C-2014	10/11/2023 16:38	10/13/2023 00:54	HMF

**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
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**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>0.120</b>	_Sub	pCi/L			EPA 903.1	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>See Attached Subcontract Report</b>	<b>1.11</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>See Attached Subcontract Report</b>	<b>1.23</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>Radium</b>	<b>1.23</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>Chloride</b>	<b>331</b>	D	mg/L	2.5	1.8	EPA 300.0 REV 2.1	10/11/2023 13:57	10/11/2023 13:57	CSC
Fluoride	ND	u	mg/L	0.20		EPA 300.0 REV 2.1	10/10/2023 16:54	10/10/2023 16:54	CSC
<b>Sulfate</b>	<b>1410</b>	D	mg/L	10.0	10.0	EPA 300.0 REV 2.1	10/11/2023 14:25	10/11/2023 14:25	CSC



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### ANALYTICAL RESULTS

Lab Sample ID: **3100291-42**

Sample Collection Date Time: 10/02/2023 15:55

Description: **Mercury Field Blank Well Dup-2**

Sample Received Date Time: 10/04/2023 11:25

#### Metals by EPA 200 Series Methods Madisonville

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	v1, u	ng/L	5.0	1.8	EPA 245.7 REV 2	10/09/2023 08:14	10/09/2023 13:48	TML



**ANALYTICAL RESULTS**

Lab Sample ID: **3100291-43**  
 Description: **Field Blank**

Sample Collection Date Time: 10/03/2023 11:20  
 Sample Received Date Time: 10/04/2023 11:25

**Metals by SW846 6000 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Antimony	ND	u	mg/L	0.005	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:30	AKB
Arsenic	ND	u	mg/L	0.0010	0.0004	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:30	AKB
Barium	ND	u	mg/L	0.004	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:30	AKB
Beryllium	ND	u	mg/L	0.0020	0.0010	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:30	AKB
Boron	ND	u	mg/L	0.10	0.10	SW846 6010 B	10/05/2023 11:34	10/05/2023 19:43	MRWD
Cadmium	ND	u	mg/L	0.0010	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:30	AKB
Calcium	ND	u	mg/L	0.40	0.13	SW846 6010 B	10/05/2023 11:34	10/05/2023 19:43	MRWD
Chromium	ND	u	mg/L	0.0020	0.0006	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:30	AKB
Cobalt	ND	u	mg/L	0.004	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:30	AKB
Copper	ND	u	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:30	AKB
Iron	ND	u	mg/L	0.100	0.050	SW846 6010 B	10/05/2023 11:34	10/05/2023 19:43	MRWD
Lead	ND	u	mg/L	0.002	0.0005	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:30	AKB
Lithium	ND	u	mg/L	0.02	0.005	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:30	AKB
Magnesium	ND	u	mg/L	0.200	0.090	SW846 6010 B	10/05/2023 11:34	10/05/2023 19:43	MRWD
Molybdenum	ND	u	mg/L	0.01	0.002	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:30	AKB
Nickel	ND	u	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:30	AKB
Potassium	ND	u	mg/L	0.50	0.22	SW846 6010 B	10/05/2023 11:34	10/05/2023 19:43	MRWD
Selenium	ND	u	mg/L	0.003	0.001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:30	AKB
Sodium	ND	u	mg/L	0.26	0.10	SW846 6010 B	10/09/2023 11:15	10/10/2023 15:37	MRWD
Thallium	ND	u	mg/L	0.0020	0.0001	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:30	AKB
Zinc	0.005	J	mg/L	0.02	0.004	SW846-6020 A	10/05/2023 11:34	10/10/2023 16:30	AKB

**Metals by EPA 200 Series Methods Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	u	ng/L	5.0	1.8	EPA 245.7 REV 2	10/09/2023 08:14	10/09/2023 12:44	TML

**Conventional Chemistry Analyses Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Bicarbonate Alkalinity as CaCO3	ND	u	mg/L	4		2320 B-2011	10/06/2023 19:24	10/06/2023 19:24	DJK
Carbonate Alkalinity as CaCO3	ND	u	mg/L	4		2320 B-2011	10/06/2023 19:24	10/06/2023 19:24	DJK
Total Alkalinity	ND	u	mg/L	4		2320 B-2011	10/06/2023 19:24	10/06/2023 19:24	DJK
Chemical Oxygen Demand	ND	u	mg/L	13	8	HACH 8000	10/11/2023 08:53	10/12/2023 10:35	HMF
<b>Specific Conductance (Lab)</b>	1		umhos/cm	1	1	2510 B-2011	10/04/2023 13:36	10/05/2023 13:58	AED
Hardness as CaCO3	ND	u	mg/L	1	1	2340 C (as HACH 8226)	10/10/2023 10:45	10/10/2023 10:45	CLL
Total Dissolved Solids	ND	g1, u	mg/L	50	50	2540 C-2015	10/05/2023 12:55	10/05/2023 12:55	HAG
Total Organic Carbon	ND	u	mg/L	0.5	0.4	5310 C-2014	10/11/2023 16:38	10/13/2023 02:19	HMF

**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
See Attached Subcontract Report	0.191	_Sub	pCi/L			EPA 903.1	10/31/2023 13:40	10/31/2023 13:42	RCW



**Subcontracted Analyses**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
<b>See Attached Subcontract Report</b>	<b>0.362</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>See Attached Subcontract Report</b>	<b>0.553</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW
<b>Radium</b>	<b>0.553</b>	_Sub	pCi/L			EPA 904.0 Radium Sum Calc	10/31/2023 13:40	10/31/2023 13:42	RCW

**Ion Chromatography Madisonville**

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Chloride	ND	u	mg/L	0.5	0.4	EPA 300.0 REV 2.1	10/10/2023 17:21	10/10/2023 17:21	CSC
Fluoride	ND	u	mg/L	0.20		EPA 300.0 REV 2.1	10/10/2023 17:21	10/10/2023 17:21	CSC
Sulfate	ND	u	mg/L	1.0	1.0	EPA 300.0 REV 2.1	10/10/2023 17:21	10/10/2023 17:21	CSC





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### ANALYTICAL RESULTS

Lab Sample ID: **3100291-44**  
Description: **Mercury Field Blank**

Sample Collection Date Time: 10/03/2023 11:20

Sample Received Date Time: 10/04/2023 11:25

#### Metals by EPA 200 Series Methods Madisonville

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Mercury	ND	v1, u	ng/L	5.0	1.8	EPA 245.7 REV 2	10/09/2023 08:14	10/09/2023 13:54	TML



**Notes for work order 3100291**

- Samples collected by PACE personnel are done so in accordance with procedures set forth in PACE field services SOPs .
- Results contained in this report are only representative of the samples received.
- PACE does not provide interpretation of these results unless otherwise stated .
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identification based on the presumptive evidence of the mass spectra.  
Concentrations reported are estimated values.

**Qualifiers**

_Sub	See subcontractors report.
D	Results reported from dilution.
D1	Sample required dilution due to high concentration of target analyte.
D2	Sample required dilution due to matrix interference.
G1	Residue yield was less than the method required 2.5mg.
J	Estimated value.
L2	The associated blank spike recovery was below method acceptance limits.
M1	Matrix spike recovery was high; the method control sample recovery was acceptable.
M2	Matrix spike recovery was low; the method control sample recovery was acceptable.
M3	The accuracy of the spike recovery value is reduced since the analyte concentration in the sample is disproportionate to spike level. The method control sample recovery was acceptable.
U	Target analyte was analyzed for, but was below detection limit (the value associated with the qualifier is the laboratory method detection limit in our LIMS system).
V1	CCV recovery was above method acceptance limits. This target analyte not detected in the sample.
Y1	Sample RPD exceeded the method control limit.
Y2	MS/MSD RPD exceeded the method control limit. Recovery met acceptance criteria.

**Standard Qualifiers/Acronyms**

MDL	Method Detection Limit
MRL	Minimum Reporting Limit
ND	Not Detected
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
% Rec	Percent Recovery
RPD	Relative Percent Difference
>	Greater than
<	Less than



**Metals by SW846 6000 Series Methods Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch BCJ0461 - EPA 200.2**

**Blank (BCJ0461-BLK1)**

Prepared: 10/5/2023 11:34, Analyzed: 10/6/2023 14:17

Boron	ND	0.10	mg/L							U
Calcium	ND	0.40	mg/L							U
Iron	ND	0.100	mg/L							U
Magnesium	ND	0.200	mg/L							U
Potassium	ND	0.50	mg/L							U
Sodium	ND	0.26	mg/L							U

**Blank (BCJ0461-BLK2)**

Prepared: 10/5/2023 11:34, Analyzed: 10/10/2023 14:41

Antimony	ND	0.005	mg/L							U
Molybdenum	ND	0.01	mg/L							U
Arsenic	ND	0.0010	mg/L							U
Barium	ND	0.004	mg/L							U
Beryllium	ND	0.0020	mg/L							U
Cadmium	ND	0.0010	mg/L							U
Chromium	ND	0.0020	mg/L							U
Cobalt	ND	0.004	mg/L							U
Copper	ND	0.003	mg/L							U
Lead	ND	0.002	mg/L							U
Lithium	ND	0.02	mg/L							U
Nickel	ND	0.003	mg/L							U
Selenium	ND	0.003	mg/L							U
Thallium	ND	0.0020	mg/L							U
Zinc	0.005	0.02	mg/L							J

**LCS (BCJ0461-BS1)**

Prepared: 10/5/2023 11:34, Analyzed: 10/6/2023 14:21

Boron	0.13	0.10	mg/L	0.125		105	85-115			
Calcium	6.80	0.40	mg/L	6.25		109	85-115			
Iron	6.74	0.100	mg/L	6.25		108	85-115			
Magnesium	6.57	0.200	mg/L	6.25		105	85-115			
Potassium	6.74	0.50	mg/L	6.25		108	85-115			
Sodium	5.75	0.26	mg/L	6.25		91.9	85-115			



**Metals by SW846 6000 Series Methods Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch BCJ0461 - EPA 200.2**

**LCS (BCJ0461-BS2)**

Prepared: 10/5/2023 11:34, Analyzed: 10/10/2023 14:43

Antimony	0.068	0.005	mg/L	0.0625		108	85-115			
Molybdenum	0.07	0.01	mg/L	0.0625		107	85-115			
Arsenic	0.0670	0.0010	mg/L	0.0625		107	85-115			
Barium	0.068	0.004	mg/L	0.0625		109	85-115			
Beryllium	0.0672	0.0020	mg/L	0.0625		108	85-115			
Cadmium	0.0665	0.0010	mg/L	0.0625		106	85-115			
Chromium	0.0677	0.0020	mg/L	0.0625		108	85-115			
Cobalt	0.066	0.004	mg/L	0.0625		105	85-115			
Copper	0.065	0.003	mg/L	0.0625		104	85-115			
Lead	0.065	0.002	mg/L	0.0625		104	85-115			
Lithium	0.07	0.02	mg/L	0.0625		107	85-115			
Nickel	0.066	0.003	mg/L	0.0625		105	85-115			
Selenium	0.069	0.003	mg/L	0.0625		110	85-115			
Thallium	0.0653	0.0020	mg/L	0.0625		104	85-115			
Zinc	0.07	0.02	mg/L	0.0625		112	85-115			

**Matrix Spike (BCJ0461-MS1)**

**Source: 3100291-05**

Prepared: 10/5/2023 11:34, Analyzed: 10/6/2023 17:03

Boron	1.04	1.00	mg/L	0.125	ND	833	80-120			D2, M1
Calcium	232	4.00	mg/L	6.25	212	332	80-120			D2, M3
Iron	33.9	1.00	mg/L	6.25	27.5	103	80-120			D2, M1
Magnesium	78.3	2.00	mg/L	6.25	73.2	81.6	80-120			D2
Potassium	11.6	5.00	mg/L	6.25	5.39	99.3	80-120			D2
Sodium	41.5	2.60	mg/L	6.25	37.0	71.4	80-120			D2, M2

**Matrix Spike (BCJ0461-MS2)**

**Source: 3100291-11**

Prepared: 10/5/2023 11:34, Analyzed: 10/6/2023 17:09

Boron	ND	1.00	mg/L	0.125	ND		80-120			D2, M2, U
Calcium	573	4.00	mg/L	6.25	573	NR	80-120			D2, M3
Iron	13.8	1.00	mg/L	6.25	7.05	109	80-120			D2
Magnesium	238	2.00	mg/L	6.25	266	NR	80-120			D2, M3
Potassium	14.4	5.00	mg/L	6.25	8.23	99.0	80-120			D2
Sodium	84.0	2.60	mg/L	6.25	77.1	110	80-120			D2



**Metals by SW846 6000 Series Methods Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch BCJ0461 - EPA 200.2**

**Matrix Spike (BCJ0461-MS3) Source: 3100291-05**

Prepared: 10/5/2023 11:34, Analyzed: 10/10/2023 15:26

Molybdenum	0.06	0.01	mg/L	0.0625	0.004	85.5	80-120			
Antimony	0.065	0.005	mg/L	0.0625	ND	105	80-120			
Arsenic	0.0731	0.0010	mg/L	0.0625	0.0080	104	80-120			
Barium	0.094	0.004	mg/L	0.0625	0.031	101	80-120			
Beryllium	0.0589	0.0020	mg/L	0.0625	ND	94.3	80-120			
Cadmium	0.0622	0.0010	mg/L	0.0625	ND	99.5	80-120			
Chromium	0.0629	0.0020	mg/L	0.0625	ND	101	80-120			
Cobalt	0.076	0.004	mg/L	0.0625	0.018	92.3	80-120			
Copper	0.057	0.003	mg/L	0.0625	0.001	89.5	80-120			
Lead	0.058	0.002	mg/L	0.0625	ND	92.3	80-120			
Lithium	0.09	0.02	mg/L	0.0625	0.03	100	80-120			
Nickel	0.066	0.003	mg/L	0.0625	0.009	92.0	80-120			
Selenium	0.065	0.003	mg/L	0.0625	ND	105	80-120			
Thallium	0.0542	0.0020	mg/L	0.0625	ND	86.7	80-120			
Zinc	0.07	0.02	mg/L	0.0625	0.01	90.5	80-120			

**Matrix Spike (BCJ0461-MS4) Source: 3100291-11**

Prepared: 10/5/2023 11:34, Analyzed: 10/10/2023 15:42

Molybdenum	0.06	0.01	mg/L	0.0625	0.004	95.9	80-120			
Antimony	0.064	0.005	mg/L	0.0625	ND	103	80-120			
Arsenic	0.0697	0.0010	mg/L	0.0625	0.0028	107	80-120			
Barium	0.075	0.004	mg/L	0.0625	0.011	102	80-120			
Beryllium	0.0569	0.0020	mg/L	0.0625	ND	91.0	80-120			
Cadmium	0.0596	0.0010	mg/L	0.0625	ND	95.4	80-120			
Chromium	0.0619	0.0020	mg/L	0.0625	ND	99.1	80-120			
Cobalt	0.062	0.004	mg/L	0.0625	0.005	90.9	80-120			
Copper	0.055	0.003	mg/L	0.0625	ND	87.4	80-120			
Lead	0.056	0.002	mg/L	0.0625	ND	89.5	80-120			
Lithium	0.10	0.02	mg/L	0.0625	0.04	95.3	80-120			
Nickel	0.060	0.003	mg/L	0.0625	0.004	89.7	80-120			
Selenium	0.074	0.003	mg/L	0.0625	ND	118	80-120			
Thallium	0.0567	0.0020	mg/L	0.0625	ND	90.7	80-120			
Zinc	0.06	0.02	mg/L	0.0625	0.01	83.8	80-120			



**Metals by SW846 6000 Series Methods Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch BCJ0461 - EPA 200.2**

**Matrix Spike Dup (BCJ0461-MSD1) Source: 3100291-05**

Prepared: 10/5/2023 11:34, Analyzed: 10/6/2023 17:06

Boron	ND	1.00	mg/L	0.125	ND		80-120		20	D2, M2, U
Calcium	221	4.00	mg/L	6.25	212	144	80-120	5.18	20	D2, M3
Iron	32.0	1.00	mg/L	6.25	27.5	71.2	80-120	5.97	20	D2
Magnesium	74.3	2.00	mg/L	6.25	73.2	16.8	80-120	5.31	20	D2, M2
Potassium	10.7	5.00	mg/L	6.25	5.39	85.4	80-120	7.77	20	D2
Sodium	39.4	2.60	mg/L	6.25	37.0	38.2	80-120	5.13	20	D2, M2

**Matrix Spike Dup (BCJ0461-MSD2) Source: 3100291-11**

Prepared: 10/5/2023 11:34, Analyzed: 10/6/2023 17:22

Boron	ND	1.00	mg/L	0.125	ND		80-120		20	D2, M2, U
Calcium	602	4.00	mg/L	6.25	573	456	80-120	4.87	20	D2, M3
Iron	14.1	1.00	mg/L	6.25	7.05	113	80-120	1.81	20	D2
Magnesium	248	2.00	mg/L	6.25	266	NR	80-120	3.76	20	D2, M3
Potassium	14.7	5.00	mg/L	6.25	8.23	104	80-120	2.15	20	D2
Sodium	88.0	2.60	mg/L	6.25	77.1	175	80-120	4.71	20	D2, M1

**Matrix Spike Dup (BCJ0461-MSD3) Source: 3100291-05**

Prepared: 10/5/2023 11:34, Analyzed: 10/10/2023 15:40

Molybdenum	0.06	0.01	mg/L	0.0625	0.004	91.2	80-120	5.95	20	
Antimony	0.063	0.005	mg/L	0.0625	ND	101	80-120	3.64	20	
Arsenic	0.0699	0.0010	mg/L	0.0625	0.0080	98.9	80-120	4.54	20	
Barium	0.090	0.004	mg/L	0.0625	0.031	94.2	80-120	4.57	20	
Beryllium	0.0566	0.0020	mg/L	0.0625	ND	90.6	80-120	3.95	20	
Cadmium	0.0592	0.0010	mg/L	0.0625	ND	94.8	80-120	4.90	20	
Chromium	0.0602	0.0020	mg/L	0.0625	ND	96.4	80-120	4.31	20	
Cobalt	0.074	0.004	mg/L	0.0625	0.018	88.8	80-120	2.91	20	
Copper	0.054	0.003	mg/L	0.0625	0.001	85.6	80-120	4.44	20	
Lead	0.056	0.002	mg/L	0.0625	ND	90.3	80-120	2.24	20	
Lithium	0.09	0.02	mg/L	0.0625	0.03	92.9	80-120	5.11	20	
Nickel	0.063	0.003	mg/L	0.0625	0.009	87.4	80-120	4.50	20	
Selenium	0.063	0.003	mg/L	0.0625	ND	101	80-120	3.65	20	
Thallium	0.0561	0.0020	mg/L	0.0625	ND	89.7	80-120	3.40	20	
Zinc	0.07	0.02	mg/L	0.0625	0.01	87.5	80-120	2.66	20	



**Metals by SW846 6000 Series Methods Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch BCJ0461 - EPA 200.2**

**Matrix Spike Dup (BCJ0461-MSD4) Source: 3100291-11**

Prepared: 10/5/2023 11:34, Analyzed: 10/10/2023 15:45

Molybdenum	0.06	0.01	mg/L	0.0625	0.004	97.3	80-120	1.34	20	
Antimony	0.064	0.005	mg/L	0.0625	ND	103	80-120	0.397	20	
Arsenic	0.0700	0.0010	mg/L	0.0625	0.0028	108	80-120	0.464	20	
Barium	0.076	0.004	mg/L	0.0625	0.011	104	80-120	1.75	20	
Beryllium	0.0569	0.0020	mg/L	0.0625	ND	91.0	80-120	0.0246	20	
Cadmium	0.0597	0.0010	mg/L	0.0625	ND	95.5	80-120	0.132	20	
Chromium	0.0626	0.0020	mg/L	0.0625	ND	100	80-120	1.11	20	
Cobalt	0.064	0.004	mg/L	0.0625	0.005	93.0	80-120	2.07	20	
Copper	0.055	0.003	mg/L	0.0625	ND	87.8	80-120	0.495	20	
Lead	0.057	0.002	mg/L	0.0625	ND	90.7	80-120	1.44	20	
Lithium	0.10	0.02	mg/L	0.0625	0.04	97.6	80-120	1.47	20	
Nickel	0.060	0.003	mg/L	0.0625	0.004	90.0	80-120	0.275	20	
Selenium	0.074	0.003	mg/L	0.0625	ND	118	80-120	0.324	20	
Thallium	0.0571	0.0020	mg/L	0.0625	ND	91.4	80-120	0.775	20	
Zinc	0.06	0.02	mg/L	0.0625	0.01	86.2	80-120	2.31	20	

**Post Spike (BCJ0461-PS1) Source: 3100291-05**

Prepared: 10/5/2023 11:34, Analyzed: 10/6/2023 17:25

Boron	1100		ug/L	125	931	138	75-125			D2, M1
Calcium	241000		ug/L	6250	212000	471	75-125			D2, M3
Iron	34400		ug/L	6250	27500	110	75-125			D2, M1
Magnesium	80100		ug/L	6250	73200	111	75-125			D2, M1
Potassium	11600		ug/L	6250	5390	99.4	75-125			D2
Sodium	42800		ug/L	6250	37000	92.2	75-125			D2

**Post Spike (BCJ0461-PS2) Source: 3100291-05**

Prepared: 10/5/2023 11:34, Analyzed: 10/10/2023 15:47

Antimony	63.8		ug/L	62.5	0.103	102	75-125			
Molybdenum	62.6		ug/L	62.5	4.38	93.1	75-125			
Arsenic	72.3		ug/L	62.5	8.02	103	75-125			
Barium	96.1		ug/L	62.5	31.1	104	75-125			
Beryllium	59.4		ug/L	62.5	0.0770	95.0	75-125			
Cadmium	61.6		ug/L	62.5	0.0530	98.5	75-125			
Chromium	61.8		ug/L	62.5	0.520	98.0	75-125			
Cobalt	74.8		ug/L	62.5	18.5	90.1	75-125			
Copper	55.6		ug/L	62.5	1.00	87.3	75-125			
Lead	58.1		ug/L	62.5	0.108	92.8	75-115			
Lithium	92.1		ug/L	62.5	28.8	101	75-125			
Nickel	64.6		ug/L	62.5	8.69	89.5	75-125			
Selenium	65.4		ug/L	62.5	0.128	104	75-125			
Thallium	56.6		ug/L	62.5	0.0500	90.5	75-125			
Zinc	74.6		ug/L	62.5	13.6	97.6	75-125			





**Metals by SW846 6000 Series Methods Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	RPD	Notes
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**Batch BCJ0463 - EPA 200.2**

**Blank (BCJ0463-BLK1)**

Prepared: 10/5/2023 11:34, Analyzed: 10/5/2023 17:21

Boron	ND	0.10	mg/L					U
Calcium	ND	0.40	mg/L					U
Iron	ND	0.100	mg/L					U
Magnesium	ND	0.200	mg/L					U
Potassium	ND	0.50	mg/L					U
Sodium	ND	0.26	mg/L					U

**Blank (BCJ0463-BLK2)**

Prepared: 10/5/2023 11:34, Analyzed: 10/6/2023 12:17

Sodium	ND	0.26	mg/L					U
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**Blank (BCJ0463-BLK3)**

Prepared: 10/5/2023 11:34, Analyzed: 10/10/2023 15:51

Molybdenum	ND	0.01	mg/L					U
Antimony	ND	0.005	mg/L					U
Arsenic	ND	0.0010	mg/L					U
Barium	ND	0.004	mg/L					U
Beryllium	ND	0.0020	mg/L					U
Cadmium	ND	0.0010	mg/L					U
Chromium	ND	0.0020	mg/L					U
Cobalt	ND	0.004	mg/L					U
Copper	ND	0.003	mg/L					U
Lead	ND	0.002	mg/L					U
Lithium	ND	0.02	mg/L					U
Nickel	ND	0.003	mg/L					U
Selenium	ND	0.003	mg/L					U
Thallium	ND	0.0020	mg/L					U
Zinc	ND	0.02	mg/L					U

**LCS (BCJ0463-BS1)**

Prepared: 10/5/2023 11:34, Analyzed: 10/5/2023 17:33

Boron	0.12	0.10	mg/L	0.125		97.0	85-115	
Calcium	6.14	0.40	mg/L	6.25		98.3	85-115	
Iron	6.11	0.100	mg/L	6.25		97.8	85-115	
Magnesium	6.16	0.200	mg/L	6.25		98.5	85-115	
Potassium	6.09	0.50	mg/L	6.25		97.5	85-115	
Sodium	5.22	0.26	mg/L	6.25		83.5	85-115	L2



**Metals by SW846 6000 Series Methods Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch BCJ0463 - EPA 200.2**

**LCS (BCJ0463-BS2)**

Prepared: 10/5/2023 11:34, Analyzed: 10/6/2023 12:20

Sodium	5.25	0.26	mg/L	6.25		84.0	85-115			L2
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**LCS (BCJ0463-BS3)**

Prepared: 10/5/2023 11:34, Analyzed: 10/10/2023 15:54

Antimony	0.063	0.005	mg/L	0.0625		101	85-115			
Molybdenum	0.06	0.01	mg/L	0.0625		97.7	85-115			
Arsenic	0.0621	0.0010	mg/L	0.0625		99.4	85-115			
Barium	0.065	0.004	mg/L	0.0625		104	85-115			
Beryllium	0.0629	0.0020	mg/L	0.0625		101	85-115			
Cadmium	0.0621	0.0010	mg/L	0.0625		99.4	85-115			
Chromium	0.0609	0.0020	mg/L	0.0625		97.5	85-115			
Cobalt	0.060	0.004	mg/L	0.0625		95.6	85-115			
Copper	0.060	0.003	mg/L	0.0625		95.8	85-115			
Lead	0.060	0.002	mg/L	0.0625		96.3	85-115			
Lithium	0.06	0.02	mg/L	0.0625		103	85-115			
Nickel	0.060	0.003	mg/L	0.0625		96.3	85-115			
Selenium	0.064	0.003	mg/L	0.0625		103	85-115			
Thallium	0.0602	0.0020	mg/L	0.0625		96.4	85-115			
Zinc	0.06	0.02	mg/L	0.0625		104	85-115			

**Matrix Spike (BCJ0463-MS1)**

Source: 3100291-25

Prepared: 10/5/2023 11:34, Analyzed: 10/5/2023 19:53

Boron	ND	1.00	mg/L	0.125	ND		80-120			D2, M2, U
Calcium	306	4.00	mg/L	6.25	296	171	80-120			D2, M3
Iron	15.0	1.00	mg/L	6.25	8.65	101	80-120			D2
Magnesium	99.1	2.00	mg/L	6.25	97.2	29.8	80-120			D2, M2
Potassium	9.41	5.00	mg/L	6.25	3.61	92.9	80-120			D2
Sodium	79.1	2.60	mg/L	6.25	77.3	29.3	80-120			D2, M2

**Matrix Spike (BCJ0463-MS2)**

Source: 3100291-29

Prepared: 10/5/2023 11:34, Analyzed: 10/5/2023 20:09

Boron	ND	1.00	mg/L	0.125	ND		80-120			D2, M2, U
Calcium	47.9	4.00	mg/L	6.25	39.3	139	80-120			D2, M1
Iron	14.9	1.00	mg/L	6.25	7.17	123	80-120			D2, M1
Magnesium	28.2	2.00	mg/L	6.25	20.2	127	80-120			D2, M1
Potassium	7.66	5.00	mg/L	6.25	ND	123	80-120			D2, M1
Sodium	32.2	2.60	mg/L	6.25	25.7	105	80-120			D2



**Metals by SW846 6000 Series Methods Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch BCJ0463 - EPA 200.2**

**Matrix Spike (BCJ0463-MS3)**

Source: 3100291-25

Prepared: 10/5/2023 11:34, Analyzed: 10/10/2023 16:46

Antimony	0.059	0.005	mg/L	0.0625	ND	93.8	80-120			
Molybdenum	0.06	0.01	mg/L	0.0625	ND	97.0	80-120			
Arsenic	0.0665	0.0010	mg/L	0.0625	0.0027	102	80-120			
Barium	0.107	0.004	mg/L	0.0625	0.046	98.1	80-120			
Beryllium	0.0582	0.0020	mg/L	0.0625	ND	93.2	80-120			
Cadmium	0.0607	0.0010	mg/L	0.0625	ND	97.2	80-120			
Chromium	0.0640	0.0020	mg/L	0.0625	0.0043	95.5	80-120			
Cobalt	0.059	0.004	mg/L	0.0625	ND	95.0	80-120			
Copper	0.057	0.003	mg/L	0.0625	0.004	84.6	80-120			
Lead	0.061	0.002	mg/L	0.0625	0.003	92.9	80-120			
Lithium	0.09	0.02	mg/L	0.0625	0.03	98.0	80-120			
Nickel	0.060	0.003	mg/L	0.0625	0.006	87.6	80-120			
Selenium	0.067	0.003	mg/L	0.0625	ND	108	80-120			
Thallium	0.0587	0.0020	mg/L	0.0625	ND	93.9	80-120			
Zinc	0.07	0.02	mg/L	0.0625	0.02	86.4	80-120			

**Matrix Spike (BCJ0463-MS4)**

Source: 3100291-29

Prepared: 10/5/2023 11:34, Analyzed: 10/10/2023 16:51

Antimony	0.066	0.005	mg/L	0.0625	ND	105	80-120			
Molybdenum	0.06	0.01	mg/L	0.0625	ND	102	80-120			
Arsenic	0.0683	0.0010	mg/L	0.0625	0.0040	103	80-120			
Barium	0.128	0.004	mg/L	0.0625	0.068	94.7	80-120			
Beryllium	0.0639	0.0020	mg/L	0.0625	ND	102	80-120			
Cadmium	0.0648	0.0010	mg/L	0.0625	ND	104	80-120			
Chromium	0.0635	0.0020	mg/L	0.0625	0.0016	99.0	80-120			
Cobalt	0.060	0.004	mg/L	0.0625	ND	96.7	80-120			
Copper	0.059	0.003	mg/L	0.0625	0.002	91.3	80-120			
Lead	0.062	0.002	mg/L	0.0625	0.001	97.8	80-120			
Lithium	0.07	0.02	mg/L	0.0625	0.005	113	80-120			
Nickel	0.060	0.003	mg/L	0.0625	0.002	93.5	80-120			
Selenium	0.066	0.003	mg/L	0.0625	ND	106	80-120			
Thallium	0.0618	0.0020	mg/L	0.0625	ND	98.8	80-120			
Zinc	0.07	0.02	mg/L	0.0625	0.007	97.8	80-120			



**Metals by SW846 6000 Series Methods Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch BCJ0463 - EPA 200.2**

**Matrix Spike Dup (BCJ0463-MSD1) Source: 3100291-25**

Prepared: 10/5/2023 11:34, Analyzed: 10/5/2023 20:06

Boron	ND	1.00	mg/L	0.125	ND		80-120		20	D2, M2, U
Calcium	316	4.00	mg/L	6.25	296	332	80-120	3.23	20	D2, M3
Iron	15.4	1.00	mg/L	6.25	8.65	108	80-120	2.83	20	D2
Magnesium	103	2.00	mg/L	6.25	97.2	89.1	80-120	3.67	20	D2
Potassium	9.57	5.00	mg/L	6.25	3.61	95.4	80-120	1.66	20	D2
Sodium	81.5	2.60	mg/L	6.25	77.3	67.1	80-120	2.94	20	D2, M2

**Matrix Spike Dup (BCJ0463-MSD2) Source: 3100291-29**

Prepared: 10/5/2023 11:34, Analyzed: 10/5/2023 20:12

Boron	ND	1.00	mg/L	0.125	ND		80-120		20	D2, M2, U
Calcium	44.9	4.00	mg/L	6.25	39.3	89.6	80-120	6.60	20	D2
Iron	13.8	1.00	mg/L	6.25	7.17	106	80-120	7.59	20	D2
Magnesium	26.3	2.00	mg/L	6.25	20.2	97.1	80-120	6.95	20	D2
Potassium	6.84	5.00	mg/L	6.25	ND	109	80-120	11.3	20	D2
Sodium	30.0	2.60	mg/L	6.25	25.7	69.6	80-120	7.06	20	D2, M2

**Matrix Spike Dup (BCJ0463-MSD3) Source: 3100291-25**

Prepared: 10/5/2023 11:34, Analyzed: 10/10/2023 16:49

Antimony	0.060	0.005	mg/L	0.0625	ND	95.4	80-120	1.61	20	
Molybdenum	0.06	0.01	mg/L	0.0625	ND	96.9	80-120	0.0891	20	
Arsenic	0.0680	0.0010	mg/L	0.0625	0.0027	105	80-120	2.26	20	
Barium	0.109	0.004	mg/L	0.0625	0.046	101	80-120	1.88	20	
Beryllium	0.0584	0.0020	mg/L	0.0625	ND	93.5	80-120	0.348	20	
Cadmium	0.0613	0.0010	mg/L	0.0625	ND	98.1	80-120	0.918	20	
Chromium	0.0652	0.0020	mg/L	0.0625	0.0043	97.5	80-120	1.88	20	
Cobalt	0.060	0.004	mg/L	0.0625	ND	96.7	80-120	1.76	20	
Copper	0.058	0.003	mg/L	0.0625	0.004	86.3	80-120	1.95	20	
Lead	0.061	0.002	mg/L	0.0625	0.003	93.3	80-120	0.421	20	
Lithium	0.09	0.02	mg/L	0.0625	0.03	98.1	80-120	0.0952	20	
Nickel	0.061	0.003	mg/L	0.0625	0.006	89.0	80-120	1.40	20	
Selenium	0.068	0.003	mg/L	0.0625	ND	109	80-120	0.712	20	
Thallium	0.0585	0.0020	mg/L	0.0625	ND	93.6	80-120	0.314	20	
Zinc	0.07	0.02	mg/L	0.0625	0.02	89.4	80-120	2.64	20	



**Metals by SW846 6000 Series Methods Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch BCJ0463 - EPA 200.2**

**Matrix Spike Dup (BCJ0463-MSD4) Source: 3100291-29**

Prepared: 10/5/2023 11:34, Analyzed: 10/10/2023 16:53

Molybdenum	0.06	0.01	mg/L	0.0625	ND	101	80-120	0.416	20	
Antimony	0.066	0.005	mg/L	0.0625	ND	105	80-120	0.417	20	
Arsenic	0.0682	0.0010	mg/L	0.0625	0.0040	103	80-120	0.0161	20	
Barium	0.130	0.004	mg/L	0.0625	0.068	98.5	80-120	1.84	20	
Beryllium	0.0643	0.0020	mg/L	0.0625	ND	103	80-120	0.577	20	
Cadmium	0.0646	0.0010	mg/L	0.0625	ND	103	80-120	0.372	20	
Chromium	0.0630	0.0020	mg/L	0.0625	0.0016	98.2	80-120	0.796	20	
Cobalt	0.060	0.004	mg/L	0.0625	ND	95.9	80-120	0.889	20	
Copper	0.060	0.003	mg/L	0.0625	0.002	91.6	80-120	0.318	20	
Lead	0.063	0.002	mg/L	0.0625	0.001	98.7	80-120	0.870	20	
Lithium	0.07	0.02	mg/L	0.0625	0.005	113	80-120	0.0639	20	
Nickel	0.060	0.003	mg/L	0.0625	0.002	93.0	80-120	0.495	20	
Selenium	0.067	0.003	mg/L	0.0625	ND	107	80-120	0.340	20	
Thallium	0.0620	0.0020	mg/L	0.0625	ND	99.3	80-120	0.441	20	
Zinc	0.07	0.02	mg/L	0.0625	0.007	101	80-120	2.60	20	

**Post Spike (BCJ0463-PS1) Source: 3100291-25**

Prepared: 10/5/2023 11:34, Analyzed: 10/5/2023 20:15

Boron	187		ug/L	125	56.6	104	75-125			D2
Calcium	313000		ug/L	6250	296000	284	75-125			D2, M3
Iron	15100		ug/L	6250	8650	104	75-125			D2
Magnesium	102000		ug/L	6250	97200	70.6	75-125			D2, M3
Potassium	9450		ug/L	6250	3610	93.5	75-125			D2
Sodium	80600		ug/L	6250	77300	52.7	75-125			D2, M2

**Post Spike (BCJ0463-PS2) Source: 3100291-25**

Prepared: 10/5/2023 11:34, Analyzed: 10/10/2023 16:56

Antimony	46.8		ug/L	62.5	0.196	74.5	75-125			M2
Molybdenum	59.3		ug/L	62.5	1.00	93.3	75-125			
Arsenic	66.4		ug/L	62.5	2.69	102	75-125			
Barium	109		ug/L	62.5	45.6	101	75-125			
Beryllium	57.9		ug/L	62.5	0.231	92.3	75-125			
Cadmium	60.5		ug/L	62.5	0.0330	96.7	75-125			
Chromium	63.6		ug/L	62.5	4.33	94.8	75-125			
Cobalt	59.4		ug/L	62.5	3.19	89.9	75-125			
Copper	57.2		ug/L	62.5	3.77	85.5	75-125			
Lead	60.0		ug/L	62.5	2.87	91.4	75-115			
Lithium	92.2		ug/L	62.5	32.3	95.9	75-125			
Nickel	60.0		ug/L	62.5	5.69	87.0	75-125			
Selenium	67.1		ug/L	62.5	0.121	107	75-125			
Thallium	57.8		ug/L	62.5	0.0690	92.4	75-125			
Zinc	69.5		ug/L	62.5	15.2	86.8	75-125			



**Metals by SW846 6000 Series Methods Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch BCJ0729 - EPA 200.2</b>										
<b>Blank (BCJ0729-BLK1)</b>										
Prepared: 10/9/2023 11:15, Analyzed: 10/10/2023 13:56										
Sodium	ND	0.26	mg/L							U
<b>LCS (BCJ0729-BS1)</b>										
Prepared: 10/9/2023 11:15, Analyzed: 10/10/2023 13:59										
Sodium	6.02	0.26	mg/L	6.25		96.3	85-115			
<b>Matrix Spike (BCJ0729-MS1) Source: 3100291-25RE1</b>										
Prepared: 10/9/2023 11:15, Analyzed: 10/10/2023 15:40										
Sodium	8.80	0.26	mg/L	6.25	82.5	NR	80-120			M2
<b>Matrix Spike (BCJ0729-MS2) Source: 3100291-29RE1</b>										
Prepared: 10/9/2023 11:15, Analyzed: 10/10/2023 15:46										
Potassium	0.67	0.50	mg/L	6.25	0.76	NR	80-120			
Sodium	3.16	0.26	mg/L	6.25	26.0	NR	80-120			M2
<b>Matrix Spike Dup (BCJ0729-MSD1) Source: 3100291-25RE1</b>										
Prepared: 10/9/2023 11:15, Analyzed: 10/10/2023 15:43										
Sodium	9.01	0.26	mg/L	6.25	82.5	NR	80-120	2.27	20	M2
<b>Matrix Spike Dup (BCJ0729-MSD2) Source: 3100291-29RE1</b>										
Prepared: 10/9/2023 11:15, Analyzed: 10/10/2023 15:59										
Sodium	3.23	0.26	mg/L	6.25	26.0	NR	80-120	2.05	20	M2
<b>Post Spike (BCJ0729-PS1) Source: 3100291-25RE1</b>										
Prepared: 10/9/2023 11:15, Analyzed: 10/10/2023 16:02										
Potassium	911		ug/L	6250	2940	NR	75-125			
Sodium	8680		ug/L	6250	82500	NR	75-125			M2



**Metals by EPA 200 Series Methods Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch BCJ0458 - Default Prep Metals</b>										
<b>Blank (BCJ0458-BLK1)</b>										
Prepared: 10/5/2023 10:07, Analyzed: 10/5/2023 12:49										
Mercury	ND	5.0	ng/L							U
Mercury	ND	5.0	ng/L							U
<b>Blank (BCJ0458-BLK2)</b>										
Prepared: 10/5/2023 10:07, Analyzed: 10/5/2023 12:54										
Mercury	ND	5.0	ng/L							U
Mercury	ND	5.0	ng/L							U
<b>Blank (BCJ0458-BLK3)</b>										
Prepared: 10/5/2023 10:07, Analyzed: 10/5/2023 13:00										
Mercury	ND	5.0	ng/L							U
Mercury	ND	5.0	ng/L							U
<b>LCS (BCJ0458-BS1)</b>										
Prepared: 10/5/2023 10:07, Analyzed: 10/5/2023 13:11										
Mercury	54.5	5.0	ng/L	50.0		109	76-113			
Mercury	54.5	5.0	ng/L	50.0		109	76-113			
<b>Matrix Spike (BCJ0458-MS1) Source: 3100291-05</b>										
Prepared: 10/5/2023 10:07, Analyzed: 10/5/2023 15:36										
Mercury	34.7	5.0	ng/L	50.0	ND	69.4	63-111			
Mercury	34.7	5.0	ng/L	50.0	ND	69.4	63-111			
<b>Matrix Spike (BCJ0458-MS2) Source: 3100291-11</b>										
Prepared: 10/5/2023 10:07, Analyzed: 10/5/2023 15:47										
Mercury	22.9	5.0	ng/L	50.0	ND	45.8	63-111			M2
Mercury	22.9	5.0	ng/L	50.0	ND	45.8	63-111			M2
<b>Matrix Spike Dup (BCJ0458-MSD1) Source: 3100291-05</b>										
Prepared: 10/5/2023 10:07, Analyzed: 10/5/2023 15:42										
Mercury	38.8	5.0	ng/L	50.0	ND	77.5	63-111	11.0	18	M2
Mercury	38.8	5.0	ng/L	50.0	ND	77.5	63-111	11.0	18	
<b>Matrix Spike Dup (BCJ0458-MSD2) Source: 3100291-11</b>										
Prepared: 10/5/2023 10:07, Analyzed: 10/5/2023 15:53										
Mercury	27.2	5.0	ng/L	50.0	ND	54.5	63-111	17.4	18	M2
Mercury	27.2	5.0	ng/L	50.0	ND	54.5	63-111	17.4	18	M2



**Metals by EPA 200 Series Methods Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch BCJ0581 - Default Prep Metals</b>										
<b>Blank (BCJ0581-BLK1)</b>										
Prepared: 10/6/2023 7:36, Analyzed: 10/6/2023 11:55										
Mercury	ND	5.0	ng/L							U
Mercury	ND	5.0	ng/L							U
<b>Blank (BCJ0581-BLK2)</b>										
Prepared: 10/6/2023 7:36, Analyzed: 10/6/2023 12:01										
Mercury	ND	5.0	ng/L							U
Mercury	ND	5.0	ng/L							U
<b>Blank (BCJ0581-BLK3)</b>										
Prepared: 10/6/2023 7:36, Analyzed: 10/6/2023 12:06										
Mercury	ND	5.0	ng/L							U
Mercury	ND	5.0	ng/L							U
<b>LCS (BCJ0581-BS1)</b>										
Prepared: 10/6/2023 7:36, Analyzed: 10/6/2023 12:18										
Mercury	55.1	5.0	ng/L	50.0		110	76-113			
Mercury	55.1	5.0	ng/L	50.0		110	76-113			
<b>Matrix Spike (BCJ0581-MS1) Source: 3100291-21</b>										
Prepared: 10/6/2023 7:36, Analyzed: 10/6/2023 14:34										
Mercury	32.0	5.0	ng/L	50.0	ND	64.0	63-111			
Mercury	32.0	5.0	ng/L	50.0	ND	64.0	63-111			
<b>Matrix Spike (BCJ0581-MS2) Source: 3100291-35</b>										
Prepared: 10/6/2023 7:36, Analyzed: 10/6/2023 14:45										
Mercury	30.4	5.0	ng/L	50.0	ND	60.9	63-111			M2
Mercury	30.4	5.0	ng/L	50.0	ND	60.9	63-111			M2
<b>Matrix Spike Dup (BCJ0581-MSD1) Source: 3100291-21</b>										
Prepared: 10/6/2023 7:36, Analyzed: 10/6/2023 14:39										
Mercury	31.7	5.0	ng/L	50.0	ND	63.3	63-111	1.07	18	
Mercury	31.7	5.0	ng/L	50.0	ND	63.3	63-111	1.07	18	
<b>Matrix Spike Dup (BCJ0581-MSD2) Source: 3100291-35</b>										
Prepared: 10/6/2023 7:36, Analyzed: 10/6/2023 14:51										
Mercury	26.8	5.0	ng/L	50.0	ND	53.6	63-111	12.7	18	M2
Mercury	26.8	5.0	ng/L	50.0	ND	53.6	63-111	12.7	18	M2





**Metals by EPA 200 Series Methods Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch BCJ0715 - Default Prep Metals</b>										
<b>Blank (BCJ0715-BLK1)</b>										
Prepared: 10/9/2023 8:14, Analyzed: 10/9/2023 11:02										
Mercury	ND	5.0	ng/L							U
Mercury	ND	5.0	ng/L							U
<b>Blank (BCJ0715-BLK2)</b>										
Prepared: 10/9/2023 8:14, Analyzed: 10/9/2023 11:07										
Mercury	ND	5.0	ng/L							U
Mercury	ND	5.0	ng/L							U
<b>Blank (BCJ0715-BLK3)</b>										
Prepared: 10/9/2023 8:14, Analyzed: 10/9/2023 11:13										
Mercury	ND	5.0	ng/L							U
Mercury	ND	5.0	ng/L							U
<b>LCS (BCJ0715-BS1)</b>										
Prepared: 10/9/2023 8:14, Analyzed: 10/9/2023 11:24										
Mercury	53.6	5.0	ng/L	50.0		107	76-113			
Mercury	53.6	5.0	ng/L	50.0		107	76-113			
<b>Matrix Spike (BCJ0715-MS1) Source: 3081802-01</b>										
Prepared: 10/9/2023 8:14, Analyzed: 10/9/2023 14:50										
Mercury	51.4	5.0	ng/L	50.0	ND	103	63-111			
Mercury	51.4	5.0	ng/L	50.0	ND	103	63-111			
<b>Matrix Spike (BCJ0715-MS2) Source: 3100291-33</b>										
Prepared: 10/9/2023 8:14, Analyzed: 10/9/2023 15:01										
Mercury	39.3	5.0	ng/L	50.0	ND	78.6	63-111			
Mercury	39.3	5.0	ng/L	50.0	ND	78.6	63-111			
<b>Matrix Spike Dup (BCJ0715-MSD1) Source: 3081802-01</b>										
Prepared: 10/9/2023 8:14, Analyzed: 10/9/2023 14:55										
Mercury	58.4	5.0	ng/L	50.0	ND	117	63-111	12.7	18	M1
Mercury	58.4	5.0	ng/L	50.0	ND	117	63-111	12.7	18	M1
<b>Matrix Spike Dup (BCJ0715-MSD2) Source: 3100291-33</b>										
Prepared: 10/9/2023 8:14, Analyzed: 10/9/2023 15:07										
Mercury	32.3	5.0	ng/L	50.0	ND	64.6	63-111	19.5	18	Y2
Mercury	32.3	5.0	ng/L	50.0	ND	64.6	63-111	19.5	18	Y2



Conventional Chemistry Analyses Madisonville - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch BCJ0056 - Default Prep Micro</b>										
<b>Blank (BCJ0056-BLK1)</b>										
Prepared: 10/4/2023 13:30, Analyzed: 10/5/2023 12:52										
Specific Conductance (Lab)	ND	1	umhos/cm							U
<b>Blank (BCJ0056-BLK2)</b>										
Prepared: 10/4/2023 13:30, Analyzed: 10/5/2023 12:52										
Specific Conductance (Lab)	ND	1	umhos/cm							U
<b>LCS (BCJ0056-BS1)</b>										
Prepared: 10/4/2023 13:30, Analyzed: 10/5/2023 12:52										
Specific Conductance (Lab)	1410		umhos/cm	1410		100	80-120			
<b>LCS (BCJ0056-BS2)</b>										
Prepared: 10/4/2023 13:30, Analyzed: 10/5/2023 12:52										
Specific Conductance (Lab)	1430		umhos/cm	1410		101	80-120			
<b>Duplicate (BCJ0056-DUP1) Source: 3100291-05</b>										
Prepared: 10/4/2023 13:30, Analyzed: 10/5/2023 12:52										
Specific Conductance (Lab)	1720	1	umhos/cm		1710			0.816	0.938	
<b>Duplicate (BCJ0056-DUP2) Source: 3100291-21</b>										
Prepared: 10/4/2023 13:30, Analyzed: 10/5/2023 12:52										
Specific Conductance (Lab)	3440	1	umhos/cm		3410			0.876	0.938	
<b>Batch BCJ0344 - Default Prep Micro</b>										
<b>Blank (BCJ0344-BLK1)</b>										
Prepared: 10/4/2023 13:36, Analyzed: 10/5/2023 13:58										
Specific Conductance (Lab)	ND	1	umhos/cm							U
<b>LCS (BCJ0344-BS1)</b>										
Prepared: 10/4/2023 13:36, Analyzed: 10/5/2023 13:58										
Specific Conductance (Lab)	1420		umhos/cm	1410		101	80-120			
<b>Duplicate (BCJ0344-DUP1) Source: 3100291-35</b>										
Prepared: 10/4/2023 13:36, Analyzed: 10/5/2023 13:58										
Specific Conductance (Lab)	2190	1	umhos/cm		2180			0.412	0.938	



Conventional Chemistry Analyses Madisonville - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch BCJ0344 - Default Prep Micro

Duplicate (BCJ0344-DUP2)

Source: 3100291-11

Prepared: 10/4/2023 13:36, Analyzed: 10/5/2023 13:58

Specific Conductance (Lab)	4120	1	umhos/cm		4090			0.731	0.938	
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Batch BCJ0443 - Default Prep Wet Chem

Blank (BCJ0443-BLK1)

Prepared: 10/5/2023 12:00, Analyzed: 10/5/2023 12:00

Total Dissolved Solids	ND	25	mg/L							U
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LCS (BCJ0443-BS1)

Prepared: 10/5/2023 12:00, Analyzed: 10/5/2023 12:00

Total Dissolved Solids	1490	25	mg/L	1500		99.6	80-120			
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Duplicate (BCJ0443-DUP1)

Source: 3100291-05

Prepared: 10/5/2023 12:00, Analyzed: 10/5/2023 12:00

Total Dissolved Solids	1340	100	mg/L		1330			0.897	10	
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Duplicate (BCJ0443-DUP2)

Source: 3100291-35

Prepared: 10/5/2023 12:00, Analyzed: 10/5/2023 12:00

Total Dissolved Solids	1760	100	mg/L		1780			1.13	10	
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Batch BCJ0472 - Default Prep Wet Chem

Blank (BCJ0472-BLK1)

Prepared: 10/5/2023 12:55, Analyzed: 10/5/2023 12:55

Total Dissolved Solids	ND	25	mg/L							U
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LCS (BCJ0472-BS1)

Prepared: 10/5/2023 12:55, Analyzed: 10/5/2023 12:55

Total Dissolved Solids	1500	25	mg/L	1500		99.8	80-120			
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Duplicate (BCJ0472-DUP1)

Source: 3100291-41

Prepared: 10/5/2023 12:55, Analyzed: 10/5/2023 12:55

Total Dissolved Solids	3560	100	mg/L		3560			0.112	10	
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Conventional Chemistry Analyses Madisonville - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch BCJ0631 - Default Prep Wet Chem

Blank (BCJ0631-BLK1)

Prepared: 10/6/2023 16:06, Analyzed: 10/6/2023 16:06

Bicarbonate Alkalinity as CaCO3	ND	4	mg/L							U
Carbonate Alkalinity as CaCO3	ND	4	mg/L							U
Total Alkalinity	ND	4	mg/L							U

Blank (BCJ0631-BLK2)

Prepared: 10/6/2023 17:30, Analyzed: 10/6/2023 17:30

Bicarbonate Alkalinity as CaCO3	ND	4	mg/L							U
Carbonate Alkalinity as CaCO3	ND	4	mg/L							U
Total Alkalinity	ND	4	mg/L							U

Blank (BCJ0631-BLK3)

Prepared: 10/6/2023 19:00, Analyzed: 10/6/2023 19:00

Total Alkalinity	ND	4	mg/L							U
Carbonate Alkalinity as CaCO3	ND	4	mg/L							U
Bicarbonate Alkalinity as CaCO3	ND	4	mg/L							U

LCS (BCJ0631-BS1)

Prepared: 10/6/2023 17:25, Analyzed: 10/6/2023 17:25

Bicarbonate Alkalinity as CaCO3	23	4	mg/L	15.2		153	0-200			
Carbonate Alkalinity as CaCO3	228	4	mg/L	235		97.0	0-200			
Total Alkalinity	251	4	mg/L	250		100	80-120			

LCS (BCJ0631-BS2)

Prepared: 10/6/2023 18:55, Analyzed: 10/6/2023 18:55

Bicarbonate Alkalinity as CaCO3	34	4	mg/L	15.2		226	0-200			
Carbonate Alkalinity as CaCO3	220	4	mg/L	235		93.6	0-200			
Total Alkalinity	254	4	mg/L	250		102	80-120			

Duplicate (BCJ0631-DUP1)

Source: 3100291-05

Prepared: 10/6/2023 17:14, Analyzed: 10/6/2023 17:14

Carbonate Alkalinity as CaCO3	ND	4	mg/L		ND			10		U
Bicarbonate Alkalinity as CaCO3	320	4	mg/L		321			0.125	10	
Total Alkalinity	320	4	mg/L		321			0.125	10	



Conventional Chemistry Analyses Madisonville - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch BCJ0631 - Default Prep Wet Chem

Duplicate (BCJ0631-DUP2)

Source: 3100291-35

Prepared: 10/6/2023 18:41, Analyzed: 10/6/2023 18:41

Carbonate Alkalinity as CaCO3	ND	4	mg/L		ND				10	U
Total Alkalinity	441	4	mg/L		439			0.545	10	
Bicarbonate Alkalinity as CaCO3	441	4	mg/L		439			0.545	10	

Matrix Spike (BCJ0631-MS1)

Source: 3100291-05

Prepared: 10/6/2023 17:19, Analyzed: 10/6/2023 17:19

Total Alkalinity	337	4	mg/L	50.0	321	32.8	80-120			M3
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Matrix Spike (BCJ0631-MS2)

Source: 3100291-35

Prepared: 10/6/2023 18:48, Analyzed: 10/6/2023 18:48

Total Alkalinity	442	4	mg/L	50.0	439	6.60	80-120			M3
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Batch BCJ0633 - Default Prep Wet Chem

Blank (BCJ0633-BLK1)

Prepared: 10/6/2023 19:09, Analyzed: 10/6/2023 19:09

Bicarbonate Alkalinity as CaCO3	ND	4	mg/L							U
Total Alkalinity	ND	4	mg/L							U
Carbonate Alkalinity as CaCO3	ND	4	mg/L							U

Blank (BCJ0633-BLK2)

Prepared: 10/6/2023 19:39, Analyzed: 10/6/2023 19:39

Carbonate Alkalinity as CaCO3	ND	4	mg/L							U
Total Alkalinity	ND	4	mg/L							U
Bicarbonate Alkalinity as CaCO3	ND	4	mg/L							U

LCS (BCJ0633-BS1)

Prepared: 10/6/2023 19:34, Analyzed: 10/6/2023 19:34

Total Alkalinity	257	4	mg/L	250		103	80-120			
Carbonate Alkalinity as CaCO3	219	4	mg/L	235		93.2	0-200			
Bicarbonate Alkalinity as CaCO3	38	4	mg/L	15.2		249	0-200			



Conventional Chemistry Analyses Madisonville - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch BCJ0633 - Default Prep Wet Chem

Duplicate (BCJ0633-DUP1) Source: 3100291-29

Prepared: 10/6/2023 19:27, Analyzed: 10/6/2023 19:27

Bicarbonate Alkalinity as CaCO3	146	4	mg/L		147			0.681	10	
Total Alkalinity	146	4	mg/L		147			0.681	10	
Carbonate Alkalinity as CaCO3	ND	4	mg/L		ND				10	U

Matrix Spike (BCJ0633-MS1) Source: 3100291-29

Prepared: 10/6/2023 19:30, Analyzed: 10/6/2023 19:30

Total Alkalinity	183	4	mg/L	50.0	147	71.8	80-120			M3
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Batch BCJ0824 - Default Prep Wet Chem

Blank (BCJ0824-BLK1)

Prepared: 10/10/2023 10:45, Analyzed: 10/10/2023 10:45

Hardness as CaCO3	ND	1	mg/L							U
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LCS (BCJ0824-BS1)

Prepared: 10/10/2023 10:45, Analyzed: 10/10/2023 10:45

Hardness as CaCO3	230	1	mg/L	225		102	80-120			
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Duplicate (BCJ0824-DUP1) Source: 3100291-17

Prepared: 10/10/2023 10:45, Analyzed: 10/10/2023 10:45

Hardness as CaCO3	977	2	mg/L		1020			4.52	10	D
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Matrix Spike (BCJ0824-MS1) Source: 3100291-17

Prepared: 10/10/2023 10:45, Analyzed: 10/10/2023 10:45

Hardness as CaCO3	1390	2	mg/L	318	1020	115	80-120			D
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Batch BCJ0936 - Default Prep Wet Chem

Blank (BCJ0936-BLK1)

Prepared: 10/11/2023 13:39, Analyzed: 10/11/2023 13:39

Hardness as CaCO3	ND	1	mg/L							U
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Conventional Chemistry Analyses Madisonville - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch BCJ0936 - Default Prep Wet Chem</b>										
<b>LCS (BCJ0936-BS1)</b>										
Prepared: 10/11/2023 13:39, Analyzed: 10/11/2023 13:39										
Hardness as CaCO3	228	1	mg/L	225		101	80-120			
<b>Duplicate (BCJ0936-DUP1) Source: 3100291-05</b>										
Prepared: 10/11/2023 13:39, Analyzed: 10/11/2023 13:39										
Hardness as CaCO3	837	2	mg/L		868			3.57	10	D1, D
<b>Matrix Spike (BCJ0936-MS1) Source: 3100291-05</b>										
Prepared: 10/11/2023 13:39, Analyzed: 10/11/2023 13:39										
Hardness as CaCO3	1250	2	mg/L	318	868	119	80-120			D1, D
<b>Batch BCJ0947 - Default Prep Wet Chem</b>										
<b>Blank (BCJ0947-BLK1)</b>										
Prepared: 10/11/2023 8:53, Analyzed: 10/12/2023 10:35										
Chemical Oxygen Demand	ND	13	mg/L							U
<b>LCS (BCJ0947-BS1)</b>										
Prepared: 10/11/2023 8:53, Analyzed: 10/12/2023 10:35										
Chemical Oxygen Demand	121	13	mg/L	125		96.8	90-110			
<b>Duplicate (BCJ0947-DUP1) Source: 3100291-05</b>										
Prepared: 10/11/2023 8:53, Analyzed: 10/12/2023 10:35										
Chemical Oxygen Demand	12	13	mg/L		10			18.2	25	J
<b>Matrix Spike (BCJ0947-MS1) Source: 3100291-05</b>										
Prepared: 10/11/2023 8:53, Analyzed: 10/12/2023 10:35										
Chemical Oxygen Demand	263	13	mg/L	250	10	101	90-110			
<b>Matrix Spike Dup (BCJ0947-MSD1) Source: 3100291-05</b>										
Prepared: 10/11/2023 8:53, Analyzed: 10/12/2023 10:35										
Chemical Oxygen Demand	269	13	mg/L	250	10	104	90-110	2.26	10	
<b>Batch BCJ0950 - Default Prep Wet Chem</b>										
<b>Blank (BCJ0950-BLK1)</b>										
Prepared: 10/11/2023 9:03, Analyzed: 10/12/2023 10:35										
Chemical Oxygen Demand	ND	13	mg/L							U



Conventional Chemistry Analyses Madisonville - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch BCJ0950 - Default Prep Wet Chem</b>										
<b>LCS (BCJ0950-BS1)</b>										
Prepared: 10/11/2023 9:03, Analyzed: 10/12/2023 10:35										
Chemical Oxygen Demand	120	13	mg/L	125		96.0	90-110			
<b>Duplicate (BCJ0950-DUP1) Source: 3100291-35</b>										
Prepared: 10/11/2023 9:03, Analyzed: 10/12/2023 10:35										
Chemical Oxygen Demand	24	13	mg/L		24			0.00	25	
<b>Matrix Spike (BCJ0950-MS1) Source: 3100291-35</b>										
Prepared: 10/11/2023 9:03, Analyzed: 10/12/2023 10:35										
Chemical Oxygen Demand	273	13	mg/L	250	24	99.6	90-110			
<b>Matrix Spike Dup (BCJ0950-MSD1) Source: 3100291-35</b>										
Prepared: 10/11/2023 9:03, Analyzed: 10/12/2023 10:35										
Chemical Oxygen Demand	281	13	mg/L	250	24	103	90-110	2.89	10	
<b>Batch BCJ1056 - Default Prep Wet Chem</b>										
<b>Blank (BCJ1056-BLK1)</b>										
Prepared: 10/11/2023 16:38, Analyzed: 10/12/2023 16:03										
Total Organic Carbon	ND	0.5	mg/L							U
<b>LCS (BCJ1056-BS1)</b>										
Prepared: 10/11/2023 16:38, Analyzed: 10/12/2023 16:25										
Total Organic Carbon	4.8	0.5	mg/L	5.00		96.3	80-120			
<b>Duplicate (BCJ1056-DUP1) Source: 3100291-05</b>										
Prepared: 10/11/2023 16:38, Analyzed: 10/12/2023 21:42										
Total Organic Carbon	0.8	0.5	mg/L		0.8			3.13	25	
<b>Duplicate (BCJ1056-DUP2) Source: 3100291-25</b>										
Prepared: 10/11/2023 16:38, Analyzed: 10/13/2023 2:40										
Total Organic Carbon	1.0	0.5	mg/L		0.9			9.30	25	
<b>Matrix Spike (BCJ1056-MS1) Source: 3100291-05</b>										
Prepared: 10/11/2023 16:38, Analyzed: 10/12/2023 22:03										
Total Organic Carbon	3.3	0.5	mg/L	2.50	0.8	98.0	80-120			





Conventional Chemistry Analyses Madisonville - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch BCJ1056 - Default Prep Wet Chem</b>										
<b>Matrix Spike (BCJ1056-MS2)</b>		<b>Source: 3100291-29</b>								
Prepared: 10/11/2023 16:38, Analyzed: 10/13/2023 3:01										
Total Organic Carbon	6.5	0.5	mg/L	5.00	1.5	99.1	80-120			
<b>Batch BCJ1058 - Default Prep Wet Chem</b>										
<b>Blank (BCJ1058-BLK1)</b>										
Prepared: 10/11/2023 16:41, Analyzed: 10/13/2023 3:44										
Total Organic Carbon	ND	0.5	mg/L							U
<b>LCS (BCJ1058-BS1)</b>										
Prepared: 10/11/2023 16:41, Analyzed: 10/13/2023 4:05										
Total Organic Carbon	4.7	0.5	mg/L	5.00		94.5	80-120			
<b>Duplicate (BCJ1058-DUP1)</b>		<b>Source: 3100291-35</b>								
Prepared: 10/11/2023 16:41, Analyzed: 10/13/2023 9:23										
Total Organic Carbon	5.5	0.5	mg/L		5.6			1.45	25	
<b>Duplicate (BCJ1058-DUP2)</b>		<b>Source: 3102707-01</b>								
Prepared: 10/11/2023 16:41, Analyzed: 10/13/2023 10:48										
Total Organic Carbon	1.3	0.5	mg/L		1.2			3.01	25	
<b>Matrix Spike (BCJ1058-MS1)</b>		<b>Source: 3100291-37</b>								
Prepared: 10/11/2023 16:41, Analyzed: 10/13/2023 9:44										
Total Organic Carbon	4.3	0.5	mg/L	2.50	1.9	99.2	80-120			
<b>Matrix Spike (BCJ1058-MS2)</b>		<b>Source: 3102707-02</b>								
Prepared: 10/11/2023 16:41, Analyzed: 10/13/2023 11:10										
Total Organic Carbon	5.7	0.5	mg/L	5.00	0.6	101	80-120			



**Ion Chromatography Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch BCJ0811 - Default Prep IC**

**Blank (BCJ0811-BLK1)**

Prepared: 10/10/2023 6:44, Analyzed: 10/10/2023 6:44

Fluoride	ND	0.20	mg/L							U
Sulfate	ND	1.0	mg/L							U
Chloride	ND	0.5	mg/L							U

**LCS (BCJ0811-BS1)**

Prepared: 10/10/2023 6:16, Analyzed: 10/10/2023 6:16

Chloride	11.9		mg/L	12.5		95.2	90-110			
Sulfate	24.0		mg/L	25.0		95.9	90-110			
Fluoride	5.19		mg/L	5.00		104	90-110			

**Matrix Spike (BCJ0811-MS1)**

Source: 3100291-05

Prepared: 10/10/2023 4:54, Analyzed: 10/10/2023 4:54

Chloride	65.4		mg/L	12.5	52.8	101	80-120			
Sulfate	548		mg/L	25.0	684	NR	80-120			
Fluoride	5.39		mg/L	5.00	0.22	103	80-120			

**Matrix Spike Dup (BCJ0811-MSD1)**

Source: 3100291-05

Prepared: 10/10/2023 5:22, Analyzed: 10/10/2023 5:22

Sulfate	522		mg/L	25.0	684	NR	80-120	4.87	20	M3
Fluoride	5.15		mg/L	5.00	0.22	98.7	80-120	4.53	20	
Chloride	61.8		mg/L	12.5	52.8	71.4	80-120	5.72	10	M2

**Batch BCJ0812 - Default Prep IC**

**Blank (BCJ0812-BLK1)**

Prepared: 10/11/2023 5:41, Analyzed: 10/11/2023 5:41

Sulfate	ND	1.0	mg/L							U
Chloride	ND	0.5	mg/L							U
Fluoride	ND	0.20	mg/L							U

**LCS (BCJ0812-BS1)**

Prepared: 10/11/2023 5:14, Analyzed: 10/11/2023 5:14

Fluoride	5.17		mg/L	5.00		103	90-110			
Sulfate	23.8		mg/L	25.0		95.1	90-110			
Chloride	11.7		mg/L	12.5		94.0	90-110			



**Ion Chromatography Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch BCJ0812 - Default Prep IC**

**Matrix Spike (BCJ0812-MS1) Source: 3100291-25**

Prepared: 10/11/2023 3:52, Analyzed: 10/11/2023 3:52

Fluoride	3.26		mg/L	5.00	0.09	63.4	80-120			M2
Sulfate	831		mg/L	25.0	968	NR	80-120			M3
Chloride	19.6		mg/L	12.5	10.0	76.2	80-120			M2

**Matrix Spike Dup (BCJ0812-MSD1) Source: 3100291-25**

Prepared: 10/11/2023 4:19, Analyzed: 10/11/2023 4:19

Sulfate	807		mg/L	25.0	968	NR	80-120	2.94	20	M3
Fluoride	3.17		mg/L	5.00	0.09	61.5	80-120	2.96	20	M2
Chloride	18.9		mg/L	12.5	10.0	71.1	80-120	3.35	10	M2

**Batch BCJ0816 - Default Prep IC**

**Blank (BCJ0816-BLK1)**

Prepared: 10/10/2023 4:34, Analyzed: 10/10/2023 4:34

Chloride	ND	0.5	mg/L							U
Fluoride	ND	0.20	mg/L							U
Sulfate	ND	1.0	mg/L							U

**Blank (BCJ0816-BLK2)**

Prepared: 10/10/2023 18:43, Analyzed: 10/10/2023 18:43

Sulfate	ND	1.0	mg/L							U
Chloride	ND	0.5	mg/L							U
Fluoride	ND	0.20	mg/L							U

**LCS (BCJ0816-BS1)**

Prepared: 10/10/2023 4:06, Analyzed: 10/10/2023 4:06

Sulfate	22.4		mg/L	25.0		89.5	90-110			L2
Fluoride	4.63		mg/L	5.00		92.5	90-110			
Chloride	10.9		mg/L	12.5		86.9	90-110			L2

**LCS (BCJ0816-BS2)**

Prepared: 10/10/2023 18:16, Analyzed: 10/10/2023 18:16

Sulfate	24.2		mg/L	25.0		96.9	90-110			
Fluoride	5.13		mg/L	5.00		103	90-110			
Chloride	12.2		mg/L	12.5		97.2	90-110			



**Ion Chromatography Madisonville - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch BCJ0816 - Default Prep IC**

**Matrix Spike (BCJ0816-MS1) Source: 3100291-43**

Prepared: 10/10/2023 2:44, Analyzed: 10/10/2023 2:44

Chloride	13.7		mg/L	12.5	0.2	108	80-120			
Fluoride	5.92		mg/L	5.00	0.00	118	80-120			
Sulfate	28.8		mg/L	25.0	0.8	112	80-120			

**Matrix Spike Dup (BCJ0816-MSD1) Source: 3100291-43**

Prepared: 10/10/2023 3:11, Analyzed: 10/10/2023 3:11

Fluoride	5.64		mg/L	5.00	0.00	113	80-120	4.86	20	
Chloride	13.7		mg/L	12.5	0.2	108	80-120	0.379	10	
Sulfate	27.5		mg/L	25.0	0.8	107	80-120	4.64	20	



**Certified Analyses included in this Report**

<b>Analyte</b>	<b>Certifications</b>
<b>2320 B-2011 in Water</b>	
Bicarbonate Alkalinity as CaCO <sub>3</sub>	KY Drinking Water Mdv (00030) TN Drinking Water (02819) VA NELAC MDV (460210)
Carbonate Alkalinity as CaCO <sub>3</sub>	KY Drinking Water Mdv (00030) TN Drinking Water (02819) VA NELAC MDV (460210)
Total Alkalinity	KY Drinking Water Mdv (00030) KY Wastewater Mdv (00030) TN Drinking Water (02819) VA NELAC MDV (460210) MS Drinking Water MADV
<b>2340 C (as HACH 8226) in Water</b>	
Hardness as CaCO <sub>3</sub>	KY Wastewater Mdv (00030) TN Drinking Water (02819) VA NELAC MDV (460210)
<b>2510 B-2011 in Water</b>	
Specific Conductance (Lab)	KY Drinking Water Mdv (00030) VA NELAC MDV (460210) TN Drinking Water (02819) WV Wastewater Madisonville (241), 825 Industrial Rd Madisonville, KY 42431 FL Drinking Water Mdv (E871159)
<b>2540 C-2015 in Water</b>	
Total Dissolved Solids	KY Drinking Water Mdv (00030) VA NELAC MDV (460210) KY Wastewater Mdv (00030) TN Drinking Water (02819) WV Wastewater Madisonville (241), 825 Industrial Rd Madisonville, KY 42431 MS Drinking Water MADV
<b>5310 C-2014 in Water</b>	
Total Organic Carbon	KY Drinking Water Mdv (00030) VA NELAC MDV (460210) KY Wastewater Mdv (00030) TN Drinking Water (02819) ADEM Drinking Water Mdv (41880) WV Wastewater Madisonville (241), 825 Industrial Rd Madisonville, KY 42431 MS Drinking Water MADV
<b>EPA 245.7 REV 2 in Water</b>	
Mercury	VA NELAC MDV (460210) KY Wastewater Mdv (00030)
Mercury	VA NELAC MDV (460210) KY Wastewater Mdv (00030) WV Wastewater Madisonville (241), 825 Industrial Rd Madisonville, KY 42431
<b>EPA 300.0 REV 2.1 in Water</b>	
Chloride	KY Drinking Water Mdv (00030) KY Wastewater Mdv (00030) TN Drinking Water (02819) WV Wastewater Madisonville (241), 825 Industrial Rd Madisonville, KY 42431 MS Drinking Water MADV VA NELAC MDV (460210)
Fluoride	KY Drinking Water Mdv (00030) IN Drinking Water Mdv (C-KY-02) KY Wastewater Mdv (00030) WV Drinking Water Mdv (9959 M) TN Drinking Water (02819) ADEM Drinking Water Mdv (41880) WV Wastewater Madisonville (241), 825 Industrial Rd Madisonville, KY 42431 VA NELAC MDV (460210) MS Drinking Water MADV
Sulfate	KY Drinking Water Mdv (00030) VA NELAC MDV (460210) KY Wastewater Mdv (00030) TN Drinking Water (02819) WV Wastewater Madisonville (241), 825 Industrial Rd Madisonville, KY 42431
<b>HACH 8000 in Water</b>	
Chemical Oxygen Demand	KY Wastewater Mdv (00030) VA NELAC MDV (460210) WV Wastewater Madisonville (241), 825 Industrial Rd Madisonville, KY 42431
<b>SW846 6010 B in Water</b>	
Calcium	VA NELAC MDV (460210)



**Sample Acceptance Checklist for Work Order 3100291**

Shipped By: Client

Temperature:

**Condition**

Check if Custody Seals are Present/Intact	<input type="checkbox"/>
Check if Custody Signatures are Present	<input checked="" type="checkbox"/>
Check if Collector Signature Present	<input checked="" type="checkbox"/>
Check if bottles are intact	<input checked="" type="checkbox"/>
Check if bottles are correct	<input checked="" type="checkbox"/>
Check if bottles have sufficient volume	<input checked="" type="checkbox"/>
Check if samples received on ice	<input checked="" type="checkbox"/>
Check if VOA headspace is acceptable	<input type="checkbox"/>
Check if samples received in holding time.	<input checked="" type="checkbox"/>
Check if samples are preserved properly	<input checked="" type="checkbox"/>



October 31, 2023

Rob Whittington  
Pace Analytical Madisonville  
825 Industrial Rd  
Madisonville, KY 42431

RE: Project: 3100291  
Pace Project No.: 30629265

Dear Rob Whittington:

Enclosed are the analytical results for sample(s) received by the laboratory on October 10, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Greensburg

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

Sincerely,

Samantha Bayura  
samantha.bayura@pacelabs.com  
(724)850-5622  
Project Manager

Enclosures

cc: Doug Wolfe, Pace Analytical Madisonville



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: 3100291  
Pace Project No.: 30629265

### Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601  
ANAB DOD-ELAP Rad Accreditation #: L2417  
ANABISO/IEC 17025:2017 Rad Cert#: L24170  
Alabama Certification #: 41590  
Arizona Certification #: AZ0734  
Arkansas Certification  
California Certification #: 2950  
Colorado Certification #: PA01547  
Connecticut Certification #: PH-0694  
EPA Region 4 DW Rad  
Florida/TNI Certification #: E87683  
Georgia Certification #: C040  
Guam Certification  
Hawaii Certification  
Idaho Certification  
Illinois Certification  
Indiana Certification  
Iowa Certification #: 391  
Kansas Certification #: E-10358  
Kentucky Certification #: KY90133  
KY WW Permit #: KY0098221  
KY WW Permit #: KY0000221  
Louisiana DHH/TNI Certification #: LA010  
Louisiana DEQ/TNI Certification #: 04086  
Maine Certification #: 2023021  
Maryland Certification #: 308  
Massachusetts Certification #: M-PA1457  
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235  
Montana Certification #: Cert0082  
Nebraska Certification #: NE-OS-29-14  
Nevada Certification #: PA014572023-03  
New Hampshire/TNI Certification #: 297622  
New Jersey/TNI Certification #: PA051  
New Mexico Certification #: PA01457  
New York/TNI Certification #: 10888  
North Carolina Certification #: 42706  
North Dakota Certification #: R-190  
Ohio EPA Rad Approval: #41249  
Oregon/TNI Certification #: PA200002-015  
Pennsylvania/TNI Certification #: 65-00282  
Puerto Rico Certification #: PA01457  
Rhode Island Certification #: 65-00282  
South Dakota Certification  
Tennessee Certification #: TN02867  
Texas/TNI Certification #: T104704188-22-18  
Utah/TNI Certification #: PA014572223-14  
USDA Soil Permit #: 525-23-67-77263  
Vermont Dept. of Health: ID# VT-0282  
Virgin Island/PADEP Certification  
Virginia/VELAP Certification #: 460198  
Washington Certification #: C868  
West Virginia DEP Certification #: 143  
West Virginia DHHR Certification #: 9964C  
Wisconsin Approve List for Rad

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### SAMPLE SUMMARY

Project: 3100291  
Pace Project No.: 30629265

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30629265001	3100291-01 MW1	Water	10/02/23 15:40	10/10/23 10:10
30629265002	3100291-03 MW2	Water	10/03/23 08:55	10/10/23 10:10
30629265003	3100291-05 MW3	Water	10/03/23 08:10	10/10/23 10:10
30629265004	3100291-05 MW3 MS	Water	10/03/23 08:10	10/10/23 10:10
30629265005	3100291-05 MW3 MSD	Water	10/03/23 08:10	10/10/23 10:10
30629265006	3100291-07 MW4	Water	10/03/23 11:30	10/10/23 10:10
30629265007	3100291-09 MW4D	Water	10/02/23 10:40	10/10/23 10:10
30629265008	3100291-11 MW5	Water	10/02/23 15:55	10/10/23 10:10
30629265009	3100291-13 MW6	Water	10/03/23 10:45	10/10/23 10:10
30629265010	3100291-15 MW7	Water	10/03/23 12:10	10/10/23 10:10
30629265011	3100291-17 MW8	Water	10/02/23 14:35	10/10/23 10:10
30629265012	3100291-19 MW10	Water	10/03/23 13:05	10/10/23 10:10
30629265013	3100291-21 MW10D	Water	10/02/23 09:45	10/10/23 10:10
30629265014	3100291-23 MW102	Water	10/02/23 12:30	10/10/23 10:10
30629265015	3100291-25 MW104	Water	10/02/23 09:30	10/10/23 10:10
30629265016	3100291-27 MW105R	Water	10/02/23 08:35	10/10/23 10:10
30629265017	3100291-29 MW110	Water	10/02/23 07:35	10/10/23 10:10
30629265018	3100291-31 MW111	Water	10/02/23 12:25	10/10/23 10:10
30629265019	3100291-33 MW112	Water	10/02/23 13:00	10/10/23 10:10
30629265020	3100291-35 MW113	Water	10/02/23 08:30	10/10/23 10:10
30629265021	3100291-37 MW114	Water	10/02/23 10:45	10/10/23 10:10
30629265022	3100291-39 Well Duplicate 1	Water	10/02/23 07:52	10/10/23 10:10
30629265023	3100291-41 Well Duplicate 2	Water	10/02/23 15:55	10/10/23 10:10
30629265024	3100291-43 Field Blank	Water	10/03/23 11:20	10/10/23 10:10

### REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 3100291  
 Pace Project No.: 30629265

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30629265001	3100291-01 MW1	EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
30629265002	3100291-03 MW2	EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
30629265003	3100291-05 MW3	EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
30629265004	3100291-05 MW3 MS	EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
30629265005	3100291-05 MW3 MSD	EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
30629265006	3100291-07 MW4	EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
30629265007	3100291-09 MW4D	EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
30629265008	3100291-11 MW5	EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
30629265009	3100291-13 MW6	EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
30629265010	3100291-15 MW7	EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
30629265011	3100291-17 MW8	EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
30629265012	3100291-19 MW10	EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
30629265013	3100291-21 MW10D	EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

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### SAMPLE ANALYTE COUNT

Project: 3100291  
 Pace Project No.: 30629265

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30629265014	3100291-23 MW102	EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
30629265015	3100291-25 MW104	EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
30629265016	3100291-27 MW105R	EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
30629265017	3100291-29 MW110	EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
30629265018	3100291-31 MW111	EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
30629265019	3100291-33 MW112	EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
30629265020	3100291-35 MW113	EPA 903.1	MAR1	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
30629265021	3100291-37 MW114	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
30629265022	3100291-39 Well Duplicate 1	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
30629265023	3100291-41 Well Duplicate 2	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
30629265024	3100291-43 Field Blank	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 3100291  
 Pace Project No.: 30629265

**Sample: 3100291-01 MW1**      **Lab ID: 30629265001**      Collected: 10/02/23 15:40      Received: 10/10/23 10:10      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Comments: • Sample date and time not listed on sample containers.  
 • Samplers name and signature not listed on COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.221 ± 0.267 (0.407)</b> C:NA T:92%	pCi/L	10/26/23 11:57	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.666 ± 0.405 (0.742)</b> C:75% T:82%	pCi/L	10/24/23 15:32	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	<b>0.887 ± 0.672 (1.15)</b>	pCi/L	10/27/23 15:27	7440-14-4	

**Sample: 3100291-03 MW2**      **Lab ID: 30629265002**      Collected: 10/03/23 08:55      Received: 10/10/23 10:10      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Comments: • Sample date and time not listed on sample containers.  
 • 10/10/23 - Added 5ml HNO3 to all rad bottles prior to analysis. pH <2.  
 • Samplers name and signature not listed on COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.272 ± 0.386 (0.654)</b> C:NA T:90%	pCi/L	10/26/23 11:57	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.384 ± 0.313 (0.613)</b> C:79% T:85%	pCi/L	10/24/23 15:32	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	<b>0.656 ± 0.699 (1.27)</b>	pCi/L	10/27/23 15:27	7440-14-4	

**Sample: 3100291-05 MW3**      **Lab ID: 30629265003**      Collected: 10/03/23 08:10      Received: 10/10/23 10:10      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Comments: • Sample date and time not listed on sample containers.  
 • 10/10/23 - Added 5ml HNO3 to all rad bottles prior to analysis. pH <2.  
 • Samplers name and signature not listed on COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.258 ± 0.268 (0.399)</b> C:NA T:88%	pCi/L	10/26/23 11:57	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.742 ± 0.394 (0.685)</b> C:77% T:81%	pCi/L	10/24/23 15:32	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	<b>1.000 ± 0.662 (1.08)</b>	pCi/L	10/27/23 15:27	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 3100291  
 Pace Project No.: 30629265

**Sample: 3100291-05 MW3 MS**      **Lab ID: 30629265004**      Collected: 10/03/23 08:10      Received: 10/10/23 10:10      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Comments: • Sample date and time not listed on sample containers.  
 • 10/10/23 - Added 5ml HNO3 to all rad bottles prior to analysis. pH <2.  
 • Samplers name and signature not listed on COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>103.05 %REC ± NA (NA)</b> <b>C:NA T:NA</b>	pCi/L	10/26/23 11:57	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>98.45 %REC ± NA (NA)</b> <b>C:NA T:NA</b>	pCi/L	10/24/23 15:32	15262-20-1	

**Sample: 3100291-05 MW3 MSD**      **Lab ID: 30629265005**      Collected: 10/03/23 08:10      Received: 10/10/23 10:10      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Comments: • Sample date and time not listed on sample containers.  
 • 10/10/23 - Added 5ml HNO3 to all rad bottles prior to analysis. pH <2.  
 • Samplers name and signature not listed on COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>102.01 %REC 1.01RPD ± NA (NA)</b> <b>C:NA T:NA</b>	pCi/L	10/26/23 11:57	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>104.56 %REC 6.01RPD ± NA (NA)</b> <b>C:NA T:NA</b>	pCi/L	10/24/23 15:32	15262-20-1	

**Sample: 3100291-07 MW4**      **Lab ID: 30629265006**      Collected: 10/03/23 11:30      Received: 10/10/23 10:10      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Comments: • Sample date and time not listed on sample containers.  
 • 10/10/23 - Added 5ml HNO3 to all rad bottles prior to analysis. pH <2.  
 • Samplers name and signature not listed on COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>-0.0641 ± 0.518 (1.07)</b> <b>C:NA T:81%</b>	pCi/L	10/26/23 11:57	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>1.25 ± 0.571 (0.972)</b> <b>C:74% T:79%</b>	pCi/L	10/24/23 15:32	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	<b>1.25 ± 1.09 (2.04)</b>	pCi/L	10/27/23 15:27	7440-14-4	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 3100291  
 Pace Project No.: 30629265

**Sample: 3100291-09 MW4D**      **Lab ID: 30629265007**      Collected: 10/02/23 10:40      Received: 10/10/23 10:10      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Comments:   
 • Sample date and time not listed on sample containers.  
 • 10/10/23 - Added 5ml HNO3 to all rad bottles prior to analysis. pH <2.  
 • Samplers name and signature not listed on COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.293 ± 0.575 (1.02)</b> C:NA T:96%	pCi/L	10/26/23 11:57	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>1.69 ± 0.605 (0.916)</b> C:79% T:82%	pCi/L	10/24/23 15:33	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	<b>1.98 ± 1.18 (1.94)</b>	pCi/L	10/27/23 15:27	7440-14-4	

**Sample: 3100291-11 MW5**      **Lab ID: 30629265008**      Collected: 10/02/23 15:55      Received: 10/10/23 10:10      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Comments:   
 • Sample date and time not listed on sample containers.  
 • 10/10/23 - Added 5ml HNO3 to all rad bottles prior to analysis. pH <2.  
 • Samplers name and signature not listed on COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.115 ± 0.356 (0.689)</b> C:NA T:87%	pCi/L	10/26/23 12:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>1.81 ± 0.641 (0.973)</b> C:79% T:82%	pCi/L	10/24/23 15:33	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	<b>1.93 ± 0.997 (1.66)</b>	pCi/L	10/27/23 15:27	7440-14-4	

**Sample: 3100291-13 MW6**      **Lab ID: 30629265009**      Collected: 10/03/23 10:45      Received: 10/10/23 10:10      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Comments:   
 • Sample date and time not listed on sample containers.  
 • 10/10/23 - Added 5ml HNO3 to all rad bottles prior to analysis. pH <2.  
 • Samplers name and signature not listed on COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.885 ± 0.539 (0.635)</b> C:NA T:88%	pCi/L	10/26/23 12:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>1.09 ± 0.553 (0.973)</b> C:80% T:66%	pCi/L	10/24/23 15:33	15262-20-1	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 3100291  
 Pace Project No.: 30629265

**Sample: 3100291-13 MW6**      **Lab ID: 30629265009**      Collected: 10/03/23 10:45      Received: 10/10/23 10:10      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Comments:   
 • Sample date and time not listed on sample containers.   
 • 10/10/23 - Added 5ml HNO3 to all rad bottles prior to analysis. pH <2.   
 • Samplers name and signature not listed on COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	<b>1.98 ± 1.09 (1.61)</b>	pCi/L	10/27/23 15:27	7440-14-4	

**Sample: 3100291-15 MW7**      **Lab ID: 30629265010**      Collected: 10/03/23 12:10      Received: 10/10/23 10:10      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Comments:   
 • Sample date and time not listed on sample containers.   
 • 10/10/23 - Added 5ml HNO3 to all rad bottles prior to analysis. pH <2.   
 • Samplers name and signature not listed on COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.389 ± 0.592 (1.02)</b> C:NA T:76%	pCi/L	10/26/23 12:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.204 ± 0.372 (0.815)</b> C:77% T:73%	pCi/L	10/24/23 15:33	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	<b>0.593 ± 0.964 (1.84)</b>	pCi/L	10/27/23 15:27	7440-14-4	

**Sample: 3100291-17 MW8**      **Lab ID: 30629265011**      Collected: 10/02/23 14:35      Received: 10/10/23 10:10      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Comments:   
 • Sample date and time not listed on sample containers.   
 • 10/10/23 - Added 5ml HNO3 to all rad bottles prior to analysis. pH <2.   
 • Samplers name and signature not listed on COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.314 ± 0.436 (0.737)</b> C:NA T:92%	pCi/L	10/26/23 12:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.763 ± 0.422 (0.748)</b> C:73% T:82%	pCi/L	10/24/23 15:33	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	<b>1.08 ± 0.858 (1.49)</b>	pCi/L	10/27/23 15:27	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 3100291  
 Pace Project No.: 30629265

**Sample: 3100291-19 MW10**      **Lab ID: 30629265012**      Collected: 10/03/23 13:05      Received: 10/10/23 10:10      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Comments: • Sample date and time not listed on sample containers.  
 • Samplers name and signature not listed on COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.121 ± 0.530 (1.01)</b> C:NA T:87%	pCi/L	10/26/23 12:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.794 ± 0.416 (0.728)</b> C:79% T:82%	pCi/L	10/24/23 15:33	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	<b>0.915 ± 0.946 (1.74)</b>	pCi/L	10/27/23 15:27	7440-14-4	

**Sample: 3100291-21 MW10D**      **Lab ID: 30629265013**      Collected: 10/02/23 09:45      Received: 10/10/23 10:10      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Comments: • Sample date and time not listed on sample containers.  
 • Samplers name and signature not listed on COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.0561 ± 0.479 (0.935)</b> C:NA T:92%	pCi/L	10/26/23 12:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>1.31 ± 0.511 (0.778)</b> C:74% T:83%	pCi/L	10/24/23 15:33	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	<b>1.37 ± 0.990 (1.71)</b>	pCi/L	10/27/23 15:27	7440-14-4	

**Sample: 3100291-23 MW102**      **Lab ID: 30629265014**      Collected: 10/02/23 12:30      Received: 10/10/23 10:10      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Comments: • Sample date and time not listed on sample containers.  
 • Samplers name and signature not listed on COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.183 ± 0.432 (0.801)</b> C:NA T:90%	pCi/L	10/26/23 12:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.638 ± 0.401 (0.746)</b> C:76% T:80%	pCi/L	10/24/23 15:33	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	<b>0.821 ± 0.833 (1.55)</b>	pCi/L	10/27/23 15:27	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 3100291  
 Pace Project No.: 30629265

**Sample: 3100291-25 MW104**      **Lab ID: 30629265015**      Collected: 10/02/23 09:30      Received: 10/10/23 10:10      Matrix: Water  
 PWS:      Site ID:      Sample Type:  
 Comments:    • Sample date and time not listed on sample containers.  
                   • Samplers name and signature not listed on COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.711 ± 0.472 (0.550)</b> C:NA T:88%	pCi/L	10/26/23 12:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>1.30 ± 0.476 (0.689)</b> C:81% T:83%	pCi/L	10/24/23 15:33	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	<b>2.01 ± 0.948 (1.24)</b>	pCi/L	10/27/23 15:27	7440-14-4	

**Sample: 3100291-27 MW105R**      **Lab ID: 30629265016**      Collected: 10/02/23 08:35      Received: 10/10/23 10:10      Matrix: Water  
 PWS:      Site ID:      Sample Type:  
 Comments:    • Sample date and time not listed on sample containers.  
                   • 10/10/23 - Added 5ml HNO3 to all rad bottles prior to analysis. pH <2.  
                   • Samplers name and signature not listed on COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>1.05 ± 0.558 (0.482)</b> C:NA T:81%	pCi/L	10/26/23 12:24	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.797 ± 0.491 (0.913)</b> C:77% T:73%	pCi/L	10/24/23 15:33	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	<b>1.85 ± 1.05 (1.40)</b>	pCi/L	10/27/23 15:27	7440-14-4	

**Sample: 3100291-29 MW110**      **Lab ID: 30629265017**      Collected: 10/02/23 07:35      Received: 10/10/23 10:10      Matrix: Water  
 PWS:      Site ID:      Sample Type:  
 Comments:    • Sample date and time not listed on sample containers.  
                   • Samplers name and signature not listed on COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.411 ± 0.756 (1.35)</b> C:NA T:52%	pCi/L	10/26/23 12:24	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>0.998 ± 0.574 (1.08)</b> C:73% T:78%	pCi/L	10/24/23 15:33	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	<b>1.41 ± 1.33 (2.43)</b>	pCi/L	10/27/23 15:27	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 3100291  
 Pace Project No.: 30629265

**Sample: 3100291-31 MW111**      **Lab ID: 30629265018**      Collected: 10/02/23 12:25      Received: 10/10/23 10:10      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Comments: • Sample date and time not listed on sample containers.  
 • 10/10/23 - Added 5ml HNO3 to all rad bottles prior to analysis. pH <2.  
 • Samplers name and signature not listed on COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.0673 ± 0.437 (0.882)</b> C:NA T:83%	pCi/L	10/26/23 12:24	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>1.11 ± 0.547 (0.970)</b> C:75% T:81%	pCi/L	10/24/23 15:33	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	<b>1.18 ± 0.984 (1.85)</b>	pCi/L	10/27/23 15:27	7440-14-4	

**Sample: 3100291-33 MW112**      **Lab ID: 30629265019**      Collected: 10/02/23 13:00      Received: 10/10/23 10:10      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Comments: • Sample date and time not listed on sample containers.  
 • Samplers name and signature not listed on COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.115 ± 0.552 (1.04)</b> C:NA T:86%	pCi/L	10/26/23 12:24	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>1.02 ± 0.550 (1.01)</b> C:76% T:77%	pCi/L	10/24/23 15:34	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	<b>1.14 ± 1.10 (2.05)</b>	pCi/L	10/27/23 15:27	7440-14-4	

**Sample: 3100291-35 MW113**      **Lab ID: 30629265020**      Collected: 10/02/23 08:30      Received: 10/10/23 10:10      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Comments: • Sample date and time not listed on sample containers.  
 • 10/10/23 - Added 5ml HNO3 to all rad bottles prior to analysis. pH <2.  
 • Samplers name and signature not listed on COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.470 ± 0.710 (1.22)</b> C:NA T:73%	pCi/L	10/26/23 12:24	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>2.42 ± 0.839 (1.23)</b> C:74% T:67%	pCi/L	10/24/23 15:33	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	<b>2.89 ± 1.55 (2.45)</b>	pCi/L	10/27/23 15:27	7440-14-4	

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### ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 3100291  
 Pace Project No.: 30629265

**Sample: 3100291-37 MW114**      **Lab ID: 30629265021**      Collected: 10/02/23 10:45      Received: 10/10/23 10:10      Matrix: Water  
 PWS:      Site ID:      Sample Type:  
 Comments: • Sample date and time not listed on sample containers.  
 • Samplers name and signature not listed on COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.268 ± 0.380 (0.643)</b> C:NA T:94%	pCi/L	10/26/23 12:51	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>2.90 ± 0.732 (0.651)</b> C:82% T:84%	pCi/L	10/24/23 11:17	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	<b>3.17 ± 1.11 (1.29)</b>	pCi/L	10/27/23 15:42	7440-14-4	

**Sample: 3100291-39 Well Duplicate 1**      **Lab ID: 30629265022**      Collected: 10/02/23 07:52      Received: 10/10/23 10:10      Matrix: Water  
 PWS:      Site ID:      Sample Type:  
 Comments: • Sample date and time not listed on sample containers.  
 • Samplers name and signature not listed on COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.705 ± 0.516 (0.711)</b> C:NA T:91%	pCi/L	10/26/23 12:51	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>1.02 ± 0.450 (0.735)</b> C:77% T:85%	pCi/L	10/24/23 11:17	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	<b>1.73 ± 0.966 (1.45)</b>	pCi/L	10/27/23 15:42	7440-14-4	

**Sample: 3100291-41 Well Duplicate 2**      **Lab ID: 30629265023**      Collected: 10/02/23 15:55      Received: 10/10/23 10:10      Matrix: Water  
 PWS:      Site ID:      Sample Type:  
 Comments: • Sample date and time not listed on sample containers.  
 • 10/10/23 - Added 5ml HNO3 to all rad bottles prior to analysis. pH <2.  
 • Samplers name and signature not listed on COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	<b>0.120 ± 0.374 (0.723)</b> C:NA T:92%	pCi/L	10/26/23 12:51	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	<b>1.11 ± 0.465 (0.739)</b> C:82% T:80%	pCi/L	10/24/23 11:18	15262-20-1	
Pace Analytical Services - Greensburg						
Total Radium	Total Radium Calculation	<b>1.23 ± 0.839 (1.46)</b>	pCi/L	10/27/23 15:42	7440-14-4	

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**ANALYTICAL RESULTS - RADIOCHEMISTRY**

Project: 3100291  
 Pace Project No.: 30629265

**Sample: 3100291-43 Field Blank**      **Lab ID: 30629265024**      Collected: 10/03/23 11:20      Received: 10/10/23 10:10      Matrix: Water  
 PWS:      Site ID:      Sample Type:

Comments: • Sample date and time not listed on sample containers.  
 • Samplers name and signature not listed on COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	<b>0.191 ± 0.545 (1.01)</b> <b>C:NA T:90%</b>	pCi/L	10/26/23 12:51	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	<b>0.362 ± 0.332 (0.671)</b> <b>C:82% T:82%</b>	pCi/L	10/24/23 11:18	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	<b>0.553 ± 0.877 (1.68)</b>	pCi/L	10/27/23 15:42	7440-14-4	

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: 3100291  
 Pace Project No.: 30629265

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QC Batch:	621736	Analysis Method:	EPA 903.1
QC Batch Method:	EPA 903.1	Analysis Description:	903.1 Radium-226
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 30629265001, 30629265002, 30629265003, 30629265004, 30629265005, 30629265006, 30629265007, 30629265008, 30629265009, 30629265010, 30629265011, 30629265012, 30629265013, 30629265014, 30629265015, 30629265016, 30629265017, 30629265018, 30629265019, 30629265020

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METHOD BLANK: 3030239 Matrix: Water

Associated Lab Samples: 30629265001, 30629265002, 30629265003, 30629265004, 30629265005, 30629265006, 30629265007, 30629265008, 30629265009, 30629265010, 30629265011, 30629265012, 30629265013, 30629265014, 30629265015, 30629265016, 30629265017, 30629265018, 30629265019, 30629265020

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.191 ± 0.297 (0.514) C:NA T:85%	pCi/L	10/26/23 11:57	

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: 3100291  
 Pace Project No.: 30629265

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QC Batch: 621740 Analysis Method: EPA 903.1  
 QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226  
 Laboratory: Pace Analytical Services - Greensburg  
 Associated Lab Samples: 30629265021, 30629265022, 30629265023, 30629265024

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METHOD BLANK: 3030244 Matrix: Water  
 Associated Lab Samples: 30629265021, 30629265022, 30629265023, 30629265024

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.152 ± 0.264 (0.471) C:NA T:83%	pCi/L	10/26/23 12:51	

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: 3100291  
 Pace Project No.: 30629265

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QC Batch: 621741	Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0	Analysis Description: 904.0 Radium 228
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30629265021, 30629265022, 30629265023, 30629265024

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METHOD BLANK: 3030245 Matrix: Water

Associated Lab Samples: 30629265021, 30629265022, 30629265023, 30629265024

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.320 ± 0.362 (0.757) C:83% T:78%	pCi/L	10/24/23 11:17	

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**QUALITY CONTROL - RADIOCHEMISTRY**

Project: 3100291  
 Pace Project No.: 30629265

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QC Batch:	621737	Analysis Method:	EPA 904.0
QC Batch Method:	EPA 904.0	Analysis Description:	904.0 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 30629265001, 30629265002, 30629265003, 30629265004, 30629265005, 30629265006, 30629265007, 30629265008, 30629265009, 30629265010, 30629265011, 30629265012, 30629265013, 30629265014, 30629265015, 30629265016, 30629265017, 30629265018, 30629265019, 30629265020

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METHOD BLANK: 3030240 Matrix: Water

Associated Lab Samples: 30629265001, 30629265002, 30629265003, 30629265004, 30629265005, 30629265006, 30629265007, 30629265008, 30629265009, 30629265010, 30629265011, 30629265012, 30629265013, 30629265014, 30629265015, 30629265016, 30629265017, 30629265018, 30629265019, 30629265020

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.469 ± 0.358 (0.693) C:79% T:77%	pCi/L	10/24/23 15:35	

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

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## QUALIFIERS

Project: 3100291  
Pace Project No.: 30629265

### DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, LLC.

SUBCONTRACT ORDER

WO#: 30629265

Pace Analytical Services, LLC Kentucky  
3100291



SENDING LABORATORY:

Pace Analytical Services, LLC Kentucky  
PO BOX 907  
Madisonville, KY 42431  
Phone: (270) 821-7375  
Fax: 844-270-7904  
Project Manager: Rob Whittington

RECEIVING LABORATORY:

Pace Analytical Services LLC Greensburg PA  
1638 Rosey Town Rd Suite 2,3,4  
Greensburg, PA 15601  
Phone: (724) 850-5615  
Fax:

Analysis	Expires	Laboratory ID	Comments
Sample ID: 3100291-01 <sup>MW1</sup> Water	Sampled: 10/02/2023 15:40	Specific Method	001
Radium 228 (sub)	03/30/2024 15:40	EPA 904.0 Radium Sum C	
Radium Total (sub)	03/30/2024 15:40	EPA 904.0 Radium Sum C	
Radium 226 (sub)	03/30/2024 15:40	EPA 903.1	

SAMPLE STATE OF ORIGIN KY

RUSH MULTIPLIER 0

Sample ID: 3100291-02 <sup>MW2</sup> Water	Sampled: 10/03/2023 08:55	Specific Method	
Radium 226 (sub)	03/31/2024 08:55	EPA 903.1	
Radium 228 (sub)	03/31/2024 08:55	EPA 904.0 Radium Sum C	002
Radium Total (sub)	03/31/2024 08:55	EPA 904.0 Radium Sum C	

SAMPLE STATE OF ORIGIN KY

RUSH MULTIPLIER 0

Sample ID: 3100291-03 <sup>MW3</sup> Water	Sampled: 10/03/2023 08:10	Specific Method: <u>USE AS MSMD</u>	
Radium 228 (sub)	03/31/2024 08:10	EPA 904.0 Radium Sum C	003,
Radium Total (sub)	03/31/2024 08:10	EPA 904.0 Radium Sum C	004, MS
Radium 226 (sub)	03/31/2024 08:10	EPA 903.1	005 MSO

SAMPLE STATE OF ORIGIN KY

RUSH MULTIPLIER 0

Received by Pace Greensburg  
Therm ID      Corr Factor +/-       
Receival Temp       
Corrected Temp       
Correct Presentation Y(N)

Released By X De Date 10-9-23 Received By [Signature] Date 10/10/23 10:10

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_

SUBCONTRACT ORDER

PN: 5PB

Due Date: 10/31/23

Pace Analytical Services, LLC Kenton

CLIENT: PRCE\_44\_MVKY

3100291

Analysis	Expires	Laboratory ID	Comments
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Sample ID: <u>MW4</u> 3100291-07	Water	Sampled: 10/03/2023 11:30	Specific Method <u>006</u>
Radium 226 (sub)		03/31/2024 11:30	EPA 904.0 Radium Sum C
Radium Total (sub)		03/31/2024 11:30	EPA 904.0 Radium Sum C
Radium 228 (sub)		03/31/2024 11:30	EPA 903.1

SAMPLE STATE OF ORIGIN KY RUSH MULTIPLIER 0

Sample ID: <u>MW4D</u> 3100291-09	Water	Sampled: 10/02/2023 10:40	Specific Method <u>007</u>
Radium 226 (sub)		03/30/2024 10:40	EPA 903.1
Radium 228 (sub)		03/30/2024 10:40	EPA 904.0 Radium Sum C
Radium Total (sub)		03/30/2024 10:40	EPA 904.0 Radium Sum C

SAMPLE STATE OF ORIGIN KY RUSH MULTIPLIER 0

Sample ID: <u>MW5</u> 3100291-11	Water	Sampled: 10/02/2023 15:55	Specific Method <u>008</u>
Radium 226 (sub)		03/30/2024 15:55	EPA 903.1
Radium 228 (sub)		03/30/2024 15:55	EPA 904.0 Radium Sum C
Radium Total (sub)		03/30/2024 15:55	EPA 904.0 Radium Sum C

SAMPLE STATE OF ORIGIN KY RUSH MULTIPLIER 0

Sample ID: <u>MW6</u> 3100291-13	Water	Sampled: 10/03/2023 10:45	Specific Method <u>009</u>
Radium 226 (sub)		03/31/2024 10:45	EPA 903.1
Radium 228 (sub)		03/31/2024 10:45	EPA 904.0 Radium Sum C
Radium Total (sub)		03/31/2024 10:45	EPA 904.0 Radium Sum C

SAMPLE STATE OF ORIGIN KY RUSH MULTIPLIER 0

Released By K. De Date 10-9-23 Received By [Signature] Date 10/10/23 10:10

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_

SUBCONTRACT ORDER

NO#: 30629265

Pace Analytical Services, LLC Kent  
3100291

PI: SHB Due Date: 10/31/23  
CLIENT: PACE\_44\_HYKY

Analyte Expires Laboratory ID Comments

*MW 7*  
Sample ID: 3100291-15 Water Sampled: 10/03/2023 12:10 Specific Method 010  
Radium Total (sub) 03/31/2024 12:10 EPA 904.0 Radium Sum C  
Radium 226 (sub) 03/31/2024 12:10 EPA 903.1  
Radium 228 (sub) 03/31/2024 12:10 EPA 904.0 Radium Sum C

SAMPLE STATE OF ORIGIN     KY     RUSH MULTIPLIER     0    

*MW 8*  
Sample ID: 3100291-17 Water Sampled: 10/02/2023 14:35 Specific Method *011*  
Radium Total (sub) 03/30/2024 14:35 EPA 904.0 Radium Sum C *ps 10/10/23*  
Radium 226 (sub) 03/30/2024 14:35 EPA 903.1  
Radium 228 (sub) 03/30/2024 14:35 EPA 904.0 Radium Sum C

SAMPLE STATE OF ORIGIN     KY     RUSH MULTIPLIER     0    

*MW 10*  
Sample ID: 3100291-19 Water Sampled: 10/03/2023 13:05 Specific Method 012  
Radium 226 (sub) 03/31/2024 13:05 EPA 903.1  
Radium 228 (sub) 03/31/2024 13:05 EPA 904.0 Radium Sum C  
Radium Total (sub) 03/31/2024 13:05 EPA 904.0 Radium Sum C

SAMPLE STATE OF ORIGIN     KY     RUSH MULTIPLIER     0    

*MW 10 D*  
Sample ID: 3100291-21 Water Sampled: 10/02/2023 09:45 Specific Method 013  
Radium 228 (sub) 03/30/2024 09:45 EPA 904.0 Radium Sum C  
Radium 226 (sub) 03/30/2024 09:45 EPA 903.1  
Radium Total (sub) 03/30/2024 09:45 EPA 904.0 Radium Sum C

SAMPLE STATE OF ORIGIN     KY     RUSH MULTIPLIER     0    

Released By     K De     Date     10-9-23     Received By     Rup...     Date     10/10/23    

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_

**SUBCONTRACT ORDER**  
 Pace Analytical Services, LLC Kentuc  
 3100293

**WO# : 30629265**

PN: SNO      Due Date: 10/31/23  
 CLIENT: PACE\_44\_KVYK

Analysis	Expires	Laboratory ID	Comments
Sample ID: 3100291-23 <sup>MW 102</sup> Water      Sampled: 10/02/2023 12:30      Specific Method			014
Radium 228 (sub)	03/30/2024 12:30	EPA 904.0 Radium Sum C	
Radium Total (sub)	03/30/2024 12:30	EPA 904.0 Radium Sum C	
Radium 226 (sub)	03/30/2024 12:30	EPA 903.1	

SAMPLE STATE OF ORIGIN   KY        RUSH MULTIPLIER   0  

Sample ID: 3100291-25 <sup>MW 104</sup> Water      Sampled: 10/02/2023 09:30      Specific Method			015
Radium 226 (sub)	03/30/2024 09:30	EPA 903.1	
Radium 228 (sub)	03/30/2024 09:30	EPA 904.0 Radium Sum C	
Radium Total (sub)	03/30/2024 09:30	EPA 904.0 Radium Sum C	

SAMPLE STATE OF ORIGIN   KY        RUSH MULTIPLIER   0  

Sample ID: 3100291-27 <sup>MW 105 R</sup> Water      Sampled: 10/02/2023 08:35      Specific Method			016
Radium 228 (sub)	03/30/2024 08:35	EPA 904.0 Radium Sum C	
Radium Total (sub)	03/30/2024 08:35	EPA 904.0 Radium Sum C	
Radium 226 (sub)	03/30/2024 08:35	EPA 903.1	

SAMPLE STATE OF ORIGIN   KY        RUSH MULTIPLIER   0  

Sample ID: 3100291-29 <sup>MW 110</sup> Water      Sampled: 10/02/2023 07:35      Specific Method			017
Radium 228 (sub)	03/30/2024 07:35	EPA 904.0 Radium Sum C	
Radium Total (sub)	03/30/2024 07:35	EPA 904.0 Radium Sum C	
Radium 226 (sub)	03/30/2024 07:35	EPA 903.1	

SAMPLE STATE OF ORIGIN   KY        RUSH MULTIPLIER   0  

Released By   K. D.        Date   10-9-23        Received By   R. P. H.        Date   10/10/23 10:10  

Released By \_\_\_\_\_      Date \_\_\_\_\_      Received By \_\_\_\_\_      Date \_\_\_\_\_



WO#: 30629265

SUBCONTRACT ORDER  
Pace Analytical Services, LLC Kentucky  
3109291

PI: SHS      Due Date: 10/31/23  
CLIENT: PAGE\_44\_MVKY

Analysis	Respirs	Laboratory ID	Comments
<i>Well Duplicate 1</i>			
Sample ID: 3109291-39	Water	Sampled: 10/02/2023 07:52	Specific Method <span style="float: right;">022</span>
Radium Total (sub)		03/30/2024 07:52	EPA 904.0 Radium Sum C
Radium 226 (sub)		03/30/2024 07:52	EPA 903.1
Radium 228 (sub)		03/30/2024 07:52	EPA 904.0 Radium Sum C

SAMPLE STATE OF ORIGIN KY RUSH MULTIPLIER 0

Analysis	Respirs	Laboratory ID	Comments
<i>Well Duplicate 2</i>			
Sample ID: 3109291-41	Water	Sampled: 10/02/2023 15:55	Specific Method <span style="float: right;">023</span>
Radium 226 (sub)		03/30/2024 15:55	EPA 903.1
Radium 228 (sub)		03/30/2024 15:55	EPA 904.0 Radium Sum C
Radium Total (sub)		03/30/2024 15:55	EPA 904.0 Radium Sum C

SAMPLE STATE OF ORIGIN KY RUSH MULTIPLIER 0


Analysis	Respirs	Laboratory ID	Comments
<i>Field Blank</i>			
Sample ID: 3109291-43	Water	Sampled: 10/03/2023 11:20	Specific Method <span style="float: right;">024</span>
Radium Total (sub)		03/31/2024 11:20	EPA 904.0 Radium Sum C
Radium 226 (sub)		03/31/2024 11:20	EPA 903.1
Radium 228 (sub)		03/31/2024 11:20	EPA 904.0 Radium Sum C

SAMPLE STATE OF ORIGIN KY RUSH MULTIPLIER 0

Released By K Da Date 10-9-23 Received By Rep N5M Date 10/10/23 10:10

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_




**DC# Title: ENV-FRM-GBUR-0088 v06\_Sample Condition Upon Receipt- Pittsburgh**  
 Effective Date: 09/20/2023

Client Name: **Pace-KY** Project #: **30629265**

Courier:  FedEx  UPS  USPS  Client  Commercial  Pace  Other: Initial / Date  
 Tracking Number: **1Z0674570141435847**  
 Examined By: **PS 10/10/23**  
 Custody Seal on Cooler/Box Present:  Yes  No Seals Intact:  Yes  No Labeled By: **PS 10/10/23**  
 Thermometer Used: \_\_\_\_\_ Type of Ice: **Wet Blue (None)** Temped By: \_\_\_\_\_  
 Cooler Temperature: Observed Temp \_\_\_\_\_ °C Correction Factor: \_\_\_\_\_ °C Final Temp: \_\_\_\_\_ °C  
 Temp should be above freezing to 6°C **1Z0674570140249050**

Comments:	Yes	No	NA	pH paper Lot#	D.P.D. Residual Chlorine Lot#
Chain of Custody Present	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>10P7M131</b>	_____
Chain of Custody Filled Out: -Were client corrections present on COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Chain of Custody Relinquished	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Sampler Name & Signature on COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Sample Labels match COC -Includes date/time/ID Matrix: <b>WT</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Short Hold Time Analysis (<72hr remaining):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Correct Containers Used: -Pace Containers Used	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Orthophosphate field filtered:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Hex Or Aqueous samples field filtered:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Organic Samples checked for dechlorination	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Filtered volume received for dissolved tests:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
All containers checked for preservation: exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
All containers meet method preservation requirements	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
8260C/D: Headspace in VOA Vials (> 6mm)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
624.1: Headspace in VOA Vials (0mm)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Rad Samples Screened <.25 inrem/hr.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Comments:					

- No dates/times on bottles.  
 - Sample ID = 3100 291-03 not linked as separate samples for rad/mst on COC.  
 added 5.0 mL H<sub>2</sub>O to all bottles for samples MW2, MW3, MW4, MW40, MW5, MW6, MW7, MW8, MW10, MW11, MW12, MW13, MW14, MW15, MW16, MW17, MW18, MW19, MW20, MW21, MW22, MW23, MW24, MW25, MW26, MW27, MW28, MW29, MW30, MW31, MW32, MW33, MW34, MW35, MW36, MW37, MW38, MW39, MW40, MW41, MW42, MW43, MW44, MW45, MW46, MW47, MW48, MW49, MW50, MW51, MW52, MW53, MW54, MW55, MW56, MW57, MW58, MW59, MW60, MW61, MW62, MW63, MW64, MW65, MW66, MW67, MW68, MW69, MW70, MW71, MW72, MW73, MW74, MW75, MW76, MW77, MW78, MW79, MW80, MW81, MW82, MW83, MW84, MW85, MW86, MW87, MW88, MW89, MW90, MW91, MW92, MW93, MW94, MW95, MW96, MW97, MW98, MW99, MW100, MW101, MW102, MW103, MW104, MW105, MW106, MW107, MW108, MW109, MW110, MW111, MW112, MW113, MW114, MW115, MW116, MW117, MW118, MW119, MW120, MW121, MW122, MW123, MW124, MW125, MW126, MW127, MW128, MW129, MW130, MW131, MW132, MW133, MW134, MW135, MW136, MW137, MW138, MW139, MW140, MW141, MW142, MW143, MW144, MW145, MW146, MW147, MW148, MW149, MW150, MW151, MW152, MW153, MW154, MW155, MW156, MW157, MW158, MW159, MW160, MW161, MW162, MW163, MW164, MW165, MW166, MW167, MW168, MW169, MW170, MW171, MW172, MW173, MW174, MW175, MW176, MW177, MW178, MW179, MW180, MW181, MW182, MW183, MW184, MW185, MW186, MW187, MW188, MW189, MW190, MW191, MW192, MW193, MW194, MW195, MW196, MW197, MW198, MW199, MW200, MW201, MW202, MW203, MW204, MW205, MW206, MW207, MW208, MW209, MW210, MW211, MW212, MW213, MW214, MW215, MW216, MW217, MW218, MW219, MW220, MW221, MW222, MW223, MW224, MW225, MW226, MW227, MW228, MW229, MW230, MW231, MW232, MW233, MW234, MW235, MW236, MW237, MW238, MW239, MW240, MW241, MW242, MW243, MW244, MW245, MW246, MW247, MW248, MW249, MW250, MW251, MW252, MW253, MW254, MW255, MW256, MW257, MW258, MW259, MW260, MW261, MW262, MW263, MW264, MW265, MW266, MW267, MW268, MW269, MW270, MW271, MW272, MW273, MW274, MW275, MW276, MW277, MW278, MW279, MW280, MW281, MW282, MW283, MW284, MW285, MW286, MW287, MW288, MW289, MW290, MW291, MW292, MW293, MW294, 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MW724, MW725, MW726, MW727, MW728, MW729, MW730, MW731, MW732, MW733, MW734, MW735, MW736, MW737, MW738, MW739, MW740, MW741, MW742, MW743, MW744, MW745, MW746, MW747, MW748, MW749, MW750, MW751, MW752, MW753, MW754, MW755, MW756, MW757, MW758, MW759, MW760, MW761, MW762, MW763, MW764, MW765, MW766, MW767, MW768, MW769, MW770, MW771, MW772, MW773, MW774, MW775, MW776, MW777, MW778, MW779, MW780, MW781, MW782, MW783, MW784, MW785, MW786, MW787, MW788, MW789, MW790, MW791, MW792, MW793, MW794, MW795, MW796, MW797, MW798, MW799, MW800, MW801, MW802, MW803, MW804, MW805, MW806, MW807, MW808, MW809, MW810, MW811, MW812, MW813, MW814, MW815, MW816, MW817, MW818, MW819, MW820, MW821, MW822, MW823, MW824, MW825, MW826, MW827, MW828, MW829, MW830, MW831, MW832, MW833, MW834, MW835, MW836, MW837, MW838, MW839, MW840, MW841, MW842, MW843, MW844, MW845, MW846, MW847, MW848, MW849, MW850, MW851, MW852, MW853, MW854, MW855, MW856, MW857, MW858, MW859, MW860, MW861, MW862, MW863, MW864, MW865, MW866, 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# Quality Control Sample Performance Assessment



Analysis Must Manually Enter All Fields Indicated in Yellow

Test: RA-228  
 Analyst: MARRI  
 Date: 10/17/2023  
 Batch ID: 75743  
 Reagent: DWT

Method Blank Assessment	MSD Sample ID: 3012239
	MSD Concentration: 0.141
	MSD Counting Uncertainty: 0.266
	MSD MS2: 0.284
MS Numerical Performance Indicators	MSD MS2: Pass
MS Spike vs Numerical Indicator	MSD MS2: Pass
MSD Spike vs MS2	MSD MS2: Pass

Laboratory Control Sample Assessment	MSD ID: 10282023
	MSD Concentration: 23.013
	MSD Counting Uncertainty: 37.781
	MSD MS2: 0.10
	MSD MS2: 0.834
	MSD MS2: 4.933
	MSD MS2: 0.232
	MSD MS2: 0.270
	MSD MS2: 0.668
	MSD MS2: 106.87%
	MSD MS2: Pass
	MSD MS2: 1.36%
	MSD MS2: 73%

Duplicate Sample Assessment	MSD ID: 3012239
	MSD Concentration: 23.013
	MSD Counting Uncertainty: 37.781
	MSD MS2: 0.10
	MSD MS2: 0.834
	MSD MS2: 4.933
	MSD MS2: 0.232
	MSD MS2: 0.270
	MSD MS2: 0.668
	MSD MS2: 106.87%
	MSD MS2: Pass
	MSD MS2: 1.36%
	MSD MS2: 73%

Sample Matrix Spike Control Assessment	MSD ID: 10282023
	MSD Concentration: 23.013
	MSD Counting Uncertainty: 37.781
	MSD MS2: 0.10
	MSD MS2: 0.834
	MSD MS2: 4.933
	MSD MS2: 0.232
	MSD MS2: 0.270
	MSD MS2: 0.668
	MSD MS2: 106.87%
	MSD MS2: Pass
	MSD MS2: 1.36%
	MSD MS2: 73%

Matrix Spike/Matrix Spike Duplicate Sample Assessment	MSD ID: 3012239
	MSD Concentration: 23.013
	MSD Counting Uncertainty: 37.781
	MSD MS2: 0.10
	MSD MS2: 0.834
	MSD MS2: 4.933
	MSD MS2: 0.232
	MSD MS2: 0.270
	MSD MS2: 0.668
	MSD MS2: 106.87%
	MSD MS2: Pass
	MSD MS2: 1.36%
	MSD MS2: 73%

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

Comments:

LL  
10-26-23

MARRI  
10/17/2023

# Quality Control Sample Performance Assessment



Analyst: Marg, Manually Enter all Fields Highlighted in Yellow

Test: Ra-226  
 Analyte: LL1  
 Date: 10/17/2023  
 Batch ID: 73745  
 MSNo: 070

Message Blank Assessment	MS Sample ID
MS Concentration	3026044
MS Counting Uncertainty	0.152
MS MDC	0.283
MS Numerical Performance Indicator	0.671
MS Status vs Numerical Indicator	1.13
MS Status vs RPD	NA
MS Status vs RPD	Pass

Laboratory Control Sample Assessment	LCS ID	Y
Count Data	10282023	10282023
Spike ID	23-013	23-013
Spike Concentration (pCi/L)	30.281	32.038
Volume Used (mL)	0.10	0.40
Amount Added (L, p.F)	0.025	0.51
Target Conc. (pCi/L, p.F)	4.532	4.306
Uncertainty (Calculated)	0.232	0.293
Result (pCi/L, p.F)	5.451	5.361
MS Counting Uncertainty (pCi/L, p.F)	1.704	1.182
Numerical Performance Indicator	0.30	0.67
Recovery (pCi/L)	110.57%	103.16%
Status vs Numerical Indicator	NA	NA
Status vs Recovery	Pass	Pass
Upper % Recovery Limit	133%	133%
Lower % Recovery Limit	77%	77%

Duplicate Sample Assessment	LCS ID	Y
Duplicate Sample ID	10282023	10282023
Sample Result Counting Uncertainty (pCi/L, p.F)	5.451	5.451
Sample Duplicate Result (pCi/L, p.F)	1.704	1.704
Sample Duplicate Result Counting Uncertainty (pCi/L, p.F)	5.361	5.361
Are sample and/or duplicate results below RL?	NO	NO
Duplicate Numerical Performance Indicator	0.109	0.109
(Based on the LCS, Cap Percent Recovery) Duplicate (pCi/L)	2.16%	2.16%
Duplicate Status vs RPD	NA	NA
Duplicate Status vs RPD	Pass	Pass
% RPD Limit	33%	33%

Sample Matrix Spike Central Assessment	Sample ID	Y
Sample Counting Data	MS-001	MS-001
Sample MS ID	MS-001	MS-001
Sample MS ID	MS-001	MS-001
Spike ID	MS-001	MS-001
MS Spike Concentration (pCi/L)	30.281	32.038
MS Spike Volume Used (mL)	0.10	0.40
MS Spike Volume Used (L, p.F)	0.025	0.51
MS Target Conc. (pCi/L, p.F)	4.532	4.306
MS Spike Concentration (pCi/L, p.F)	5.451	5.361
MS Spike Uncertainty (pCi/L, p.F)	1.704	1.182
MS Spike Percent Recovery	110.57%	103.16%
MS Spike Percent Recovery	110.57%	103.16%
MS Spike vs Numerical Indicator	NA	NA
MS Spike vs Recovery	Pass	Pass
MS Spike Lower % Recovery Limit	77%	77%
MS Spike Upper % Recovery Limit	133%	133%

Matrix Spike Duplicate Sample Assessment	Sample ID	Y
Sample MS ID	MS-001	MS-001
Sample MS ID	MS-001	MS-001
Sample Matrix Spike Result	MS-001	MS-001
Sample Matrix Spike Result Counting Uncertainty (pCi/L, p.F)	5.451	5.451
Sample Matrix Spike Duplicate Result	MS-001	MS-001
Sample Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, p.F)	5.361	5.361
Duplicate Numerical Performance Indicator	0.109	0.109
(Based on the Matrix Spike) MS Duplicate (pCi/L)	2.16%	2.16%
MS Duplicate Status vs Numerical Indicator	NA	NA
MS Duplicate Status vs RPD	Pass	Pass
% RPD Limit	33%	33%

30. Sub-portion of duplicate, precision is not applicable if either the sample or duplicate results are below the RL

Comments:

LL 102623

LL 102623

# Chain of Custody

Scheduled for: 10/02/2023



**Client:** Big Rivers Electric Corporation Wilson Station

**Report To:**  
Big Rivers Electric Corporation Wilson Station  
Dawn Storckman  
PO Box 24  
Henderson, KY 42419

**Invoice To:**  
Big Rivers Electric Corporation Wilson Station  
Dawn Storckman  
PO Box 24  
Henderson, KY 42419

**Project:** Wilson Groundwater Wells 082-00004

Phone: (270) 844-6070  
PWS ID#: \_\_\_\_\_  
State: KY

PO#: \_\_\_\_\_  
Quote#: \_\_\_\_\_

Please Print Legibly

Collected by (Signature): Dave Madley  
Required Information

Compliance Monitoring? Yes  No

Samples Chlorinated? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # 3100291 Sample ID#	*required information* Date (mm/dd/yyyy) Collection Time (24 hr)		Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3100291-09 A	<u>10/02/23</u>	<u>10:40</u>	Plastic 1L	1	MW4D	g/c	Alkalinity Bicarbonate Alkalinity Carbonate TDS Sulfate 300.0 Alkalinity Total Conductivity (Lab) Chloride 300.0 Fluoride 300.0 Chromium Tot 6020 Arsenic Tot 6020 Calcium Tot 6010B Cadmium Tot 6020 Boron Tot 6010B Barium Tot 6020 Lead Tot 6020 Antimony Tot 6020 Beryllium Tot 6020 Cobalt Tot 6020 Copper Tot 6020 Iron Tot 6010B Zinc Tot 6020 Lithium Tot 6020 Magnesium Tot 6010B
3100291-09 B	<u>10/02/23</u>	<u>10:40</u>	Plastic 500mL pH<2 w/ HNO3	1	MW4D	g/c	
			Preservation Check: pH: <u>✓</u>				
3100291-09 C	<u>10/02/23</u>	<u>10:40</u>	Plastic 500mL pH<2 w/ H2SO4	1	MW4D	g/c	COD TOC
			Preservation Check: pH: <u>✓</u>				
3100291-09 D	<u>10/02/23</u>	<u>10:40</u>	CG 250mL pH<2 w/HCL	1	MW4D	g/c	Mercury Tot 245.7
3100291-09 E	<u>10/02/23</u>	<u>10:40</u>	CG 250mL pH<2 w/HCL	1	MW4D	g/c	Mercury Tot 245.7

Preservation Check Performed by: KED

Field data collected by Dave Madley Date (mm/dd/yyyy) \_\_\_\_\_ Time (24 hr) 10:40  
pH 6.11 Cond (umho/cm) 4.92 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_  
Temp (oC) 22.63 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_  
Filter (BGO) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature)	Received by: (Signature)	Date (mm/dd/yyyy)	Time (24 hr)
<u>Dave Madley</u>	<u>[Signature]</u>	<u>10-3-23</u>	<u>1430</u>
<u>[Signature]</u>	<u>[Signature]</u>	<u>10-4-23</u>	<u>1125</u>

# Chain of Custody

Scheduled for: **10/02/2023**



Client: **Big Rivers Electric Corporation Wilson Station**

Report To:  
**Big Rivers Electric Corporation Wilson Station**  
Dawn Storkman  
PO Box 24  
Henderson, KY 42418

Invoice To:  
**Big Rivers Electric Corporation Wilson Station**  
Dawn Storkman  
PO Box 24  
Henderson, KY 42418

Project: **Wilson Groundwater Wells 082-09004**

Phone: **(270) 844-6000**  
PWS ID#: \_\_\_\_\_  
State:   KY  

PO#: \_\_\_\_\_  
Quantity: \_\_\_\_\_

Please Print Legibly

Collected by (Signature):   Dawn Medley  

Compliance Monitoring? Yes  No

Samples Chlorinated? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below.

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB (USE ONLY) Workorder # Sample ID#	*required information* Date (mm/dd/yy) Collection Time (24 hr)	Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3100291-09 F	10/02/23 12:46	Plastic 1L pH<2 w/HNO3 Rad 226 (Sub)	1	MW4D	g/c	Radium 226 (sub)
		Preservation Check: pH: <u>  /  </u>				
3100291-09 G	10/02/23 10:40	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW4D	g/c	Radium 228 (sub)
		Preservation Check: pH: <u>  /  </u>				
3100291-09 H	10/02/23 10:40	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW4D	g/c	Radium 228 (sub)
		Preservation Check: pH: <u>  /  </u>				
3100291-09 I	10/02/23 10:40	Plastic 1L pH<2 w/HNO3 (Sub)	1	MW4D	g/c	Radium Total (sub)
		Preservation Check: pH: <u>  /  </u>				
3100291-09 J	10/02/23 10:40	AG 250mL pH<2 w/H2SO4	1	MW4D	g/c	TOC
		Preservation Check: pH: <u>  /  </u>				
<del>0400291-10 A</del>	<del>10/02/23 10:40</del>	<del>CG 250mL pH&lt;2 w/HCl Field Blank</del>	<del>1</del>	<del>Mercury Field Blank N/A</del>	<del>g/c</del>	<del>Mercury Tot 245 7 Field Blank</del>

Preservation Check Performed by   KED  

Field data collected by:   Dawn Medley   Date (mm/dd/yy) \_\_\_\_\_ Time (24 hr) \_\_\_\_\_

pH   6.8   Cond (umho/cm)   4.92   Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC)   22.25   or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature)	Received by: (Signature)	Date (mm/dd/yy)	Time (24 hr)
<u>  Dawn Medley  </u>	<u>  Tami Hand  </u>	<u>  10-3-23  </u>	<u>  1430  </u>
<u>  Tami Hand  </u>	<u>  KED  </u>	<u>  10-4-23  </u>	<u>  1125  </u>



# Chain of Custody

Scheduled for: 10/02/2023



Client: **Big Rivers Electric Corporation Wilson Station**

Report To:  
**Big Rivers Electric Corporation Wilson Station**  
Dawn Starckman  
PO Box 24  
Henderson, KY 42418

Invoice To:  
**Big Rivers Electric Corporation Wilson Station**  
Dawn Starckman  
PO Box 24  
Henderson, KY 42418

Project: **Wilson Groundwater Wells 092-00004**

Phone: (270) 844-6000  
PWS ID#:  
State: KY

PO#: \_\_\_\_\_  
Quote# \_\_\_\_\_

Please Print Legibly

Collected by (Signature): *Dave Madley*  
\*required information\*

Compliance Monitoring? Yes  No

Samples Chlorinated? Yes  No

\*For composite samples please indicate begin time, end time and temp(°C) at end time below:

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

LAB USE ONLY	*required information*		Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
Workorder #	Date (mm/dd/yyyy)	Collection Time (24 hr)					
3100291							
Sample ID#							
3100291-11 A	<u>10/02/23</u>	<u>1555</u>	Plastic 1L	1	MW5	g/c	Alkalinity Bicarbonate Alkalinity Carbonate TDS Sulfate 300.0 Alkalinity Total Conductivity (Lab) Chloride 300.0 Fluoride 300.0 Chromium Tot 6020 Arsenic Tot 6020 Calcium Tot 6010B Cadmium Tot 6020 Boron Tot 6010B Barium Tot 6020 Lead Tot 6020 Antimony Tot 6020 Beryllium Tot 6020 Cobalt Tot 6020 Copper Tot 6020 Iron Tot 6010B Zinc Tot 6020 Lithium Tot 6020 Magnesium Tot 6010B
3100291-11 B	<u>10/02/23</u>	<u>1555</u>	Plastic 500mL pH<2 w/HNO3	1	MW5	g/c	Alkalinity Bicarbonate Alkalinity Carbonate TDS Sulfate 300.0 Alkalinity Total Conductivity (Lab) Chloride 300.0 Fluoride 300.0 Chromium Tot 6020 Arsenic Tot 6020 Calcium Tot 6010B Cadmium Tot 6020 Boron Tot 6010B Barium Tot 6020 Lead Tot 6020 Antimony Tot 6020 Beryllium Tot 6020 Cobalt Tot 6020 Copper Tot 6020 Iron Tot 6010B Zinc Tot 6020 Lithium Tot 6020 Magnesium Tot 6010B
3100291-11 C	<u>10/02/23</u>	<u>1555</u>	Plastic 500mL pH<2 w/H2SO4	1	MW5	g/c	COO-TOC
3100291-11 D	<u>10/02/23</u>	<u>1555</u>	CG 250mL pH<2 w/HCL	1	MW5	g/c	Mercury Tot 245.7
3100291-11 E	<u>10/02/23</u>	<u>1555</u>	CG 250mL pH<2 w/HCL	1	MW5	g/c	Mercury Tot 245.7

Preservation Check: pH: ✓

Preservation Check: pH: ✓

Preservation Check Performed by: *ICED*

Field data collected by: *Dave Madley* Date (mm/dd/yyyy) \_\_\_\_\_ Time (24 hr) \_\_\_\_\_

pH 6.24 Cond (µmho/cm) 3.90 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (°C) 22.32 or (°F) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (gpm) \_\_\_\_\_

Relinquished by: (Signature)	Received by: (Signature)	Date (mm/dd/yyyy)	Time (24 hr)
<u><i>Dave Madley</i></u>	<u><i>Terri Sherrill</i></u>	<u>10-3-23</u>	<u>14:30</u>
<u><i>Terri Sherrill</i></u>	<u><i>ICED</i></u>	<u>10-7-23</u>	<u>1125</u>

# Chain of Custody

Scheduled for: **10/02/2023**



**Client:** Big Rivers Electric Corporation Wilson Station

**Report To:**  
Big Rivers Electric Corporation Wilson Station  
Dawn Storckman  
PO Box 24  
Henderson, KY 42419

**Invoice To:**  
Big Rivers Electric Corporation Wilson Station  
Dawn Storckman  
PO Box 24  
Henderson, KY 42419

**Project:** Wilson Groundwater Wells 092-00004

Phone: (270) 844-6000

PWS ID#:

State: KY

PO#: \_\_\_\_\_

Quota# \_\_\_\_\_

Please Print Legibly

Collected by (Signature) Dawn Maddy

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below:

Samples Chlorinated? Yes  No

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	*required information* Date (mm/dd/yy): Collection Time (24 hr):	Sample Description	Containers	Composite	Sample Analysis Requested
3100291-11 F	<u>10/02/23</u> <u>1555</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	g/c	Radium 226 (sub)
		Preservation Check: pH: <u>✓</u>			
3100291-11 G	<u>10/02/23</u> <u>1555</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	g/c	Radium 228 (sub)
		Preservation Check: pH: <u>✓</u>			
3100291-11 H	<u>10/02/23</u> <u>1558</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	g/c	Radium 228 (sub)
		Preservation Check: pH: <u>✓</u>			
3100291-11 I	<u>10/02/23</u> <u>1558</u>	Plastic 1L pH<2 w/HNO3 (Sub)	1	g/c	Radium Total (sub)
		Preservation Check: pH: <u>✓</u>			
3100291-11 J	<u>10/02/23</u> <u>1555</u>	AG 250mL pH<2 w/H2SO4	1	g/c	TOC
		Preservation Check: pH: _____			
3100291-12 A	<u>10/02/23</u> <u>1555</u>	CG 250mL pH<2 w/HCl Field Blank	1	g/c	Mercury Tot 245.7 Field Blank MW-5

Preservation Check Performed by: ICSD

Field data collected by: Dawn Maddy Date (mm/dd/yy) \_\_\_\_\_ Time (24 hr) \_\_\_\_\_

pH 6.24 Cond (umho) 2.50 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC) 23.83 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (gpm) \_\_\_\_\_

Relinquished by: (Signature)	Received by: (Signature)	Date (mm/dd/yy)	Time (24 hr)
<u>Dawn Maddy</u>	<u>Travis</u>	<u>10-3-23</u>	<u>14:30</u>
<u>Travis</u>	<u>ICSD</u>	<u>10-4-23</u>	<u>1125</u>



### Chain of Custody

Scheduled for: 10/02/2023



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Storkman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Storkman  
PO Box 24  
Henderson, KY 42419

Project: Wilson Groundwater Wells 092-09004

Phone: (270) 844-5000  
 PWS ID# \_\_\_\_\_  
 State: KY

PO#: \_\_\_\_\_  
 Quoted: \_\_\_\_\_

Please Print Legibly

Collected by (Signature): [Signature]  
 Required information

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below.

Samples Chlorinated? Yes  No

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY	*required information*		Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
Workorder #	Date	Collection					
3100291	(mm/dd/yy):	Time (24 hr):					
Sample ID#							
3100291-13 A	<u>10-03-23</u>	<u>1045</u>	Plastic 1L	1	MWB	g/c	Alkalinity Bicarbonate Alkalinity Carbonate TDS Sulfate 300.0 Alkalinity Total Conductivity (Lab) Chloride 300.0 Fluoride 300.0 Chromium Tot 6020 Arsenic Tot 6020 Calcium Tot 6010B Cadmium Tot 6020 Boron Tot 6010B Barium Tot 6020 Lead Tot 6020 Antimony Tot 6020 Beryllium Tot 6020 Cobalt Tot 6020 Copper Tot 6020 Iron Tot 6010B Zinc Tot 6020 Lithium Tot 6020 Magnesium Tot 6010B
3100291-13 B	<u>10-03-23</u>	<u>1045</u>	Plastic 500mL pH<2 w/HNO3	1	MWB	g/c	
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3100291-13 C	<u>10-03-23</u>	<u>1045</u>	Plastic 500mL pH<2 w/H2SO4	1	MWB	g/c	COD TOC
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3100291-13 D	<u>10-03-23</u>	<u>1045</u>	CG 250mL pH<2 w/HCL	1	MWB	g/c	Mercury Tot 245.7
3100291-13 E	<u>10-03-23</u>	<u>1045</u>	CG 250mL pH<2 w/HCL	1	MWB	g/c	Mercury Tot 245.7

Preservation Check Performed by: KED

Field data collected by Tavis Sneed Date (mm/dd/yy) 10-03-23 Time (24 hr) 1045

pH 6.31 Cond (umho) 3.27 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC) 20.34 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) 0.60 Turb. (NTU) 0.7

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature)	Received by: (Signature)	Date (mm/dd/yy)	Time (24 hr)
<u>[Signature]</u>	<u>[Signature]</u>	<u>10-01-23</u>	<u>1125</u>
_____	_____	_____	_____
_____	_____	_____	_____

# Chain of Custody

Scheduled for: **10/02/2023**



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Storchman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station

Project: Wilson Groundwater Wells 092-00004

Dawn Storchman  
PO Box 24  
Henderson, KY 42419

Phone: (270) 844-6000

PWS ID#:

Site: WY

PO#: \_\_\_\_\_

Quota# \_\_\_\_\_

Please Print Legibly

Collected by (Signature): [Signature]

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below

Samples Chlorinated? Yes  No

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	"required information" Date (mm/dd/yyyy) Collection Time (24 hr):		Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3100291-13 F	<u>10-03-23</u>	<u>1045</u>	Plastic 1L pH<2 w/HNO3 Rad 226 (Sub)	1	MW6	g/c	Radium 226 (sub)
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3100291-13 G	<u>10-03-23</u>	<u>1045</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW6	g/c	Radium 228 (sub)
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3100291-13 H	<u>10-03-23</u>	<u>1045</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW6	g/c	Radium 228 (sub)
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3100291-13 I	<u>10-03-23</u>	<u>1045</u>	Plastic 1L pH<2 w/HNO3 (Sub)	1	MW6	g/c	Radium Total (sub)
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3100291-13 J	<u>10-03-23</u>	<u>1045</u>	AG 250mL pH<2 w/H2SO4	1	MW6	g/c	TOC
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3100291-14 A	<u>10-03-21</u>	<u>1045</u>	CG 250mL pH<2 w/HCl Field Blank	1	Mercury Field Blank MW-6	g/c	Mercury Tot 245.7 Field Blank

Preservation Check Performed by: LEED

Field data collected by: Travis Sneed Date (mm/dd/yyyy) 10-03-23 Time (24 hr) 1045

pH 6.31 Cond (µmhos) 3.27 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC) 20.31 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) 0.60 Turb. (NTU) 0.7

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (gpm) \_\_\_\_\_

Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>[Signature]</u>	Date (mm/dd/yyyy) <u>10-11-23</u>	Time (24 hr) <u>11:25</u>
_____	_____	_____	_____
_____	_____	_____	_____

# Chain of Custody

Scheduled for: 10/02/2023



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Stockman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station

Project: Wilson Groundwater Wells 092-00004

Dawn Stockman  
PO Box 24  
Henderson, KY 42419

Phone: (270) 844-6000

PWS ID#:

PO# \_\_\_\_\_

Please Print Legibly

State Ky

County \_\_\_\_\_

Collected by (Signature): [Signature]

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time, end time and temp(°C) at end time below:

Samples Chlorinated? Yes  No

Influent Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

Effluent Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

LAB USE ONLY Worksheet # 3100291 Sample ID#	*required information* Date Collection (mm/dd/yyyy) Time (24 hr):		Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3100291-15 A	<u>10-03-23</u>	<u>1210</u>	Plastic TL	1	MW7	g/c	Alkalinity Bicarbonate Alkalinity Carbonate TDS Sulfate 300.0 Alkalinity Total Conductivity (Lab) Chloride 300.0 Fluoride 300.0 Chromium Tot 6020 Arsenic Tot 6020 Calcium Tot 6010B Cadmium Tot 6020 Boron Tot 6010B Barium Tot 6020 Lead Tot 6020 Antimony Tot 6020 Beryllium Tot 6020 Cobalt Tot 6020 Copper Tot 6020 Iron Tot 6010B Zinc Tot 6020 Lithium Tot 6020 Magnesium Tot 6010B
3100291-15 B	<u>10-03-23</u>	<u>1210</u>	Plastic 500ml pH<2 w/HNO3	1	MW7	g/c	ODD TOC
3100291-15 C	<u>10-03-23</u>	<u>1210</u>	Plastic 500ml pH<2 w/H2SO4	1	MW7	g/c	Mercury Tot 246 7
3100291-15 D	<u>10-03-23</u>	<u>1210</u>	CG 250ml pH<2 w/HCL	1	MW7	g/c	Mercury Tot 246 7
3100291-15 E	<u>10-03-23</u>	<u>1210</u>	CG 250ml pH<2 w/HCL	1	MW7	g/c	Mercury Tot 246 7

Preservation Check: pH: [check]

Preservation Check: pH: [check]

Preservation Check Performed by: KED

Field data collected by: Tami Sneed Date (mm/dd/yyyy) 10-03-23 Time (24 hr) 1210

pH 6.30 Cond (umho/cm) 2.30 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (°C) 26.03 or (°F) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) 0.49 Turb (NTU) 88.2

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (gpm) \_\_\_\_\_

Relinquished by: (Signature) [Signature] Received by: (Signature) [Signature] Date (mm/dd/yyyy) 10-11-23 Time (24 hr) 1125

# Chain of Custody

Scheduled for: 10/02/2023



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Stordiman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Stordiman  
PO Box 24  
Henderson, KY 42419

Project: Wilson Groundwater Wells 092-00004

Phone: (270) 944-6000

PWS ID#:

State: 164

PO#: \_\_\_\_\_

Quote# \_\_\_\_\_

Please Print Legibly

Collected by (Signature): [Signature]

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below

Samples Chlorinated? Yes  No

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	*required information* Date (mm/dd/yyyy)	Collection Time (24 hr)	Bottle and Preservative	Containers	Sample Description	Composita	Sample Analysis Requested
3100291-15 F	<u>10-03-23</u>	<u>1210</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW7	g/c	Radium 228 (sub)
			Preservation Check: pH: <u>✓</u>				
3100291-15 G	<u>10-03-23</u>	<u>1210</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW7	g/c	Radium 228 (sub)
			Preservation Check: pH: <u>✓</u>				
3100291-15 H	<u>10-03-23</u>	<u>1210</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW7	g/c	Radium 228 (sub)
			Preservation Check: pH: <u>✓</u>				
3100291-15 I	<u>10-03-23</u>	<u>1210</u>	Plastic 1L pH<2 w/HNO3 (Sub)	1	MW7	g/c	Radium Total (sub)
			Preservation Check: pH: <u>✓</u>				
3100291-15 J	<u>10-03-23</u>	<u>1210</u>	AG 250mL pH<2 w/H2SO4	1	MW7	g/c	TOC
			Preservation Check: pH: <u>✓</u>				
3100291-16 A	<u>10-03-23</u>	<u>1210</u>	CG 250mL pH<2 w/HCl Field Blank	1	Mercury Field Blank HW-7	g/c	Mercury Tot 245.7 Field Blank

Preservation Check Performed by: 1690

Field data collected by: Travis Sneed Date (mm/dd/yyyy): 10-03-23 Time (24 hr) 1210

pH 6.30 Cond (umho) 2.30 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC) 24.07 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) 0.49 Turb. (NTU) 88.2

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>[Signature]</u>	Date (mm/dd/yyyy) <u>10-4-23</u>	Time (24 hr) <u>1125</u>
--	--	-------------------------------------	-----------------------------

# Chain of Custody

Scheduled for: 10/02/2023



Client: **Big Rivers Electric Corporation Wilson Station**

Report To:  
**Big Rivers Electric Corporation Wilson Station**  
Dawn Storckman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
**Big Rivers Electric Corporation Wilson Station**  
Dawn Storckman  
PO Box 24  
Henderson, KY 42419

Project: **Wilson Groundwater Wells 082-00804**

Phone: (270) 844-6000  
PWS ID#:  
State: Ky

PO#: \_\_\_\_\_  
Quote# \_\_\_\_\_

Please Print Legibly

Collected by (Signature): [Signature]

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time, end time and temp(C) at end time below:

Samples Chlorinated? Yes  No

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # 3100291 Sample ID#	*required information* Date (mm/dd/yyyy):	Collection Time (24 hr):	Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3100291-17 A	<u>10-02-23</u>	<u>1435</u>	Plastic 1L	1	MWB	g/c	Alkalinity Bicarbonate Alkalinity Carbonate TDS Sulfate 300.0 Alkalinity Total Conductivity (Lab) Chloride 900.0 Fluoride 300.0 Chromium Tot 6020 Arsenic Tot 6020 Calcium Tot 6010B Calcium Tot 6020 Boron Tot 6010B Barium Tot 6020 Lead Tot 6020 Antimony Tot 6020 Beryllium Tot 6020 Cobalt Tot 6020 Copper Tot 6020 Iron Tot 6010B Zinc Tot 6020 Lithium Tot 6020 Magnesium Tot 6010B
3100291-17 B	<u>10-02-23</u>	<u>1435</u>	Plastic 500mL pH<2 wH2SO4	1	MWB	g/c	
			Preservation Check: pH: <u>[check]</u>				
3100291-17 C	<u>10-02-23</u>	<u>1435</u>	Plastic 500mL pH<2 wH2SO4	1	MWB	g/c	COD TOC
			Preservation Check: pH: <u>[check]</u>				
3100291-17 D	<u>10-02-23</u>	<u>1435</u>	CG 250mL pH<2 wHCL	1	MWB	g/c	Mercury Tot 245.7
3100291-17 E	<u>10-02-23</u>	<u>1435</u>	CG 250mL pH<2 wHCL	1	MWB	g/c	Mercury Tot 245.7

Preservation Check Performed by: KFO

Field data collected by: Rachel H. Collins Date (mm/dd/yyyy) 10-02-23 Time (24 hr) 1435

pH 6.63 Cond (umho/cm) 1.73 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC) 20.50 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) 0.49 Turb. (NTU) 169

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>[Signature]</u>	Date (mm/dd/yyyy) <u>10-4-23</u>	Time (24 hr) <u>1125</u>
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# Chain of Custody

Scheduled for: 10/02/2023



Client: **Big Rivers Electric Corporation Wilson Station**

Report To:  
**Big Rivers Electric Corporation Wilson Station**  
Dawn Stockman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
**Big Rivers Electric Corporation Wilson Station**

Project: **Wilson Groundwater Wells 892-00004**

Dawn Stockman  
PO Box 24  
Henderson, KY 42419

Phone: (270) 844-6000  
PWS ID#

PO#: \_\_\_\_\_

Please Print Legibly

State ky

Quote# \_\_\_\_\_

Collected by (Signature): [Signature]

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below:

Samples Chlorinated? Yes  No

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # 3100291 Sample ID#	Required Information* Date (mm/dd/yyyy): <u>10-02-23</u>	Collection Time (24 hr): <u>1435</u>	Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3100291-17 F	<u>10-02-23</u>	<u>1435</u>	Plastic 1L pH<2 w/HNO3 Rad 226 (Sub)	1	MWB	g/c	Radium 226 (sub)
			Preservation Check: pH: <u>✓</u>				
3100291-17 B	<u>10-02-23</u>	<u>1435</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MWB	g/c	Radium 228 (sub)
			Preservation Check: pH: <u>✓</u>				
3100291-17 H	<u>10-02-23</u>	<u>1435</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MWB	g/c	Radium 228 (sub)
			Preservation Check: pH: <u>✓</u>				
3100291-17 I	<u>10-02-23</u>	<u>1435</u>	Plastic 1L pH<2 w/HNO3 (Sub)	1	MWB	g/c	Radium Total (sub)
			Preservation Check: pH: <u>✓</u>				
3100291-17 J	<u>10-02-23</u>	<u>1435</u>	AG 250mL pH<2 w/H2SO4	1	MWB	g/c	TOC
			Preservation Check: pH: <u>✓</u>				
3100291-18 A	<u>10-02-23</u>	<u>1435</u>	CG 250mL pH<2 w/HCl Field Blank	1	Mercury Field Blank MW-8	g/c	Mercury Tot 245.7 Field Blank

Preservation Check Performed by: KCD

Field data collected by: Rochel H Collins Date (mm/dd/yyyy) 10-02-23 Time (24 hr) 1435

pH 6.65 Cond (uS/cm) 173 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC) 20.50 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) 0.49 Turb. (NTU) 1.49

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature) [Signature] Received by: (Signature) [Signature] Date (mm/dd/yyyy) 10-4-23 Time (24 hr) 1125



# Chain of Custody

Scheduled for: **10/02/2023**



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Storckman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Storckman  
PO Box 24  
Henderson, KY 42419

Project: Wilson Groundwater Wells 092-0006d

Phone: (270) 844-6000  
PWS ID#  
State: Ky

PO#: \_\_\_\_\_  
Order# \_\_\_\_\_

Please Print Legibly

Collected by (Signature): [Signature]  
\*required information\*

Compliance Monitoring? Yes  No

Samples Chlorinated? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below.

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	*required information* Date (mm/dd/yyyy):	Collection Time (24 hr):	Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3100291-19 A	<u>10-03-23</u>	<u>1305</u>	Plastic 1L	1	MW10	g/c	Alkalinity Bicarbonate Alkalinity Carbonate TDS Sulfate 300.0 Alkalinity Total Conductivity (Lab) Chloride 300.0 Fluoride 300.0 Chromium Tot 6020 Arsenic Tot 6020 Calcium Tot 6010B Cadmium Tot 6020 Boron Tot 6010B Barium Tot 6020 Lead Tot 6020 Antimony Tot 6020 Beryllium Tot 6020 Cobalt Tot 6020 Copper Tot 6020 Iron Tot 6010B Zinc Tot 6020 Lithium Tot 6020 Magnesium Tot 6010B
3100291-19 B	<u>10-03-23</u>	<u>1305</u>	Plastic 500mL pH<2 w/ H2SO4	1	MW10	g/c	COD TOC
3100291-19 C	<u>10-03-23</u>	<u>1305</u>	CG 250mL pH<2 w/HCL	1	MW10	g/c	Mercury Tot 245.7
3100291-19 D	<u>10-03-23</u>	<u>1305</u>	CG 250mL pH<2 w/HCL	1	MW10	g/c	Mercury Tot 245.7

Preservation Check: pH: ✓

Preservation Check: pH: ✓

Preservation Check Performed by ICED

Field data collected by: [Signature] Date (mm/dd/yyyy) 10-03-23 Time (24 hr) 1305  
pH 5.71 Cond 155 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_  
Temp (oC) 24.02 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) 0.37 Turb (NTU) 1.7  
Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by (Signature): [Signature] Received by (Signature): [Signature] Date (mm/dd/yyyy): 10-03-23 Time (24 hr): 1125

# Chain of Custody

Scheduled for: 10/02/2023



**Client:** Big Rivers Electric Corporation Wilson Station

**Report To:**  
Big Rivers Electric Corporation Wilson Station  
Dawn Storckman  
PO Box 24  
Henderson, KY 42419

**Invoice To:**  
Big Rivers Electric Corporation Wilson Station

**Project:** Wilson Groundwater Wells 092-00001

Dawn Storckman  
PO Box 24  
Henderson, KY 42419

Phone: (270) 844-6000

PWS ID#

State Ky

PO# \_\_\_\_\_

Quota# \_\_\_\_\_

Please Print Legibly

Collected by (Signature) [Signature]  
required information

Compliance Monitoring? Yes  No

Samples Chlorinated? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end line below:

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	*required information* Date Collection (mm/dd/yyyy): Time (24 hr):		Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3100291-19 F	<u>10-03-23</u>	<u>1305</u>	Plastic 1L pH<2 w/HNO3 Rad 226 (Sub)	1	MW10	g/c	Radium 226 (sub)
			Preservation Check: pH: _____				
3100291-19 G	<u>10-03-23</u>	<u>1305</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW10	g/c	Radium 228 (sub)
			Preservation Check: pH: _____				
3100291-19 H	<u>10-03-23</u>	<u>1305</u>	Plastic 1L pH<2 w/HNO3 Rad 226 (Sub)	1	MW10	g/c	Radium 226 (sub)
			Preservation Check: pH: _____				
3100291-19 I	<u>10-03-23</u>	<u>1305</u>	Plastic 1L pH<2 w/HNO3 (Sub)	1	MW10	g/c	Radium Total (sub)
			Preservation Check: pH: _____				
3100291-19 J	<u>10-03-23</u>	<u>1305</u>	AG 250mL pH<2 w/H2SO4	1	MW10	g/c	TOC
			Preservation Check: pH: _____				
3100291-20 A	<u>10-03-23</u>	<u>1305</u>	CG 250mL pH<2 w/HCl Field Blank	1	Mercury Field Blank MW-10	g/c	Mercury Tot 245.7 Field Blank

Preservation Check Performed by: [Signature]

Field data collected by: [Signature] Date (mm/dd/yyyy) 10-03-23 Time (24 hr) 1305

pH 5.71 Cond (umho) 3.1e0 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC) 24.02 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) 0.37 Turb. (NTU) 1.7

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (gmin) \_\_\_\_\_

Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>[Signature]</u>	Date (mm/dd/yyyy) <u>10-04-23</u>	Time (24 hr) <u>1125</u>
--	--	--------------------------------------	-----------------------------



# Chain of Custody

Scheduled for: 10/02/2023



Client: **Big Rivers Electric Corporation Wilson Station**

Report To:  
**Big Rivers Electric Corporation Wilson Station**  
**Dawn Storkman**  
**PO Box 24**  
**Henderson, KY 42419**

Invoice To:  
**Big Rivers Electric Corporation Wilson Station**

Project: **Wilson Groundwater Wells 092-00004**

**Dawn Storkman**  
**PO Box 24**  
**Henderson, KY 42419**

Phone: **(270) 644-8000**  
PWS ID#: \_\_\_\_\_  
State: KY

PO#: \_\_\_\_\_  
Quoted: \_\_\_\_\_

Please Print Legibly

Collected by (Signature) *Dawn Storkman*

Compliance Monitoring? Yes  No

Samples Chlorinated? Yes  No

\*For composite samples please indicate begin time, end time and temp(°C) at end time below

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

LAB USE ONLY	*required information*		Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
Workorder # Sample ID#	Date (m/d/yyyy):	Collection Time (24 hr):					
3100291-21 A	<u>10-2-2023</u>	<u>09:45</u>	Plastic 1L	1	MW-100	g/c	Alkalinity Bicarbonate Alkalinity Carbonate TDS Sulfate 300.0 Alkalinity Total Conductivity (Lab) Chloride 300.0 Fluoride 300.0 Chromium Tot 6020 Arsenic Tot 6020 Calcium Tot 6010B Calcium Tot 6020 Boron Tot 6010B Barium Tot 6020 Lead Tot 6020 Antimony Tot 6020 Beryllium Tot 6020 Cobalt Tot 6020 Copper Tot 6020 Iron Tot 6010B Zinc Tot 6020 Lithium Tot 6010B Magnesium Tot 6010B
3100291-21 B	<u>10-2-2023</u>	<u>09:45</u>	Plastic 500mL pH<2 w/HNO3	1	MW-100	g/c	
3100291-21 C	<u>10-2-2023</u>	<u>09:45</u>	Plastic 500mL pH<2 w/H2SO4	1	MW-100	g/c	OOD TOC
3100291-21 D	<u>10-2-2023</u>	<u>09:45</u>	OG 250mL pH<2 w/HCL	1	MW-100	g/c	Mercury Tot 245.7
3100291-21 E	<u>10-2-2023</u>	<u>09:45</u>	OG 250mL pH<2 w/HCL	1	MW-100	g/c	Mercury Tot 245.7

Preservation Check: pH:

Preservation Check: pH:

Preservation Check Performed by: ICED

Field data collected by: Dawn Storkman Date (m/d/yyyy) 10-2-2023 Time (24 hr) 09:45

pH 6.37 Cond (umho/cm) 3.37 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (°C) 21.51 or (°F) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature)	Received by: (Signature)	Date (m/d/yyyy)	Time (24 hr)
<u><i>Dawn Storkman</i></u>	<u><i>Kevin Land</i></u>	<u>10-3-23</u>	<u>1430</u>
<u><i>Kevin Land</i></u>	<u><i>K D</i></u>	<u>10-4-23</u>	<u>1125</u>

# Chain of Custody

Scheduled for: 10/02/2023



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Storckman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Storckman  
PO Box 24  
Henderson, KY 42419

Project: Wilson Groundwater Wells 092-00064

Phone: (270) 844-6000  
PWS ID#: \_\_\_\_\_  
State: KY

PO#: \_\_\_\_\_  
Quoted: \_\_\_\_\_

Please Print Legibly

Collected by (Signature): Dawn Storckman

Compliance Monitoring? Yes \_\_\_ No \_\_\_

\*For composite samples please indicate begin time, end time and temp(°C) at end time below:

Samples Chlorinated? Yes \_\_\_ No \_\_\_

Influent: Start Date \_\_\_\_\_ Start Time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start Time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	*required information* Date Time (24 hr):		Collection Time (24 hr):	Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3100291-21 F	<u>10-2-23</u>	<u>09:45</u>		Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW-100	g/c	Radium 226 (sub)
				Preservation Check: pH: <u>✓</u>				
3100291-21 G	<u>10-2-23</u>	<u>09:45</u>		Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW-100	g/c	Radium 226 (sub)
				Preservation Check: pH: <u>✓</u>				
3100291-21 H	<u>10-2-23</u>	<u>09:45</u>		Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW-100	g/c	Radium 226 (sub)
				Preservation Check: pH: <u>✓</u>				
3100291-21 I	<u>10-2-23</u>	<u>09:45</u>		Plastic 1L pH<2 w/HNO3 (Sub)	1	MW-100	g/c	Radium Total (sub)
				Preservation Check: pH: <u>✓</u>				
3100291-21 J	<u>10-2-23</u>	<u>09:45</u>		AG 250mL pH<2 w/H2SO4	1	MW-100	g/c	TOC
				Preservation Check: pH: <u>✓</u>				
3100291-22 A	<u>10-2-23</u>	<u>09:45</u>		CG 250mL pH<2 w/HCl Field Blank	1	Mercury Field Blank MW-100	g/c	Mercury Tot 245.7 Field Blank

Preservation Check Performed by: KFD

Field data collected by: Dawn Storckman Date (mm/dd/yyyy): 10-2-23 Time (24 hr): 09:45

pH: 6.37 Cond (uMm): 3.37 Res Cl (mg/L): \_\_\_\_\_ Tot Cl (mg/L): \_\_\_\_\_ Free Cl (mg/L): \_\_\_\_\_

Temp (°C): 21.51 or (°F): \_\_\_\_\_ Static Water Level: \_\_\_\_\_ DO (mg/L): \_\_\_\_\_ Turb. (NTU): \_\_\_\_\_

Flow (MGD): \_\_\_\_\_ or (CFS): \_\_\_\_\_ or (gpm): \_\_\_\_\_

Relinquished by (Signature): <u>Dawn Storckman</u>	Received by (Signature): <u>Tom [Signature]</u>	Date (mm/dd/yyyy): <u>10-3-23</u>	Time (24 hr): <u>1430</u>
<u>Tom [Signature]</u>	<u>[Signature]</u>	<u>10-4-23</u>	<u>1125</u>

# Chain of Custody

Scheduled for: 10/02/2023



Client: **Big Rivers Electric Corporation Wilson Station**

Report To:  
**Big Rivers Electric Corporation Wilson Station**  
Dawn Storkman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
**Big Rivers Electric Corporation Wilson Station**

Project: **Wilson Groundwater Wells 092-00084**

Dawn Storkman  
PO Box 24  
Henderson, KY 42419

Phone: (270) 844-6000  
PWS ID#: \_\_\_\_\_  
State: KY

PO#: \_\_\_\_\_  
Contract# \_\_\_\_\_

Please Print Legibly

Collected by (Signature): [Signature]  
required information

Compliance Monitoring? Yes  No

Samples Chlorinated? Yes  No

\*For composite samples please indicate begin time, end time and temp(°C) at end time below.

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	*required information* Date (mm/dd/yyyy) Time (24 hr)		Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3100291-23 A	<u>10-02-23</u>	<u>1230</u>	Plastic 1L	1	MW102	g/c	Alkalinity Bicarbonate Alkalinity Carbonate TDS Sulfate 300.0 Alkalinity Total Conductivity (Lab) Chloride 300.0 Fluoride 300.0 Chromium Tot 6020 Arsenic Tot 6020 Calcium Tot 6010B Cadmium Tot 6020 Boron Tot 6010B Barium Tot 6020 Lead Tot 6020 Ammony Tot 6020 Beryllium Tot 6020 Cobalt Tot 6020 Copper Tot 6020 Iron Tot 6010B Zinc Tot 6020 Lithium Tot 6020 Magnesium Tot 6010B
3100291-23 B	<u>10-02-23</u>	<u>1230</u>	Plastic 500mL pH=2 w/HNO3	1	MW102	g/c	
Preservation Check: pH: <u>[check]</u>							
3100291-23 C	<u>10-02-23</u>	<u>1230</u>	Plastic 500mL pH=2 w/H2SO4	1	MW102	g/c	COD TOC
Preservation Check: pH: <u>[check]</u>							
3100291-23 D	<u>10-01-23</u>	<u>1230</u>	CG 250mL pH=2 w/HCL	1	MW102	g/c	Mercury Tot 245.7
3100291-23 E	<u>10-02-23</u>	<u>1230</u>	CG 250mL pH=2 w/HCL	1	MW102	g/c	Mercury Tot 245.7

Preservation Check Performed by: ICED

Field data collected by: Trevi's Speed Date (mm/dd/yyyy) 10-02-23 Time (24 hr) 1230

pH 7.42 Cond (µmS) 1.16 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (°C) 19.21 or (°F) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) 2.29 Turb. (NTU) 164

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature) [Signature] Received by: (Signature) [Signature] Date (mm/dd/yyyy) 10-4-23 Time (24 hr) 1125

# Chain of Custody

Scheduled for: **10/02/2023**



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Stordeman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Stordeman  
PO Box 24  
Henderson, KY 42419

Project: Wilson Groundwater Wells 092-00804

Phone: (270) 844-6000

PWS ID#:

State: Ky

PO#: \_\_\_\_\_

Quote# \_\_\_\_\_

Please Print Legibly

Collected by (Signature): *T. S. Sneed*

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below:

Samples Chlorinated? Yes  No

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	*required information* Date (mm/dd/yy):	Collection Time (24 hr):	Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3100291-23 F	<u>10-02-23</u>	<u>1230</u>	Plastic 1L pH<2 w/HNO3 Rad 226 (Sub)	1	MW102	g/c	Radium 226 (sub)
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3100291-23 G	<u>10-02-23</u>	<u>1230</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW102	g/c	Radium 228 (sub)
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3100291-23 H	<u>10-02-23</u>	<u>1230</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW102	g/c	Radium 228 (sub)
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3100291-23 I	<u>10-02-23</u>	<u>1230</u>	Plastic 1L pH<2 w/HNO3 (Sub)	1	MW102	g/c	Radium Total (sub)
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3100291-23 J	<u>10-02-23</u>	<u>1230</u>	AG 250mL pH<2 w/H2SO4	1	MW102	g/c	TOC
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3100291-24 A	<u>10-02-23</u>	<u>1230</u>	CG 250mL pH<2 w/HCl Field Blank	1	Mercury Field Blank MW-102	g/c	Mercury Tot 245.7 Field Blank

Preservation Check Performed by: \_\_\_\_\_

Field data collected by: *T. S. Sneed* Date (mm/dd/yy): 10-02-23 Time (24 hr): 1230  
pH: 7.42 Cond (µmS): 1.16 Res Cl (mg/L): \_\_\_\_\_ Tot Cl (mg/L): \_\_\_\_\_ Free Cl (mg/L): \_\_\_\_\_  
Temp (oC): 19.21 or (oF): \_\_\_\_\_ Static Water Level: \_\_\_\_\_ DO (mg/L): 2.29 Turb. (NTU): 16.4  
Flow (MGD): \_\_\_\_\_ or (CFS): \_\_\_\_\_ or (g/min): \_\_\_\_\_

Relinquished by: (Signature) *T. S. Sneed* Received by: (Signature) *[Signature]* Date (mm/dd/yy): 10-4-23 Time (24 hr): 1125

# Chain of Custody

Scheduled for: **10/02/2023**



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Stockman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station

Project: Wilson Groundwater Wells 892-09004

Dawn Stockman  
PO Box 24  
Henderson, KY 42419

Phone: (270) 844-6000  
PWS ID#:

PO#: \_\_\_\_\_

Please Print Legibly

State: ky

Quota# \_\_\_\_\_

Collected by (Signature): Travis Sneed

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below.

Samples Chlorinated? Yes  No

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY	*required information*		Bottle and Preservative	Containers	Sample Description	Composite	Sample Analytes Requested
Workorder #	Date (m/d/yyyy)	Collection Time (24 hr)					
3100291 Sample ID#							
3100291-25 A	<u>10-02-23</u>	<u>0930</u>	Plastic 1L	1	MW104	g/c	Alkalinity Bicarbonate Alkalinity Carbonate TDS Sulfate 300.0 Alkalinity Total Conductivity (Lab) Chloride 300.0 Fluoride 300.0 Chromium Tot 6020 Arsenic Tot 6020 Calcium Tot 6010B Cadmium Tot 6020 Boron Tot 6010B Barium Tot 6020 Lead Tot 6020 Antimony Tot 6020 Beryllium Tot 6020 Cobalt Tot 6020 Copper Tot 6020 Iron Tot 6010B Zinc Tot 6020 Lithium Tot 6020 Magnesium Tot 6010B
3100291-25 B	<u>10-02-23</u>	<u>0930</u>	Plastic 500mL pH<2 w/HNO3	1	MW104	g/c	
3100291-25 C	<u>10-02-23</u>	<u>0930</u>	Plastic 500mL pH<2 w/H2SO4	1	MW104	g/c	COO TOC
3100291-25 D	<u>10-02-23</u>	<u>0930</u>	CG 250mL pH<2 w/HCL	1	MW104	g/c	Mercury Tot 245.7
3100291-25 E	<u>10-02-23</u>	<u>0930</u>	CG 250mL pH<2 w/HCL	1	MW104	g/c	Mercury Tot 245.7

Preservation Check: pH: ✓

Preservation Check: pH: ✓

Preservation Check Performed by: KCS

Field data collected by Travis Sneed Date (m/d/yyyy) 10-02-23 Time (24 hr) 0930

pH 8.55 Cond (uS/cm) 2.05 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC) 18.86 or to F \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) 0.52 Turb. (NTU) 293

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by (Signature): <u>Travis Sneed</u>	Received by (Signature): <u>KCS</u>	Date (m/d/yyyy): <u>10-4-23</u>	Time (24 hr): <u>1125</u>
_____	_____	_____	_____
_____	_____	_____	_____

# Chain of Custody

Scheduled for: 10/02/2023



**Client:** Big Rivers Electric Corporation Wilson Station

**Report To:**  
Big Rivers Electric Corporation Wilson Station  
Dawn Storckman  
PO Box 24  
Henderson, KY 42419

**Invoice To:**  
Big Rivers Electric Corporation Wilson Station

**Project:** Wilson Groundwater Wells 082-00004

Dawn Storckman  
PO Box 24  
Henderson, KY 42419

Phone: (270) 844-6000

PWS ID#:

PO#: \_\_\_\_\_

Please Print Legibly

State: KY

Quote# \_\_\_\_\_

Collected by (Signature): [Signature]

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time, end time and temp(OC) at end time below:

Samples Chlorinated? Yes  No

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	*required information* Date (mm/dd/yy): Collection Time (24 hr)	Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3100291-25 F	<u>10-02-23</u> <u>0930</u>	Plastic 1L pH<2 w/HNO3 Rad 226 (Sub)	1	MW104	g/c	Radium 226 (sub)
		Preservation Check: pH: <u>✓</u>				
3100291-25 G	<u>10-02-23</u> <u>0930</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW104	g/c	Radium 228 (sub)
		Preservation Check: pH: <u>✓</u>				
3100291-25 H	<u>10-02-23</u> <u>0930</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW104	g/c	Radium 228 (sub)
		Preservation Check: pH: <u>✓</u>				
3100291-25 I	<u>10-02-23</u> <u>0930</u>	Plastic 1L pH<2 w/HNO3 (Sub)	1	MW104	g/c	Radium Total (sub)
		Preservation Check: pH: <u>✓</u>				
3100291-25 J	<u>10-02-23</u> <u>0930</u>	AG 250mL pH<2 w/H2SO4	1	MW104	g/c	TOC
		Preservation Check: pH: <u>✓</u>				
3100291-26 A	<u>10-02-23</u> <u>0930</u>	CG 250mL pH<2 w/HCl Field Blank	1	Mercury Field Blank MW-104	g/c	Mercury Tot 245 7 Field Blank

Preservation Check Performed by: [Signature]

Field data collected by: [Signature] Date (mm/dd/yy) 10-02-23 Time (24 hr) 0930  
pH 8.55 Cond (umho) 2.05 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_  
Temp (oC) 18.86 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) 0.52 Turb. (NTU) 293  
Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>[Signature]</u>	Date (mm/dd/yy) <u>10-4-23</u>	Time (24 hr) <u>1125</u>
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# Chain of Custody

Scheduled for: **10/02/2023**



**Client:** Big Rivers Electric Corporation Wilson Station

**Report To:**  
 Big Rivers Electric Corporation Wilson Station  
 Dawn Storckman  
 PO Box 24  
 Henderson, KY 42419

**Invoice To:**  
 Big Rivers Electric Corporation Wilson Station

**Project:** Wilson Groundwater Wells 092-00004

Dawn Storckman  
 PO Box 24  
 Henderson, KY 42419

Phone: (270) 844-5000  
 PWS ID#: \_\_\_\_\_  
 State:   KY  

PO#: \_\_\_\_\_  
 Quote# \_\_\_\_\_

Please Print Legibly

Collected by (Signature): Dave Madley

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below.

Samples Chlorinated? Yes  No

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	*required information* Date (mm/dd/yy) Time (24 hr)	Bottle and Preservative	Containers	Sample Description	Composite	Sample Analytes Requested
3100291-27 A	<u>10/02/23</u> <u>0835</u>	Plastic 1L	1	MW-105R	g/c	Alkalinity Bicarbonate Alkalinity Carbonate TDS Sulfate 300.0 Alkalinity Total Conductivity (Lab) Chloride 300.0 Fluoride 300.0
3100291-27 B	<u>10/02/23</u> <u>0835</u>	Plastic 500mL pH<2 w/HNO3	1	MW-105R	g/c	Chromium Tot 6020 Arsenic Tot 6020 Calcium Tot 6010B Cadmium Tot 6020 Boron Tot 6010B Barium Tot 6020 Lead Tot 6020 Antimony Tot 6020 Beryllium Tot 6020 Cobalt Tot 6020 Copper Tot 6020 Iron Tot 6010B Zinc Tot 6020 Lithium Tot 6020 Magnesium Tot 6010B
		Preservation Check: pH: <input checked="" type="checkbox"/>				
3100291-27 C	<u>10/02/23</u> <u>0835</u>	Plastic 500mL pH<2 w/H2SO4	1	MW-105R	g/c	COD TOC
		Preservation Check: pH: <input checked="" type="checkbox"/>				
3100291-27 D	<u>10/02/23</u> <u>0835</u>	CG 250mL pH<2 w/HCL	1	MW-105R	g/c	Mercury Tot 245.7
3100291-27 E	<u>10/02/23</u> <u>0835</u>	CG 250mL pH<2 w/HCL	1	MW-105R	g/c	Mercury Tot 245.7

Preservation Check Performed by: KED

Field data collected by Dave Madley Date (mm/dd/yy) 10/02/23 Time (24 hr) 0835

pH 6.7 Cond (umho) 1.28 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC) 15.34 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb (NTU) \_\_\_\_\_

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature)	Received by: (Signature)	Date (mm/dd/yy)	Time (24 hr)
<u>Dave Madley</u>	<u>Tina Schuch</u>	<u>10-3-23</u>	<u>1430</u>
<u>Tina Schuch</u>	<u>KED</u>	<u>10-4-23</u>	<u>1125</u>

# Chain of Custody

Scheduled for: 10/02/2023



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Storckman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Storckman  
PO Box 24  
Henderson, KY 42419

Project: Wilson Groundwater Wells 082-00084

Phone: (270) 844-8000  
PWS ID#: \_\_\_\_\_  
State: KY

PO#: \_\_\_\_\_  
Outlet: \_\_\_\_\_

Please Print Legibly

Collected by (Signature): Dave Madley  
required information

Compliance Monitoring? Yes  No

Samples Chlorinated? Yes  No

\*For composite samples please indicate begin time, end time and temp(°C) at end lines below:

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

LAB USE ONLY	*required information*		Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
Workorder #	Date (mm/dd/yy)	Collection Time (24 hr)					
3100291 Sample ID#							
3100291-27 F	<u>10/02/23</u>	<u>0835</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW-105R	g/c	Radium 226 (sub)
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3100291-27 G	<u>10/02/23</u>	<u>0835</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW-105R	g/c	Radium 228 (sub)
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3100291-27 H	<u>10/02/23</u>	<u>0835</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW-105R	g/c	Radium 228 (sub)
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3100291-27 I	<u>10/02/23</u>	<u>0835</u>	Plastic 1L pH<2 w/HNO3 (Sub)	1	MW-105R	g/c	Radium Total (sub)
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3100291-27 J	<u>10/02/23</u>	<u>0835</u>	AG 250mL pH<2 w/H2SO4	1	MW-105R	g/c	TOC
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3100291-28 A	<u>10/02/23</u>	<u>0835</u>	CG 250mL pH<2 w/HCl Field Blank	1	Mercury Field Blank MW-105R	g/c	Mercury Tot 2457 Field Blank

Preservation Check Performed by: ICFD

Field data collected by: <u>Dave Madley</u>	Date (mm/dd/yy): <u>10/02/23</u>	Time (24 hr): <u>0835</u>
pH: <u>6.17</u>	Cond (umho): <u>1.28</u>	Res Cl (mg/L): _____
Temp (°C): <u>13.24</u>	or (°F): _____	Total Cl (mg/L): _____
Flow (MGD): _____	or (CFS): _____	Free Cl (mg/L): _____
	or (g/min): _____	Static Water Level: _____
		DO (mg/L): _____
		Turb (NTU): _____

Relinquished by: (Signature)	Received by: (Signature)	Date (mm/dd/yy)	Time (24 hr)
<u>Dave Madley</u>	<u>Tom Howard</u>	<u>10-3-23</u>	<u>1430</u>
<u>Pam Howard</u>	<u>ICFD</u>	<u>10-4-23</u>	<u>1125</u>



# Chain of Custody

Scheduled for: 10/02/2023



**Client:** Big Rivers Electric Corporation Wilson Station

**Report To:**  
Big Rivers Electric Corporation Wilson Station  
Dawn Stockman  
PO Box 24  
Henderson, KY 42419

**Invoice To:**  
Big Rivers Electric Corporation Wilson Station

**Project:** Wilson Groundwater Wells 092-00004

Dawn Stockman  
PO Box 24  
Henderson, KY 42419

Phone: (270) 844-6000  
PWS ID#:

PO#:

Please Print Legibly

State: KY

Quote#:

Collected by (Signature): [Signature]

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below:

Samples Chlorinated? Yes  No

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY	*required information*		Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
Workorder #	Date (mm/dd/yyyy)	Collection Time (24 hr)					
3100291							
Sample ID#							
3100291-29 A	<u>10-02-23</u>	<u>0735</u>	Plastic 1L	1	MW110	g/c	Alkalinity Bicarbonate Alkalinity Carbonate TDS Sulfate 300.0 Alkalinity Total Conductivity (Lab) Chloride 300.0 Fluoride 300.0 Chromium Tot 6020 Arsenic Tot 6020 Calcium Tot 6010B Cadmium Tot 6020 Boron Tot 6010B Barium Tot 6020 Lead Tot 6020 Antimony Tot 6020 Beryllium Tot 6020 Cobalt Tot 6020 Copper Tot 6020 Iron Tot 6010B Zinc Tot 6020 Lanthanum Tot 6020 Magnesium Tot 6010B
3100291-29 B	<u>10-02-23</u>	<u>0735</u>	Plastic 500mL pH<2 w/HL2SO4	1	MW110	g/c	
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3100291-29 C	<u>10-02-23</u>	<u>0735</u>	Plastic 500mL pH<2 w/HL2SO4	1	MW110	g/c	COD TOC
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3100291-29 D	<u>10-02-23</u>	<u>0735</u>	CG 250mL pH<2 w/HCL	1	MW110	g/c	Mercury Tot 245 7
3100291-29 E	<u>10-02-23</u>	<u>0735</u>	CG 250mL pH<2 w/HCL	1	MW110	g/c	Mercury Tot 245 7

Preservation Check Performed by: ICEO

Field data collected by: Tom's Speed Date (mm/dd/yyyy) 10-02-23 Time (24hr) 0735

pH 6.84 Cond (umho/cm) 443 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC) 17.84 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) 4.2 Turb. (NTU) 2.04

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature)	Received by: (Signature)	Date (mm/dd/yyyy)	Time (24 hr)
<u>[Signature]</u>	<u>[Signature]</u>	<u>10-4-23</u>	<u>1125</u>
_____	_____	_____	_____
_____	_____	_____	_____

# Chain of Custody

Scheduled for: 10/02/2023



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Storchman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Storchman  
PO Box 24  
Henderson, KY 42419

Project: Wilson Groundwater Wells 082-00004

Phone: (270) 844-6000  
PWS ID#: \_\_\_\_\_  
State: Ky

PO#: \_\_\_\_\_  
Quoted: \_\_\_\_\_

Please Print Legibly

Collected by (Signature): Tina Speed

Compliance Monitoring? Yes  No

Samples Chilled? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below.

Influent: Start Date \_\_\_\_\_ Start Time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start Time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	*required information* Date (mm/dd/yyyy) Collection Time (24 hr):	Sample Description	Containers	Composite	Sample Analysis Requested
3100291-29 F	<u>10-02-23 0735</u>	Plastic 1L pH=2 w/ HNO3 Rad 226 (Sub)	1	g/c	Radium 226 (sub)
		Preservation Check: pH: <u>✓</u>			
3100291-29 G	<u>10-02-23 0735</u>	Plastic 1L pH=2 w/ HNO3 Rad 228 (Sub)	1	g/c	Radium 228 (sub)
		Preservation Check: pH: <u>✓</u>			
3100291-29 H	<u>10-02-23 0735</u>	Plastic 1L pH=2 w/ HNO3 Rad 228 (Sub)	1	g/c	Radium 228 (sub)
		Preservation Check: pH: <u>✓</u>			
3100291-29 I	<u>10-02-23 0735</u>	Plastic 1L pH=2 w/ HNO3 (Sub)	1	g/c	Radium Total (sub)
		Preservation Check: pH: <u>✓</u>			
3100291-29 J	<u>10-02-23 0735</u>	AG 250mL pH=2 w/ H2SO4	1	g/c	TOC
		Preservation Check: pH: _____			
3100291-30 A	<u>10-02-23 0735</u>	OG 250mL pH=2 w/ HCl Field Blank	1	g/c	Mercury Tot 245.7 Field Blank

Preservation Check Performed by: ICED

Field data collected by: Tina Speed Date (mm/dd/yyyy) 10-02-23 Time (24 hr) 0735

pH 6.84 Cond (umho/cm) 443 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC) 17.84 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) 4.2 Turb (NTU) 204

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature) <u>Tina Speed</u>	Received by: (Signature) <u>ICED</u>	Date (mm/dd/yyyy) <u>10-04-23</u>	Time (24 hr) <u>1125</u>
_____	_____	_____	_____
_____	_____	_____	_____

# Chain of Custody

Scheduled for: 10/02/2023



**Client:** Big Rivers Electric Corporation Wilson Station

**Report To:**  
Big Rivers Electric Corporation Wilson Station  
Dawn Stockman  
PO Box 24  
Henderson, KY 42419

**Invoice To:**  
Big Rivers Electric Corporation Wilson Station  
Dawn Stockman  
PO Box 24  
Henderson, KY 42419

**Project:** Wilson Groundwater Wells 092-00004

Phone: (270) 844-6000  
PWS ID#: KY  
State: KY

PO#: \_\_\_\_\_  
Quoted: \_\_\_\_\_

Please Print Legibly

Collected by (Signature) Dawn Stockman

Compliance Monitoring? Yes \_\_\_ No \_\_\_

Samples Chlorinated? Yes \_\_\_ No \_\_\_

\*For composite samples please indicate begin time, end time and temp (oC) at end time below:

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY	*required information*		Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
Workorder #	Date	Collection					
3100291	mm/dd/yyyy	Time (24 hr)					
Sample ID#							
3100291-31 A	<u>10-2-23</u>	<u>12:25</u>	Plastic 1L	1	MW-111	g/c	Alkalinity Bicarbonate Alkalinity Carbonate TDS Sulfate 300.0 Alkalinity Total Conductivity (Lab) Chloride 300.0 Fluoride 300.0 Chromium Tot 6020 Arsenic Tot 6020 Calcium Tot 6010B Cadmium Tot 6020 Boron Tot 6010B Barium Tot 6020 Lead Tot 6020 Antimony Tot 6020 Beryllium Tot 6020 Cobalt Tot 6020 Copper Tot 6020 Iron Tot 6010B Zinc Tot 6020 Lithium Tot 6020 Magnesium Tot 6010B
3100291-31 B	<u>10-2-23</u>	<u>12:25</u>	Plastic 500mL pH<2 w/H2SO4	1	MW-111	g/c	
			Preservation Check: pH: <u>✓</u>				
3100291-31 C	<u>10-2-23</u>	<u>12:25</u>	Plastic 500mL pH<2 w/H2SO4	1	MW-111	g/c	CDD TOC
			Preservation Check: pH: <u>✓</u>				
3100291-31 D	<u>10-2-23</u>	<u>12:25</u>	CG 250mL pH<2 w/HCL	1	MW-111	g/c	Mercury Tot 245.7
3100291-31 E	<u>10-2-23</u>	<u>12:25</u>	CG 250mL pH<2 w/HCL	1	MW-111	g/c	Mercury Tot 245.7

Preservation Check Performed by: ICEO

Field data collected by: Dawn Stockman Date (mm/dd/yyyy) 10-2-23 Time (24 hr) 12:25

pH 6.24 Cond (umho) 342 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC) 21.99 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (gpm) \_\_\_\_\_

Requested by: (Signature)	Received by: (Signature)	Date (mm/dd/yyyy)	Time (24 hr)
<u>Dawn Stockman</u>	<u>[Signature]</u>	<u>10-3-23</u>	<u>1430</u>
<u>[Signature]</u>	<u>[Signature]</u>	<u>10-4-23</u>	<u>1125</u>

# Chain of Custody

Scheduled for: **10/02/2023**



**Client:** Big Rivers Electric Corporation Wilson Station

**Report To:**  
Big Rivers Electric Corporation Wilson Station  
Dawn Stockman  
PO Box 24  
Henderson, KY 42419

**Invoice To:**  
Big Rivers Electric Corporation Wilson Station

**Project:** Wilson Groundwater Wells 092-00004

Dawn Stockman  
PO Box 24  
Henderson, KY 42419

Phone: (270) 844-6000  
PWSIDF:  
State: KY

PO#: \_\_\_\_\_  
Quote# \_\_\_\_\_

Please Print Legibly

Collected by (Signature) Dawn Stockman

Compliance Monitoring? Yes \_\_\_ No \_\_\_

Samples Chlorinated? Yes \_\_\_ No \_\_\_

\*For composite samples please indicate begin time, end time and temp(°C) at end time below.

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	*required information* Date (mm/dd/yyyy):	Collection Time (24 hr):	Bottle and Preservative	Containers	Sample Description	Composite	Sample Analyte Requested
3100291-31 F	<u>10-2-23</u>	<u>12:25</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW-111	g/c	Radium 228 (sub)
			Preservation Check: pH: _____				
3100291-31 G	<u>10-2-23</u>	<u>12:25</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW-111	g/c	Radium 228 (sub)
			Preservation Check: pH: _____				
3100291-31 H	<u>10-2-23</u>	<u>12:25</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW-111	g/c	Radium 228 (sub)
			Preservation Check: pH: _____				
3100291-31 I	<u>10-2-23</u>	<u>12:25</u>	Plastic 1L pH<2 w/HNO3 (Sub)	1	MW-111	g/c	Radium Total (sub)
			Preservation Check: pH: _____				
3100291-31 J	<u>10-2-23</u>	<u>12:25</u>	AG 250mL pH<2 w/12504	1	MW-111	g/c	TOC
			Preservation Check: pH: _____				
3100291-32 A	<u>10-2-23</u>	<u>12:25</u>	CG 250mL pH<2 w/HCl Field Blank	1	Mercury Field Blank MW-111	g/c	Mercury Tot 245.7 Field Blank

Preservation Check Performed by: ICED

Field data collected by Dawn Stockman Date (mm/dd/yyyy) 10-2-23 Time (24 hr) 12:25

pH 6.24 Cond (umho/cm) 3.42 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (°C) 21.99 or (°F) \_\_\_\_\_ Saline Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb (NTU) \_\_\_\_\_

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Reinspected by (Signature) <u>Dawn Stockman</u>	Received by (Signature) <u>[Signature]</u>	Date (mm/dd/yyyy) <u>10-3-23</u>	Time (24 hr) <u>1430</u>
		<u>10-4-23</u>	<u>1125</u>

# Chain of Custody

Scheduled for: **10/02/2023**



**Client:** Big Rivers Electric Corporation Wilson Station

**Report To:**  
Big Rivers Electric Corporation Wilson Station  
Dawn Strickman  
PO Box 24  
Henderson, KY 42419

**Invoice To:**  
Big Rivers Electric Corporation Wilson Station  
Dawn Strickman  
PO Box 24  
Henderson KY 42419

**Project:** Wilson Groundwater Wells 092-00004

**Phone:** (270) 844-8000  
**PWS ID#:**  
**State:** KY

**PO#:** \_\_\_\_\_  
**Quote#:** \_\_\_\_\_

Please Print Legibly

Collected by (Signature) Dawn Medley  
Required information

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below.

Samples Chlorinated? Yes  No

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY	*required information*		Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
Workorder #	Date (m/m/d/yyyy)	Collection Time (24 hr)					
3100291							
Sample ID#							
3100291-33 A	10/02/23	13:00	Plastic 1L	1	MW-112	g/c	Alkalinity Bicarbonate Alkalinity Carbonate TDS Sulfate 300.0 Alkalinity Total Conductivity (Lab) Chloride 300.0 Fluoride 300.0 Chromium Tot 6020 Arsenic Tot 6020 Calcium Tot 6010B Cadmium Tot 6020 Boron Tot 6010B Barium Tot 6020 Lead Tot 6020 Antimony Tot 6020 Beryllium Tot 6020 Cobalt Tot 6020 Copper Tot 6020 Iron Tot 6010B Zinc Tot 6020 Lithium Tot 6020 Magnesium Tot 6010B
3100291-33 B	10/02/23	13:04	Plastic 500ml pH<2 w/HNO3	1	MW-112	g/c	Alkalinity Bicarbonate Alkalinity Carbonate TDS Sulfate 300.0 Alkalinity Total Conductivity (Lab) Chloride 300.0 Fluoride 300.0 Chromium Tot 6020 Arsenic Tot 6020 Calcium Tot 6010B Cadmium Tot 6020 Boron Tot 6010B Barium Tot 6020 Lead Tot 6020 Antimony Tot 6020 Beryllium Tot 6020 Cobalt Tot 6020 Copper Tot 6020 Iron Tot 6010B Zinc Tot 6020 Lithium Tot 6020 Magnesium Tot 6010B
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3100291-33 C	10/02/23	13:00	Plastic 500ml pH<2 w/H2SO4	1	MW-112	g/c	COD TOC
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3100291-33 D	10/02/23	13:04	CG 250mL pH<2 w/HCL	1	MW-112	g/c	Mercury Tot 245.7
3100291-33 E	10/02/23	13:00	CG 250mL pH<2 w/HCL	1	MW-112	g/c	Mercury Tot 245.7

Preservation Check Performed by: ICED

Field data collected by: Dawn Medley Date (m/m/d/yyyy) \_\_\_\_\_ Time (24 hr) \_\_\_\_\_

pH 6.28 Cond (umho/cm) 1.54 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC) 19.1 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature)	Received by: (Signature)	Date (m/m/d/yyyy)	Time (24 hr)
<u>Dawn Medley</u>	<u>[Signature]</u>	<u>10-3-23</u>	<u>1430</u>
<u>[Signature]</u>	<u>[Signature]</u>	<u>10-4-23</u>	<u>1125</u>

# Chain of Custody

**Scheduled for: 10/02/2023**



**Client:** Big Rivers Electric Corporation Wilson Station

**Report To:**  
Big Rivers Electric Corporation Wilson Station  
Dam Storchman  
PO Box 24  
Henderson, KY 42419

**Invoice To:**  
Big Rivers Electric Corporation Wilson Station

**Project:** Wilson Groundwater Wells 092-00004

Dawn Storchman  
PO Box 24  
Henderson, KY 42419

Phone: (270) 844-8000

PO#: \_\_\_\_\_

PWS ID#: \_\_\_\_\_

Quote# \_\_\_\_\_

State: \_\_\_\_\_ KY

Please Print Legibly

Collected by (Signature): Dan Madley

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below:

Samples Chilled? Yes  No

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	*required information* Date (mm/dd/yy) Collection Time (24 hr)	Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3100291-33 F	10/02/23 1300	Plastic 1L pH<2 w/HNO3 Rad 226 (Sub)	1	MW-112	g/c	Radium 226 (sub)
		Preservation Check: pH: <u>    </u>				
3100291-33 G	10/02/23 1300	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW-112	g/c	Radium 228 (sub)
		Preservation Check: pH: <u>    </u>				
3100291-33 H	10/04/23 1300	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW-112	g/c	Radium 228 (sub)
		Preservation Check: pH: <u>    </u>				
3100291-33 I	10/02/23 1300	Plastic 1L pH<2 w/HNO3 (Sub)	1	MW-112	g/c	Radium Total (sub)
		Preservation Check: pH: <u>    </u>				
3100291-33 J	10/02/23 1300	AG 250mL pH<2 w/H2SO4	1	MW-112	g/c	TOC
		Preservation Check: pH: <u>    </u>				
3100291-34 A	10/02/23 1300	O3 250mL pH<2 w/HCl Field Blank	1	Mercury Field Blank MW-112	g/c	Mercury Tot 245.7 Field Blank

Preservation Check Performed by: KED

Field data collected by: \_\_\_\_\_ Date (mm/dd/yy) \_\_\_\_\_ Time (24 hr) \_\_\_\_\_

pH 6.28 Cond (uS/cm) 150 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC) 13.19 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature)	Received by: (Signature)	Date (mm/dd/yy)	Time (24 hr)
<u>Dan Madley</u>	<u>Tammy</u>	<u>10-3-23</u>	<u>1730</u>
<u>Tammy</u>	<u>KED</u>	<u>10-4-23</u>	<u>1125</u>



# Chain of Custody

Scheduled for: **10/02/2023**



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Stockman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station

Project: Wilson Groundwater Wells #92-00004

Dawn Stockman  
PO Box 24  
Henderson, KY 42419

Phone: (270) 844-6000  
PWS ID#: \_\_\_\_\_  
State: KY

PO#: \_\_\_\_\_  
Quote#: \_\_\_\_\_

Please Print Legibly

Collected by (Signature): Dawn Stockman

Compliance Monitoring? Yes \_\_\_ No \_\_\_

\*For composite samples please indicate begin time, end time and temp (oC) at end time below:

Samples Chlorinated? Yes \_\_\_ No \_\_\_

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # 3100291 Sample ID#	*required information* Date (mm/dd/yy): 10-2-23	Collection Time (24 hr): 08:30	Bottle and Preservative	Compos	Sample Description	Composite	Sample Analysis Requested
3100291-35 A	10-2-23	08:30	Plastic 1L	1	MW-113	g/c	Alkalinity Bicarbonate Alkalinity Carbonate TDS Sulfate 300.0 Alkalinity Total Conductivity (Lab) Chloride 300.0 Fluoride 300.0 Chromium Tot 6020 Arsenic Tot 6020 Calcium Tot 60106 Cadmium Tot 6020 Boron Tot 60106 Barium Tot 6020 Lead Tot 6020 Antimony Tot 6020 Beryllium Tot 6020 Cobalt Tot 6020 Copper Tot 6020 Iron Tot 60106 Zinc Tot 6020 Lithium Tot 6020 Magnesium Tot 60106
3100291-35 B	10-2-23	08:30	Plastic 500ml pH<2 w/HNO3	1	MW-113	g/c	
3100291-35 C	10-2-23	08:30	Plastic 500ml pH<2 w/H2SO4	1	MW-113	g/c	COD TOC
3100291-35 D	10-2-23	08:30	CG 250ml pH<2 w/HCL	1	MW-113	g/c	Mercury Tot 245.7
3100291-35 E	10-2-23	08:30	CG 250ml pH<2 w/HCL	1	MW-113	g/c	Mercury Tot 245.7

Preservation Check Performed by: ICED

Field data collected by Dawn Stockman Date (mm/dd/yy) 10-2-23 Time (24 hr) 08:30

pH 6.32 Cond (umho/cm) 2.10 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC) 18.94 or (oF) \_\_\_\_\_ Static Water Level: \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by (Signature): <u>Dawn Stockman</u>	Received by (Signature): <u>Tim Small</u>	Date (mm/dd/yy): <u>10-3-23</u>	Time (24 hr): <u>1730</u>
		<u>10-4-23</u>	<u>1125</u>

# Chain of Custody

Scheduled for: 10/02/2023



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Stockman  
PO Box 24  
Henderson, KY 42418

Invoice To:  
Big Rivers Electric Corporation Wilson Station

Project: Wilson Groundwater Wells 092-00004

Drawn Stockman  
PO Box 24  
Henderson, KY 42418

Phone: (270) 844-8000

PWS ID#

State: KY

PO# \_\_\_\_\_

Quote# \_\_\_\_\_

Please Print Legibly

Collected by (Signature): [Signature]

Compliance Monitoring? Yes \_\_\_ No \_\_\_

\*For composite samples please indicate begin time, end time and temp (oC) at end time below:

Samples Chlorinated? Yes \_\_\_ No \_\_\_

Influent: Start Date \_\_\_\_\_ Start Time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start Time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	*required information* Date (mm/dd/yy): Time (24 hr):	Collection	Container	Sample Description	Composite	Sample Analysis Requested
3100291-35 F	<u>10-2-23</u>	<u>08:30</u>	Plastic 1L pH<2 w/HNO3 Rad 226 (Sub)	1	MW-113	g/c Radium 226 (sub)
			Preservation Check: pH: <u>✓</u>			
3100291-35 G	<u>10-2-23</u>	<u>08:30</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW-113	g/c Radium 228 (sub)
			Preservation Check: pH: <u>✓</u>			
3100291-35 H	<u>10-2-23</u>	<u>08:30</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW-113	g/c Radium 228 (sub)
			Preservation Check: pH: <u>✓</u>			
3100291-35 I	<u>10-2-23</u>	<u>08:30</u>	Plastic 1L pH<2 w/HNO3 (Sub)	1	MW-113	g/c Radium Total (sub)
			Preservation Check: pH: <u>✓</u>			
3100291-35 J	<u>10-2-23</u>	<u>08:30</u>	AG 250mL pH<2 w/H2SO4	1	MW-113	g/c TOC
			Preservation Check: pH: <u>✓</u>			
3100291-36 A	<u>10-2-23</u>	<u>08:30</u>	CG 250mL pH<2 w/HCl Field Blank	1	Mercury Field Blank, MW-113	g/c Mercury Tot 245.7 Field Blank

Preservation Check Performed by: ICED

Field data collected by: Dawn Stockman Date (mm/dd/yy): 10-2-23 Time (24 hr): 08:30

pH: 6.32 Cond (umho): 2.10 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC): 13.94 or (oF) \_\_\_\_\_ Sat'd Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by (Signature): [Signature]

Received by (Signature): [Signature]

Date (mm/dd/yy): 10-3-23 Time (24 hr): 1430

10-4-23 1125



# Chain of Custody

Scheduled for: 10/02/2023



Client: **Big Rivers Electric Corporation Wilson Station**

Report To:  
**Big Rivers Electric Corporation Wilson Station**  
**Dawn Storckman**  
**PO Box 24**  
**Henderson, KY 42419**

Invoice To:  
**Big Rivers Electric Corporation Wilson Station**  
**Dawn Storckman**  
**PO Box 24**  
**Henderson, KY 42419**

Project: **Wilson Groundwater Wells 092-00084**

Phone: **(270) 844-6000**

PWS ID#:

State: ky

PO#: \_\_\_\_\_

Quote# \_\_\_\_\_

Please Print Legibly

Collected by (Signature): *[Signature]*

Compliance Monitoring? Yes  No

Samples Chlorinated? Yes  No

\*For composite samples please indicate begin time, end time and temp(°C) at end time below:

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

LAB USE ONLY	Required Information*		Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
Workorder # 3100291 Sample ID#	Date (mm/dd/yy):	Collection Time (24 hr):					
3100291-37 A	<u>10-02-23</u>	<u>1045</u>	Plastic 1L	1	MW-114	g/c	Alkalinity Bicarbonate Alkalinity Carbonate TDS Sulfate 300.0 Alkalinity Total Conductivity (Lab) Chloride 300.0 Fluoride 300.0 Chromium Tot 6020 Arsenic Tot 6020 Calcium Tot 6010B Calcium Tot 6020 Boron Tot 6010B Barium Tot 6020 Lead Tot 6020 Antimony Tot 6020 Beryllium Tot 6020 Cobalt Tot 6020 Copper Tot 6020 Iron Tot 6010B Zinc Tot 6020 Lithium Tot 6020 Magnesium Tot 6010B
3100291-37 B	<u>10-02-23</u>	<u>1045</u>	Plastic 500mL pH<2 w/HClO3	1	MW-114	g/c	
			Preservation Check: pH: <u>    </u>				
3100291-37 C	<u>10-02-23</u>	<u>1045</u>	Plastic 500mL pH<2 w/H2SO4	1	MW-114	g/c	COD TOC
			Preservation Check: pH: <u>    </u>				
3100291-37 D	<u>10-02-23</u>	<u>1045</u>	CG 250mL pH<2 w/HCl	1	MW-114	g/c	Mercury Tot 245.7
3100291-37 E	<u>10-02-23</u>	<u>1045</u>	CG 250mL pH<2 w/HCl	1	MW-114	g/c	Mercury Tot 245.7

Preservation Check Performed by ICED

Field data collected by: Tina S. Saeed Date (mm/dd/yy) 10-02-23 Time (24 hr) 1045

pH 5.55 Cond (µmS) 979 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (°C) 21.13 or (°F) \_\_\_\_\_ Stage Water Level \_\_\_\_\_ DO (mg/L) 0.41 Turb (NTU) 9.2

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature) <u><i>[Signature]</i></u>	Received by: (Signature) <u><i>[Signature]</i></u>	Date (mm/dd/yy) <u>10-4-23</u>	Time (24 hr) <u>1125</u>
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# Chain of Custody

Scheduled for: 10/02/2023



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Stockman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Stockman  
PO Box 24  
Henderson, KY 42419

Project: Wilson Groundwater Wells 092-00004

Phone: (270) 644-6000  
PWS ID#: \_\_\_\_\_  
State: Ky

PO#: \_\_\_\_\_  
Quote#: \_\_\_\_\_

Please Print Legibly

Collected by (Signature): [Signature]  
\*required information\*

Compliance Monitoring? Yes  No

Samples Chlorinated? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below:

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	*required information* Date (mm/dd/yy) Collection Time (24 hr)		Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3100291-37 F	<u>10-02-23</u>	<u>1045</u>	Plastic 1L pH<2 w/HNO3 Rad 226 (Sub)	1	MW-114	g/c	Radium 226 (sub)
			Preservation Check: pH: <u>✓</u>				
3100291-37 G	<u>10-02-23</u>	<u>1045</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW-114	g/c	Radium 228 (sub)
			Preservation Check: pH: <u>✓</u>				
3100291-37 H	<u>10-02-23</u>	<u>1045</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	MW-114	g/c	Radium 228 (sub)
			Preservation Check: pH: <u>✓</u>				
3100291-37 I	<u>10-02-23</u>	<u>1045</u>	Plastic 1L pH<2 w/HNO3 (Sub)	1	MW-114	g/c	Radium Total (sub)
			Preservation Check: pH: <u>✓</u>				
3100291-37 J	<u>10-02-23</u>	<u>1045</u>	AG 250mL pH<2 w/H2SO4	1	MW-114	g/c	TOC
			Preservation Check: pH: <u>✓</u>				
3100291-38 A	<u>10-02-23</u>	<u>1045</u>	CG 250mL pH<2 w/HCl Field Blank	1	Mercury Field Blank MW-114	g/c	Mercury Tot 245.7 Field Blank

Preservation Check Performed by: ICED

Field data collected by: Tavis Sneed Date (mm/dd/yy) 10-02-23 Time (24 hr) 1045

pH 5.55 Cond (umho/cm) 205 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC) 21.13 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) 0.41 Turb. (NTU) 9.2

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (gpm) \_\_\_\_\_

Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>[Signature]</u>	Date (mm/dd/yy) <u>10-4-23</u>	Time (24 hr) <u>1125</u>
_____	_____	_____	_____
_____	_____	_____	_____

# Chain of Custody

Scheduled for: **10/02/2023**



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Stonchman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station

Project: Wilson Groundwater Wells 092-00004

Carrie Storckman  
PO Box 24  
Henderson, KY 42419

Phone: (270) 344-6000  
PWS ID#: \_\_\_\_\_  
State: Ky

PO#: \_\_\_\_\_  
County: \_\_\_\_\_

Please Print Legibly

Collected by (Signature): [Signature]

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time, end time and temp(°C) at end time below

Samples Chlorinated? Yes  No

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (°C) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	*required information* Date (mm/dd/yyyy):	Collection Time (24 hr):	Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3100291-39 A	10-02-23	0752	Plastic 1L	1	Well Duplicate 1	g/c	Alkalinity Bicarbonate Alkalinity Carbonate TDS Sulfate 300.0 Alkalinity Total Conductivity (Lab) Chloride 300.0 Fluoride 300.0 Chromium Tot 6020 Arsenic Tot 6020 Calcium Tot 6010B Cadmium Tot 6020 Boron Tot 6010B Barium Tot 6020 Lead Tot 6020 Antimony Tot 6020 Beryllium Tot 6020 Cobalt Tot 6020 Copper Tot 6020 Iron Tot 6010B Zinc Tot 6020 Lithium Tot 6020 Magnesium Tot 6010B
3100291-39 B	10-02-23	0752	Plastic 500mL pH<2 w/ HNO3	1	Well Duplicate 1	g/c	
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3100291-39 C	10-02-23	0752	Plastic 500mL pH<2 w/ H2SO4	1	Well Duplicate 1	g/c	COD TOC
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3100291-39 D	10-02-23	0752	CG 250mL pH<2 w/HCL	1	Well Duplicate 1	g/c	Mercury Tot 245.7
3100291-39 E	10-02-23	0752	CG 250mL pH<2 w/HCL	1	Well Duplicate 1	g/c	Mercury Tot 245.7

Preservation Check Performed by: ICED

Field data collected by Tami Sneed Date (mm/dd/yyyy) 10-02-23 Time (24 hr) 0752  
pH 6.84 Cond (µmho) 0.443 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_  
Temp (°C) 17.84 or (°F) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) 4.2 Turb. (NTU) 204  
Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>[Signature]</u>	Date (mm/dd/yyyy) <u>10-4-23</u>	Time (24 hr) <u>1125</u>
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# Chain of Custody

Scheduled for: 10/02/2023



Client: **Big Rivers Electric Corporation Wilson Station**

Report To:  
**Big Rivers Electric Corporation Wilson Station**  
Dawn Storchman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
**Big Rivers Electric Corporation Wilson Station**  
Dawn Storchman  
PO Box 24  
Henderson, KY 42419

Project: **Wilson Groundwater Wells D92-0008d**

Phone: (270) 844-5000  
PWS ID#: \_\_\_\_\_  
State: Ky

PO#: \_\_\_\_\_  
Quoted: \_\_\_\_\_

Please Print Legibly

Collected by (Signature): [Signature]  
\*required information\*

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time, and time and temp (oC) at end time below:

Samples Chlorinated? Yes  No

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY	*required information*		Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
Workorder #	Date (mm/dd/yyyy)	Collection Time (24 hr)					
3100291							
Sample ID#							
3100291-39 F	<u>10-02-23</u>	<u>0752</u>	Plastic 1L pH<2 w/HNO3 Rad 226 (Sub)	1	Well Duplicate 1	g/c	Radium 226 (sub)
			Preservation Check: pH: <u>✓</u>				
3100291-39 G	<u>10-02-23</u>	<u>0752</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	Well Duplicate 1	g/c	Radium 228 (sub)
			Preservation Check: pH: <u>✓</u>				
3100291-39 H	<u>10-02-23</u>	<u>0752</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	Well Duplicate 1	g/c	Radium 228 (sub)
			Preservation Check: pH: <u>✓</u>				
3100291-39 I	<u>10-02-23</u>	<u>0752</u>	Plastic 1L pH<2 w/HNO3 (Sub)	1	Well Duplicate 1	g/c	Radium Total (sub)
			Preservation Check: pH: <u>✓</u>				
3100291-39 J	<u>10-02-23</u>	<u>0752</u>	AG 250mL pH<2 w/H2SO4	1	Well Duplicate 1	g/c	TOC
			Preservation Check: pH: <u>✓</u>				
3100291-40 A	<u>10-02-23</u>	<u>0752</u>	CG 250mL pH<2 w/HCl Field Blank	1	Mercury Field Blank Well Dup: 1	g/c	Mercury Tot 245.7 Field Blank

Preservation Check Performed by: [Signature]

Field data collected by: Tina's Speed Date (mm/dd/yyyy) 10-02-23 Time (24 hr) 0752  
pH 6.84 Cond (µmho/cm) 0.443 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_  
Temp (oC) 17.84 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) 4.2 Turb. (NTU) 204  
Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>[Signature]</u>	Date (mm/dd/yyyy) <u>10-02-23</u>	Time (24 hr) <u>1125</u>
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# Chain of Custody

Scheduled for: 10/02/2023



**Client:** Big Rivers Electric Corporation Wilson Station

**Report To:**  
Big Rivers Electric Corporation Wilson Station  
Dawn Storckman  
PO Box 24  
Henderson, KY 42419

**Invoice To:**  
Big Rivers Electric Corporation Wilson Station

**Project:** Wilson Groundwater Wells 092-00004

**Dawn Storckman**  
PO Box 24  
Henderson, KY 42419

Phone: (270) 844-6000  
PWS ID#: \_\_\_\_\_  
State: KY

PO#: \_\_\_\_\_  
Quote#: \_\_\_\_\_

Please Print Legibly

Collected by (Signature): Dawn M. Kelly

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below.

Samples Chlorinated? Yes  No

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # 3100291 Sample ID#	*required information* Date (mm/dd/yy): <u>10/02/23</u>	Collection Time (24 hr): <u>1555</u>	Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3100291-41 A	<u>10/02/23</u>	<u>1555</u>	Plastic 1L	1	Well Duplicate 2	g/c	Alkalinity Bicarbonate Alkalinity Carbonate TDS Sulfate 300.0 Alkalinity Total Conductivity (Lab) Chloride 300.0 Fluoride 300.0 Chromium Tot 6020 Arsenic Tot 6020 Calcium Tot 6010B Cadmium Tot 6020 Boron Tot 6010B Barium Tot 6020 Lead Tot 6020 Antimony Tot 6020 Beryllium Tot 6020 Cobalt Tot 6020 Copper Tot 6020 Iron Tot 6010B Zinc Tot 6020 Lithium Tot 6020 Magnesium Tot 6010B
3100291-41 B	<u>10/02/23</u>	<u>1555</u>	Plastic 500ml, pH<2 w/HNO3	1	Well Duplicate 2	g/c	
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3100291-41 C	<u>10/02/23</u>	<u>1555</u>	Plastic 500mL pH<2 w/H2SO4	1	Well Duplicate 2	g/c	COD TOC
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3100291-41 D	<u>10/02/23</u>	<u>1555</u>	CG 250mL pH<2 w/HCL	1	Well Duplicate 2	g/c	Mercury Tot 245.7
3100291-41 E	<u>10/02/23</u>	<u>1555</u>	CG 250mL pH<2 w/HCL	1	Well Duplicate 2	g/c	Mercury Tot 245.7

Preservation Check Performed by: KED

Field data collected by: Dawn M Kelly Date (mm/dd/yy) \_\_\_\_\_ Time (24 hr) \_\_\_\_\_  
pH 6.24 Cond (umho) 3.90 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_  
Temp (oC) 23.35 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_  
Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature) <u>Dawn M Kelly</u>	Received by: (Signature) <u>[Signature]</u>	Date (mm/dd/yy) <u>10-3-2023</u>	Time (24 hr) <u>14:30</u>
<u>[Signature]</u>	<u>[Signature]</u>	<u>10-4-23</u>	<u>11:25</u>

# Chain of Custody

Scheduled for: 10/02/2023



Client: **Big Rivers Electric Corporation Wilson Station**

Report To:  
**Big Rivers Electric Corporation Wilson Station**  
Dawn Stockman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
**Big Rivers Electric Corporation Wilson Station**

Project: **Wilson Groundwater Wells 092-00004**

Dawn Stockman  
PO Box 24  
Henderson, KY 42419

Phone: (270) 844-6000  
PWS ID#: \_\_\_\_\_  
State: KY

PO#: \_\_\_\_\_  
Quote#: \_\_\_\_\_

Please Print Legibly

Collected by (Signature): Dawn Melby

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin date, end time and temp (C) at end time below:

Samples Chlorinated? Yes  No

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY	*required information*		Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
Workorder #	Date (mm/dd/yy)	Collection Time (24 hr)					
3100291							
Sample ID#							
3100291-41 F	<u>10/02/23</u>	<u>1555</u>	Plastic 1L pH<2 w/HNO3 Rad 226 (Sub)	1	Well Duplicate 2	g/c	Radium 226 (sub)
			Preservation Check: pH: <u>✓</u>				
3100291-41 G	<u>10/02/23</u>	<u>1555</u>	Plastic 1L pH<2 w/HNO3 Rad 226 (Sub)	1	Well Duplicate 2	g/c	Radium 226 (sub)
			Preservation Check: pH: <u>✓</u>				
3100291-41 H	<u>10/02/23</u>	<u>1557</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	Well Duplicate 2	g/c	Radium 228 (sub)
			Preservation Check: pH: <u>✓</u>				
3100291-41 I	<u>10/02/23</u>	<u>1556</u>	Plastic 1L pH<2 w/HNO3 (Sub)	1	Well Duplicate 2	g/c	Radium Total (sub)
			Preservation Check: pH: <u>✓</u>				
3100291-41 J	<u>10/02/23</u>	<u>1555</u>	AG 250mL pH<2 w/H2SO4	1	Well Duplicate 2	g/c	TOC
			Preservation Check: pH: <u>✓</u>				
3100291-42 A	<u>10/02/23</u>	<u>1555</u>	CG 250mL pH<2 w/HCl Field Blank	1	Mercury Field Blank Well Dup-2	g/c	Mercury Tot 245.7 Field Blank

Preservation Check Performed by: KCO

Field data collected by: Dawn Melby Date (mm/dd/yy) \_\_\_\_\_ Time (24 hr) \_\_\_\_\_  
pH 6.24 Cond (umho/cm) 3.50 Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_  
Temp (oC) 23.32 or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_  
Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature)	Received by: (Signature)	Date (mm/dd/yy)	Time (24 hr)
<u>Dawn Melby</u>	<u>Tom Hand</u>	<u>10-3-23</u>	<u>1430</u>
<u>Tom Hand</u>	<u>K D</u>	<u>10-4-23</u>	<u>1125</u>



# Chain of Custody

Scheduled for: 10/02/2023



Client: Big Rivers Electric Corporation Wilson Station

Report To:  
Big Rivers Electric Corporation Wilson Station  
Dawn Stordiman  
PO Box 24  
Henderson, KY 42419

Invoice To:  
Big Rivers Electric Corporation Wilson Station

Project: Wilson Groundwater Wells 092-00004

Dawn Stordiman  
PO Box 24  
Henderson, KY 42419

Phone: (270) 844-6000  
PWS ID#: \_\_\_\_\_  
State: Ky

PO#: \_\_\_\_\_  
Order#: \_\_\_\_\_

Please Print Legibly

Collected by (Signature): [Signature]

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below.

Samples Chlorinated? Yes  No

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY	*required information*		Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
Workorder #	Date (mm/dd/yyyy)	Collection Time (24 hr)					
3100291	<u>10-3-23</u>						
Sample ID#	<u>10-3-23</u>						
3100291-43 A	<u>10-3-23</u>	<u>10:20</u>	Plastic 1L	1	Field Blank	g/c	Alkalinity Bicarbonate Alkalinity Carbonate TDS Sulfate 300.0 Alkalinity Total Conductivity (Lab) Chloride 300.0 Fluoride 300.0 Chromium Tot 6020 Arsenic Tot 6020 Calcium Tot 6010B Cadmium Tot 6020 Boron Tot 6010B Barium Tot 6020 Lead Tot 6020 Antimony Tot 6020 Beryllium Tot 6020 Cobalt Tot 6020 Copper Tot 6020 Iron Tot 6010B Zinc Tot 6020 Lithium Tot 6020 Magnesium Tot 6010B
3100291-43 B	<u>10-3-23</u>	<u>11:20</u>	Plastic 500mL pH<2 w/HNO3	1	Field Blank	g/c	Alkalinity Bicarbonate Alkalinity Carbonate TDS Sulfate 300.0 Alkalinity Total Conductivity (Lab) Chloride 300.0 Fluoride 300.0 Chromium Tot 6020 Arsenic Tot 6020 Calcium Tot 6010B Cadmium Tot 6020 Boron Tot 6010B Barium Tot 6020 Lead Tot 6020 Antimony Tot 6020 Beryllium Tot 6020 Cobalt Tot 6020 Copper Tot 6020 Iron Tot 6010B Zinc Tot 6020 Lithium Tot 6020 Magnesium Tot 6010B
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3100291-43 C	<u>10-3-23</u>	<u>11:30</u>	Plastic 500mL pH<2 w/H2SO4	1	Field Blank	g/c	COO TOC
			Preservation Check: pH: <input checked="" type="checkbox"/>				
3100291-43 D	<u>10-3-23</u>	<u>11:20</u>	CG 250mL pH<2 w/HCL	1	Field Blank	g/c	Mercury Tot 245.7
3100291-43 E	<u>10-3-23</u>	<u>11:20</u>	CG 250mL pH<2 w/HCL	1	Field Blank	g/c	Mercury Tot 245.7

Preservation Check Performed by: [Signature]

Field data collected by: [Signature] Date (mm/dd/yyyy) 10-3-23 Time (24 hr) 11:20

pH \_\_\_\_\_ Cond (umho) \_\_\_\_\_ Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC) \_\_\_\_\_ or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature) [Signature] Received by: (Signature) [Signature] Date (mm/dd/yyyy) 10-4-23 Time (24 hr) 11:25

# Chain of Custody

Scheduled for: **10/02/2023**



Client: **Big Rivers Electric Corporation Wilson Station**

Report To:  
**Big Rivers Electric Corporation Wilson Station**  
**Dawn Storkman**  
**PO Box 24**  
**Henderson, KY 42419**

Invoice To:  
**Big Rivers Electric Corporation Wilson Station**

Project: **Wilson Groundwater Wells 092-00004**

**Dawn Storkman**  
**PO Box 24**  
**Henderson, KY 42419**

Phone: **(270) 844-6000**

PWS ID#:

PO# \_\_\_\_\_

Please Print Legibly

State: **Ky**

Outlet# \_\_\_\_\_

Collected by (Signature): *[Signature]*

Compliance Monitoring? Yes  No

\*For composite samples please indicate begin time, end time and temp (oC) at end time below

Samples Chlorinated? Yes  No

Influent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

Effluent: Start Date \_\_\_\_\_ Start time \_\_\_\_\_ End Date \_\_\_\_\_ End Time \_\_\_\_\_ Temp (oC) \_\_\_\_\_

LAB USE ONLY Workorder # Sample ID#	*required information* Date (mm/dd/yy) Collection Time (24 hr)		Bottle and Preservative	Containers	Sample Description	Composite	Sample Analysis Requested
3100291-43 F	<u>10-3-23</u>	<u>11:30</u>	Plastic 1L pH<2 w/HNO3 Rad 226 (Sub)	1	Field Blank	g/c	Radium 226 (sub)
			Preservation Check: pH: _____				
3100291-43 G	<u>10-3-23</u>	<u>11:30</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	Field Blank	g/c	Radium 228 (sub)
			Preservation Check: pH: _____				
3100291-43 H	<u>10-3-23</u>	<u>11:30</u>	Plastic 1L pH<2 w/HNO3 Rad 228 (Sub)	1	Field Blank	g/c	Radium 228 (sub)
			Preservation Check: pH: _____				
3100291-43 I	<u>10-3-23</u>	<u>11:30</u>	Plastic 1L pH<2 w/HNO3 (Sub)	1	Field Blank	g/c	Radium Total (sub)
			Preservation Check: pH: _____				
3100291-43 J	<u>10-3-23</u>	<u>11:30</u>	AG 250mL pH<2 w/H2SO4	1	Field Blank	g/c	TOC
			Preservation Check: pH: _____				
3100291-44 A	<u>10-3-23</u>	<u>11:30</u>	CG 250mL pH<2 w/HCl Field Blank	1	Mercury Field Blank	g/c	Mercury Tot 245.7 Field Blank

Thermometer Serial Number  
181390287  
181460057  
Temp 10 °C

Preservation Check Performed by: **KED**

Field data collected by **Travis Speed** Date (mm/dd/yy) 10-3-23 Time (24 hr) 11:20

pH \_\_\_\_\_ Cond (umho) \_\_\_\_\_ Res Cl (mg/L) \_\_\_\_\_ Tot Cl (mg/L) \_\_\_\_\_ Free Cl (mg/L) \_\_\_\_\_

Temp (oC) \_\_\_\_\_ or (oF) \_\_\_\_\_ Static Water Level \_\_\_\_\_ DO (mg/L) \_\_\_\_\_ Turb. (NTU) \_\_\_\_\_

Flow (MGD) \_\_\_\_\_ or (CFS) \_\_\_\_\_ or (g/min) \_\_\_\_\_

Relinquished by: (Signature) *[Signature]* Received by: (Signature) *[Signature]* Date (mm/dd/yy) 10-4-23 Time (24 hr) 11:25



## APPENDIX D - DATA VALIDATION

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# Memorandum



Date: August 29, 2023  
To: Christopher Hoglund  
From: Ninad Indulkar  
Re: Quality Assurance/Quality Control (QA/QC) Review of Analytical Data  
BREC Wilson, Ohio County, Kentucky  
Project No. 156880

---

Water samples were collected at the BREC Wilson Landfill Site in Ohio County, Kentucky, between April 19 and April 26, 2023. The samples were analyzed by Pace Analytical Services of Madisonville, Kentucky (Pace Madisonville) and Pace Analytical of Greensburg, Pennsylvania (Pace Greensburg) for one or more of the following parameters:

Parameter	Analytical Method	Laboratory
Metals	SW846 6010 B SW846 6020 A	Pace - Madisonville
Mercury	EPA 245.7 REV	
Total Dissolved Solids (TDS)	2540 C-2015	
Anions chloride, fluoride, sulfate	EPA 300.0 REV 2.1	
Total Organic Carbon (TOC)	5310 C-2014	
Alkalinity Bicarbonate/carbonate alkalinity as CaCO <sub>3</sub>	2320 B-2011	
Total alkalinity		
Hardness as CaCO <sub>3</sub>	2340 C (as HACH 8226)	
Specific Conductance	2510 B-2011	
Chemical Oxygen Demand (COD)	HACH Method 8000	
pH	4500-H+ B-2000	
Radium-226 Radium-228 *total calculated from radium-226 + radium-228 analyses.	EPA 903.1 EPA 904 Total Radium by calculation	Pace - Greensburg

This sample delivery group (SDG) contains several single data sets, which were combined into one large PDF deliverable. This includes SDG for Pace Madisonville and several individual SDGs for Pace Greensburg. Because of this, page numbers do not accurately reflect the number of pages noted for the PDF. The PDF has been bookmarked by the data validator for easier manipulation of this PDF. Note, this differs from previous sampling events in which each well was reported in single SDGs for each lab location

The QA/QC results in association with the samples collected, were examined for any method-specific requirements. Data qualifiers, when appropriate, were added to the data as recommended in the United States Environmental Protection Agency's (USEPA's) *National Functional Guidelines for Inorganic Superfund Methods Data Review* (NFGI, 2020). The QA/QC review results are discussed below, and the qualifiers added during this review are summarized in Table 1.

# Memorandum *(continued)*



August 29, 2023

Page 2

1. Chain-of-Custody (COC) – Several COCs sent from Pace Madisonville to Pace Greensburg for the radium analyses did not include signatures, times, temperature and/or dates. The samples arrived and were correctly logged in and analyzed for radium as requested, except for Field Blank which was identified as Lab ID 3043773-01 for Pace Madisonville, and as Lab ID 3048773 for Pace Greensburg. Sample information was likely obtained from Pace’s laboratory information management (LIM) system. The relinquished and received signatures, times, and dates were present on the COCs for all samples sent from the field to Pace-Madisonville.

Note, several samples had a “/” following their identification in the PDF, this was dropped in this text and associated tables to maintain consistency with nomenclature in the reporting and/or database(s).

2. Requested Analyses Completed – All analyses were completed as requested. The majority of the results were detections above the RL, so cross-contamination is not likely, and results were qualified based on the QC provided.
3. Holding Times – All radium samples (except Field Blank and Well Duplicate2) were noted as lacking appropriate preservation of a pH less than 2 ( $\text{pH} < 2$ ). Upon arrival, Pace Greensburg added nitric acid ( $\text{HNO}_3$ ). However, because this preservation was added more than 5 days after sample collection, the affected sample/result pairs were all qualified as estimated (J). Also, for Field Blank, pH was analyzed more than 5 days after sample collection, and the sample was qualified as estimated (J).

With the above exceptions, all samples/analyses were completed within their recommended holding time.

4. Sample Preservation – All samples were received by Pace-Madisonville slightly below the preservation temperature range of 4 degrees Celsius ( $^{\circ}\text{C}$ )  $\pm$  2 $^{\circ}\text{C}$ . Since the samples were not in a frozen state, the requested analyses were completed. The radium samples did not require thermal preservation.
5. Field Blank – Field blanks assess the potential for cross-contamination during the sample activities and/or transport. For this review, the field blank was associated with samples collected on 04/25/2023, which included MW102, MW104, MW105, MW110, MW5, MW6, MW7, Well Duplicate-1 and Well Duplicate-2. The following field blank detections were noted during this review:
  - Mercury, specific conductance, hardness as  $\text{CaCO}_3$ , TDS, and chloride were detected in sample Field blank. Any low-level (J-flagged) detections of these analytes in the associated samples were qualified as non-detect (JU), while any detections greater than the reporting limit (RL) but less than five times the respective blank concentration were qualified as estimated potential high bias (J+). (see below)

# Memorandum *(continued)*



August 29, 2023

Page 3

- Additionally, radium 228 and total radium detections over the RL were reported in this field blank (SDG 3048773). A negative radium 226 detection was also reported; however, it should still be reviewed for potential carryover when accounting for the uncertainty value associated with radium methods. For this blank review, estimated (J) qualifiers (rather than non-detect qualifiers) were added to the associated samples due to the uncertainty associated with these analytes.

The following summarizes the review of these analytes based on these above-noted field blank detections:

- Samples MW102, MW104, MW105, MW110, MW5, MW6, MW7, Well Duplicate-1 and Well Duplicate-2 were non-detect for mercury; therefore, no qualifiers were required.
- Samples MW102, MW104, MW105, MW110, MW5, MW6, MW7, Well Duplicate-1 and Well Duplicate-2 yielded a specific conductivity detection greater than five times the field blank concentration; hence, no qualifier was required.
- Samples MW102, MW104, MW105, MW110, MW5, MW6, MW7, Well Duplicate-1 and Well Duplicate-2 yielded a Hardness as CaCO<sub>3</sub> detection greater than five times the field blank concentration; hence, no qualifier was required.
- Samples MW102, MW104, MW105, MW110, MW5, MW6, MW7, Well Duplicate-1 and Well Duplicate-2 yielded a TDS result greater than five times the field blank concentration; hence, no qualifier was required.
- Samples MW102, MW104, MW105, MW110, MW5, MW6, MW7, Well Duplicate-1 and Well Duplicate-2 yielded a chloride detection greater than five times the field blank concentration; hence, no qualifier was required.
- All radium results for the above-noted associated samples were qualified as estimated (J) since most were less than five times the respective field blank concentration. For the few radium 226 results not greater than five times the negative field blank result, professional judgment was used. These results were also qualified estimated (J) due to the uncertainty which would result in a concentration less than five times said field blank concentration.

Also, although not a field blank for sampling equipment, mercury field blanks were also submitted for each sample. No detections were noted in these blanks.

6. Method Blanks – Method blanks assess the potential for cross-contamination during the sample preparation and/or analyses. The following method blank detections were noted during this

# Memorandum *(continued)*



August 29, 2023

Page 4

review:

- Zinc was detected at a low level (J-flagged) in the laboratory blank in QC batch BCD2229. Samples MW-10D, MW-111, and MW-112 exhibited low-level detections below their RL, and were qualified as non-detect (JU).
- Radium: Radium-226 and radium-228 were detected in all method blanks. Because of the uncertainty associated with radium results, the review criteria were slightly altered to account for this. For any associated radium-226 or radium-228 detection less than five times the corresponding method blank concentration plus its uncertainty, the respective result was qualified as estimated (J). Additionally, because this result was used in the calculation to report total radium, the total radium result for said sample was also qualified as estimated (J). Based on this, all samples (except the field blank) were qualified and estimated (J) for the radium fractions. Note, several samples were previously qualified estimated (J) for the preservation/holding time issues noted by the lab and/or field blank detections.

Note, blanks are not typically qualified based on other blanks. Therefore, the field blank was excluded from this qualification.

7. Laboratory Control Samples (LCS) – The LCS contains a matrix similar to that of the sample that has been spiked with known concentrations of target analytes. The LCS is prepared and analyzed by the same method as the samples. As a measure of analytical accuracy, the results of the LCS are compared against the known analyte concentrations in the spike to determine percent recovery (REC). The purpose of the LCS is to determine the performance of the laboratory with respect to analyte recovery, independent of field sample matrix interference.

All LCS RECs were within their respective QC limits, except for fluoride, sodium and pH (lab) in QC batches BCE0124, BCD2654 and BCD2583, respectively. The LCS REC was below the QC limit for sodium, and the associated sample (Field Blank) was qualified as (UJ) as it was non-detect in the sample.

8. Matrix Spike/Matrix Spike Duplicates (MS/MSD) – MS/MSDs are typically run for organic and inorganic analyses. A sample is split into three portions (original, MS and MSD), and a known amount of a target analyte is added (spiked) to two portions (MS and MSD) of the sample. The results of these two portions are compared with each other for reproducibility using the relative percent difference (RPD). They are also compared against the unspiked portion of the sample for REC of the spike. For one or more MS/MSDs, the lab could not calculate a REC and no result was reported. The following site-specific MS/MSD results were outside their respective control limits, and qualified as noted (see also Table 1 for all qualifications added).

- MS/MSD REC performed on sample MW10 (Lab ID 3043158-01):

## Memorandum *(continued)*



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- The MS REC of mercury was below the control limits. The parent sample was non-detect for this analyte, and qualified as estimated at the reporting limit (UJ).
- MS/MSD REC performed on sample MW114 (Lab ID 3043160-01):
  - The MS REC for total alkalinity and calcium was below the control limit. Since it was less than  $\frac{1}{4}$  the respective concentration of the parent sample, and no conclusion could be made.
  - The MS/MSD RECs for sodium were below the control limit. Since it was less than  $\frac{1}{4}$  the respective concentration of the parent sample, and no conclusion could be made.
  - MS/MSD RECs for lithium and potassium were above the control limit. No qualifiers were added since the parent sample was non detect for these analytes.
- MS/MSD REC performed on sample MW10D (Lab ID 3043162-01):
  - The lab spike amounts for boron, calcium, sodium and magnesium were less than  $\frac{1}{4}$  the respective concentration of the parent sample. Therefore, the MS/MSD results for these metals were inconclusive.
  - The MS/MSD RECs of lithium were below the control limits. Hence, it was qualified as (J-)
- MS/MSD REC performed on sample MW113 (Lab ID 3043166-01):
  - The MS/MSD RECs of mercury were below the control limits. The parent sample was non-detect for analyte and qualified as estimated at the reporting limit (UJ).
- MS/MSD REC performed on sample MW4D (Lab ID 3043171-01):
  - The MS/MSD RECs of mercury were below the control limits. The parent sample was non-detect for analyte and qualified as estimated at the reporting limit (UJ).
- MS/MSD REC performed on sample MW7 (Lab ID 3043174-01):
  - The lab spike amount for sulfate was less than  $\frac{1}{4}$  the respective concentration of the parent sample. Therefore, the MS/MSD results for this MS/MSD pair were inconclusive.
- MS/MSD REC performed on sample MW8 (Lab ID 3043175-01):

# Memorandum *(continued)*



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- The lab spike amount for total alkalinity was less than  $\frac{1}{4}$  the concentration of the parent sample. As such, the MS result was inconclusive.
- The lab noted chloride did not meet the  $\frac{1}{4}$  criteria, although upon further review the spike amount was sufficient; however, the sample was analyzed at a high dilution. As such, no conclusion could be made regarding the MS/MSD for chloride.
- The MS/MSD RECs for sulfate were below the QC limits. Hence the sample was qualified as estimated potential low bias (J-).

- MS/MSD REC performed on sample Well Duplicate-2 (Lab ID 3043177-01):

The MS REC for total alkalinity was below the QC limit. Hence, the sample was qualified as estimated potential low bias (J-). Because this field duplicate was collected at MW-110, it was also qualified estimated potential low bias (J-) for this data point.

- General:

- For one or more MS/MSD results, the lab did not report the REC and/or RPD. Upon further review, these were not reported as the parent sample was non-detect and the spike amount was less than the sample's RL. Therefore, the result was considered non-detect and could not be calculated. No qualifiers were added based solely on these, and review was made by the corresponding QC results.

9. Laboratory Duplicates – Laboratory duplicates were performed to evaluate analytical precision between samples when an MS/MSD may not be appropriate. Only project-specific laboratory duplicates were compared and used for qualification. The following duplicate results were outside their respective control limits and qualified as noted (see also Table 1 for all qualifications added).

- Laboratory duplicate performed on MW113 (3043166-01):
  - The COD laboratory duplicate performed on the noted sample yielded an elevated RPD that exceeded the QC limit. Upon further review, a sensitivity test was more practical since the results were less than five times the RL. Thus, no qualifiers were necessary.

All the other site-specific laboratory duplicates were within QC limits.

10. Field Duplicate Results – Field duplicate results provide information on the ability to reproduce field results and account for errors introduced from handling, shipping, storage, preparation, and analysis of field samples. There are no specific USEPA criteria for qualifying data from field



# Memorandum *(continued)*



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duplicate results. Depending upon the sample concentration, one of the following criteria based upon NFGI is applicable:

- Is the compound detected in both portions?
- If the sample concentrations are greater than 5 times the detection limit, then the maximum allowable RPD is 20 percent for water samples.
- If the sample concentrations are less than 5 times the detection limit, then a sensitivity test is applied. For the sensitivity test, the sample concentrations must agree within  $\pm$  the lower detection limit for water samples.
- If the radium results are reported above their minimum detectable concentration (MDC), the normalized difference (also called the relative error ratio) between the duplicate pair was calculated. The maximum normalized difference is 1.96 for the radium samples.

The following field duplicate pairs were included in this review, and detections are presented on Table 2:

- MW-6/DUP /Well Duplicate 1 (collected 04/25/2023): All field duplicate results were adequately replicated, with the exception of sulfate and chloride, which did not meet the duplication criteria since they yielded an elevated RPD. Hence, the parent/duplicate pair was qualified as estimated (J) for these analytes.
  - MW-110/ Well Duplicate 2 (collected 04/25/2023): Iron and hardness as CaCO<sub>3</sub> did not meet the duplication criteria since they yielded elevated RPDs. As such, the parent/duplicate pair was qualified as estimated (J) for these analytes.
  - General: Both field duplicate pairs exhibited variable differences in the radium results due to their associated uncertainty. As noted previously, all radium results were qualified estimated (J) for one or more reasons. As such, no further qualifiers were added for these results based solely on the field duplicate review.
11. Detection and Quantitation Limits – Dilutions were required to account for high concentrations of target analytes and/or matrix interferences in one or more samples. RLs were adjusted accordingly, and no data qualifiers were added based on these dilutions.
12. Miscellaneous – Dilutions the laboratory also added various qualifiers based on upper-level review items. This included calibrations and post-digestion spike (PDS) samples. The calibration information was not provided and was not included in this scope of review. No data qualifiers were added based solely on these calibration flags. For the PDS, the corresponding MS/MSDs were reviewed, and qualifiers were added, as applicable, based on these results. Several of the PDS results were also inconclusive as the spike amounts were less than  $\frac{1}{4}$  the respective sample concentration. No qualifiers were added based on the PDS results.

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13. Conclusion – The data were reviewed for achievement of any method-specified QA/QC criteria. The data are valid for use, as qualified, in reporting the results of this investigation.

### Attachments

Table 1 – Data Qualifier Table

Table 2 – Field Duplicate Comparison – Detections Only

**Table 1**  
**Data Qualifier Table**  
**BREC Wilson - April 2023 Sampling Event**  
**Ohio County, Kentucky**

Analytical Method	Analyte(s)	Sample Identification	Laboratory Number	Data Validation Qualifier	Reason(s) for Qualification
4500-H+ B-2000	pH (Lab)	Field Blank	3043773-01	J	Holding time exceedance LCS REC > QC limit
EPA 245.7 REV 2 SW846 6010 B	Mercury Sodium			UJ UJ	MSD REC < QC LCS REC < QC limit
EPA 903.1 EPA 904.0 Total Radium	Radium 226 Radium 228 Total Radium	MW10	3043158-01	J	Holding time exceedance/ Inadequate preservation in the field Method blank detection
EPA 245.7 REV 2	Mercury			UJ	MS REC < QC limit
EPA 903.1 EPA 904.0 Total Radium	Radium 226 Radium 228 Total Radium	MW102	3043159-01	J	Holding time exceedance/ Inadequate preservation in the field Field/Method blank detection
EPA 903.1 EPA 904.0 Total Radium	Radium 226 Radium 228 Total Radium	MW104	3043167-01	J	Holding time exceedance/ Inadequate preservation in the field Field /Method blank detection
EPA 903.1 EPA 904.0 Total Radium	Radium 226 Radium 228 Total Radium	MW105	3043161-01	J	Holding time exceedance/ Inadequate preservation in the field Field/Method blank detection
SW846-6020 A	Lithium Zinc	MW-10D	3043162-01	J- JU	MS/MSD RECs < QC limit Method Blank Detection
EPA 903.1 EPA 904.0 Total Radium	Radium 226 Radium 228 Total Radium			J	Holding time exceedance/ Inadequate preservation in the field Field/Method blank detection
EPA 903.1 EPA 904.0 Total Radium	Radium 226 Radium 228 Total Radium	MW110	3043163-01	J	Holding time exceedance/ Inadequate preservation in the field Field/Method blank detection
2320 B-2011	Total Alkalinity			J-	MS REC < QC limit
2340 C (as HACH 8226) SW846 6010 B	Hardness as CaCO3 Iron			J	Parent/ Duplicate Failed RPD test
EPA 903.1 EPA 904.0 Total Radium SW846-6020 A	Radium 226 Radium 228 Total Radium Zinc	MW-111	3043164-01	J JU	Holding time exceedance/ Inadequate preservation in the field Method blank detection Method Blank Detection
EPA 903.1 EPA 904.0 Total Radium SW846-6020 A	Radium 226 Radium 228 Total Radium Zinc	MW-112	3043165-01	J JU	Holding time exceedance/ Inadequate preservation in the field Method blank detection Method Blank Detection
EPA 903.1 EPA 904.0 Total Radium EPA 245.7 REV 2	Radium 226 Radium 228 Total Radium Mercury	MW-113	3043166-01	J UJ	Holding time exceedance/ Inadequate preservation in the field Method blank detection MS/MSD RECs < QC limit
EPA 903.1 EPA 904.0 Total Radium	Radium 226 Radium 228 Total Radium	MW114	3043160-01	J	Holding time exceedance/ Inadequate preservation in the field Field/Method blank detection
EPA 903.1 EPA 904.0 Total Radium EPA 245.7 REV 2	Radium 226 Radium 228 Total Radium Mercury	MW4D	3043171-01	J UJ	Holding time exceedance/ Inadequate preservation in the field Method blank detection MS/MSD RECs < QC limit
EPA 903.1 EPA 904.0 Total Radium	Radium 226 Radium 228 Total Radium	MW5	3043172-01	J	Holding time exceedance/ Inadequate preservation in the field Field/Method blank detection
EPA 903.1 EPA 904.0 Total Radium EPA 300.0 REV 2.1	Radium 226 Radium 228 Total Radium Sulfate	MW6	3043173-01	J J	Holding time exceedance/ Inadequate preservation in the field Field/Method blank detection Parent/ Duplicate Failed RPD test
EPA 903.1 EPA 904.0 Total Radium	Radium 226 Radium 228 Total Radium Chloride	MW7	3043174-01	J	Holding time exceedance/ Inadequate preservation in the field Field/Method blank detection

**Table 1**  
**Data Qualifier Table**  
**BREC Wilson - April 2023 Sampling Event**  
**Ohio County, Kentucky**

Analytical Method	Analyte(s)	Sample Identification	Laboratory Number	Data Validation Qualifier	Reason(s) for Qualification
EPA 903.1 EPA 904.0 Total Radium	Radium 226 Radium 228 Total Radium	MW8	3043175-01	J	Holding time exceedance/ Inadequate preservation in the field Method blank detection
EPA 300.0 REV 2.1	Sulfate			J-	MS/MSD RECs < QC limit
EPA 903.1 EPA 904.0 Total Radium	Radium 226 Radium 228 Total Radium	Well Duplicate 1 Duplicate of MW-6	3043176-01	J	Holding time exceedance/ Inadequate preservation in the field Filed/Method blank detection
EPA 300.0 REV 2.1	Sulfate Chloride			J	Parent/ Duplicate Failed RPD test
EPA 903.1 EPA 904.0 Total Radium	Radium 226 Radium 228 Total Radium	Well Duplicate 2 Duplicate of MW-110	3043177-01	J	Field/Method blank detection
2320 B-2011	Total Alkalinity			J-	MS REC < QC limit
2340 C (as HACH 8226)	Hardness as CaCO <sub>3</sub>			J	Parent/ Duplicate Failed RPD test
SW846 6010 B	Iron				

**Notes:**

CaCO<sub>3</sub> = Calcium Carbonate

J = Qualified as estimated during data review

J- = Qualified as estimated potential low bias during data review

JU = Low-level detection was qualified as nondetect during data review

LCS = Laboratory Control Sample

MS/MSD = Matrix spike/Matrix spike duplicate

MW = Monitoring Well

QC = Quality Control

REC = Percent Recovery

RPD = Relative Percent Difference

UJ = Nondetect result was qualified as estimated at the reporting limit during data review

**Table 2**  
**Field Duplicate Comparison - Detections Only**  
**BREC Wilson - April 2023 Sampling Event**  
**Ohio County, Kentucky**

Sample ID: Lab ID: Date:	MW-6 3043173-01 4/25/2023	Well Duplicate 1 3043176-01 4/25/2023	Units	Meets QC
Bicarbonate Alkalinity as CaCO3	478	479	mg/L	Yes
Total Alkalinity	478	479	mg/L	Yes
Hardness as CaCO3	1,790	1,850	mg/L	Yes
Specific Conductance (Lab)	2,950	2,960	umhos/cm	Yes
Total Dissolved Solids	2,300	2,430	mg/L	Yes
Total Organic Carbon	1.9	1.8	mg/L	Yes
Chloride	10.9 J	26.1 J	mg/L	No, (RPD 82%)
Sulfate	432 J	1470 J	mg/L	No, (RPD 109%)
Radium 226	0.602 J	0.118 J	pCi/L	See Text
Radium 228	1.04 J	0.696 J	pCi/L	See Text
Total Radium	1.64 J	0.814 J	pCi/L	See Text
Chemical Oxygen Demand	13	11	mg/L	Yes
Boron	0.87	0.86	mg/L	Yes
Calcium	461	473	mg/L	Yes
Iron	5.51	5.14	mg/L	Yes
Magnesium	221	227	mg/L	Yes
Potassium	7.51	7.54	mg/L	Yes
Sodium	35.5	35.8	mg/L	Yes
Arsenic	0.005	0.0045	mg/L	Yes
Barium	0.012	0.011	mg/L	Yes
Chromium	0.0008	0.002 U	mg/L	Yes
Cobalt	0.007	0.007	mg/L	Yes
Lithium	0.04	0.04	mg/L	Yes
Molybdenum	0.006	0.006	mg/L	Yes
Nickel	0.014	0.014	mg/L	Yes
Zinc	0.02	0.02	mg/L	Yes
Sample ID: Lab ID: Date:	MW110 3043163-01 04/25/2023	Well Duplicate 2 3043177-01 04/25/2023	Units	Meets QC
Bicarbonate Alkalinity as CaCO3	149	149	mg/L	Yes
Total Alkalinity	149 J-	149 J-	mg/L	Yes
Hardness as CaCO3	128 J	194 J	mg/L	No, (RPD 41%)
Specific Conductance (Lab)	451	482	umhos/cm	Yes
Total Dissolved Solids	336	420	mg/L	Yes
Total Organic Carbon	1.7	1.7	mg/L	Yes
Chloride	11.3	10.6	mg/L	Yes
Sulfate	77.7	76.6	mg/L	Yes
Radium 226	0.256 J	0.769 J	pCi/L	See Text
Radium 228	0.29 J	0.231 J	pCi/L	See Text
Total Radium	0.546 J	1 J	pCi/L	See Text
Chemical Oxygen Demand	8	8	mg/L	Yes
Calcium	37.7	40.2	mg/L	Yes
Iron	4.86 J	3.96 J	mg/L	No, (RPD 20.4%)
Magnesium	18.8	20	mg/L	Yes
Potassium	0.54	0.56	mg/L	Yes
Sodium	27.2	28.5	mg/L	Yes
Arsenic	0.0023	0.0016	mg/L	Yes
Barium	0.057	0.053	mg/L	Yes

**Notes:**

- CaCO3 = Calcium Carbonate
- ID = identification
- J = Qualified as estimated during data review
- mg/L = milligrams per liter
- MW = Monitoring Well
- pCi/L = picoCurie per liter
- QC = Quality Control
- RPD = Relative Percentage Difference
- U = Compound was not detected
- umhos/cm = microsiemens per centimeter

# Memorandum



Date: January 10, 2024  
To: Christopher Hoggund  
From: Omkar Parab  
Re: Quality Assurance/Quality Control (QA/QC) Review of Analytical Data  
BREC Wilson, Ohio County, Kentucky  
Project No. 156880

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Water samples were collected at the BREC Wilson Landfill Site in Ohio County, Kentucky, between October 2 and 3, 2023. The samples were analyzed by Pace Analytical Services of Madisonville, Kentucky (Pace Madisonville) and Pace Analytical of Greensburg, Pennsylvania (Pace Greensburg) for one or more of the following parameters:

Parameter	Analytical Method	Laboratory
Metals	SW846 6010 B SW846 6020 A	Pace - Madisonville
Mercury	EPA 245.7 REV 2	
Total Dissolved Solids (TDS)	2540 C-2015	
Anions chloride, fluoride, sulfate	EPA 300.0 REV 2.1	
Total Organic Carbon (TOC)	5310 C-2014	
Alkalinity Bicarbonate/carbonate alkalinity as CaCO <sub>3</sub>	2320 B-2011	
Total alkalinity		
Hardness as CaCO <sub>3</sub>	2340 C (as HACH 8226)	
Specific Conductance	2510 B-2011	
Chemical Oxygen Demand (COD)	HACH Method 8000	
Radium-226 Radium-228 *total calculated from radium-226 + radium-228 analyses.	EPA 903.1 EPA 904 Total Radium by calculation	Pace - Greensburg

The QA/QC results in association with the samples collected, were examined for any method-specific requirements. Data qualifiers, when appropriate, were added to the data as recommended in the United States Environmental Protection Agency's (USEPA's) *National Functional Guidelines for Inorganic Superfund Methods Data Review* (NFGI, 2020). The QA/QC review results are discussed below, and the qualifiers added during this review are summarized in Table 1.

1. Chain-of-Custody (COC) –The relinquished and received signatures, times, and dates were present on the COCs for all samples sent from the field to Pace-Madisonville. For the Pace-Madisonville to Pace-Greensburg transfer, the lab noted that no dates or times were included on the sample bottles.
2. Requested Analyses Completed – All analyses were completed as requested.

# Memorandum *(continued)*



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3. Holding Times – All samples/analyses were completed within their recommended holding time.
4. Sample Preservation – The lab did not indicate any problems with sample temperatures upon receipt. Upon arrival, the laboratory noted that the samples were received on ice and were properly stored within the recommended sample temperature range. No data qualifiers were necessary. The radium samples did not require thermal preservation.

All radium samples (except MW-10, MW-10D, MW-102, MW-104, MW-110, MW-112, MW-114, Well Duplicate 1, and Field Blank) were noted as lacking appropriate preservation of a pH less than 2 (pH<2). Upon arrival, Pace Greenburg added 5 ml nitric acid (HNO<sub>3</sub>). However, because this preservation was added more than 5 days after sample collection, the affected sample/result pairs were all qualified as estimated (J).

5. Field Blank – Field blanks assess the potential for cross-contamination during the sample activities and/or transport. For this review, the field blank was associated with samples collected on 10/03/2023, which included MW-6, MW-7, and MW-10. The following field blank detections were noted during this review:
  - Zinc and specific conductance were detected in the sample Field Blank. Any low-level (J-flagged) detections of these analytes in the associated samples were qualified as non-detect (JU), while any detections greater than the reporting limit (RL) but less than five times the respective blank concentration were qualified as estimated potential high bias (J+). No qualifiers were added for detections greater than five times the respective blank concentration. (see below for qualifiers added based on these blank detections)
  - Radium 226, radium 228, and total radium detections over the RL were reported in this field blank. For this blank review, estimated (J) qualifiers (rather than non-detect qualifiers) were added to the associated samples due to the uncertainty associated with these analytes.

The following summarizes the review of these analytes based on these above-noted field blank detections:

- Samples MW-6 and MW-7 yielded a low-level (J-flagged) zinc detection; therefore, the noted samples were qualified as non-detect (JU).
- Sample MW-10 yielded a zinc detection greater than the RL but less than five times the field blank concentration. Hence, the sample was qualified as estimated potential high bias (J+).
- All specific conductance results for the above-noted associated samples were greater than five times the field blank detection; hence, no qualifiers were required.



# Memorandum *(continued)*



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- All radium results for the above-noted associated samples were qualified as estimated (J) since most were less than five times the respective field blank concentration. For the few radium 226 results not greater than five times the negative field blank result, professional judgment was used. These results were also qualified estimated (J) due to the uncertainty which would result in a concentration less than five times said field blank concentration.

Mercury field blanks were also submitted for each sample. Mercury was detected in the following blanks: Mercury Field Blank MW-8, Mercury Field Blank MW-10, Mercury Field Blank MW-10D, and Mercury Field Blank MW-105R. Since mercury was non-detect in the corresponding field sample, no qualifiers were required.

6. Method Blanks – Method blanks assess the potential for cross-contamination during the sample preparation and/or analysis. The following method blank detections were noted during this review:
- Zinc was detected in the laboratory blank in QC batch BCJ0461. Associated samples MW-5, MW-6, MW-7, MW-8, and MW-10D exhibited low-level (J-qualified) detections and were qualified as non-detect (JU). Sample MW-10 exhibited detection greater than RL but less than five times the method blank concentration and was qualified as estimated potential high bias (J+). Samples MW-4D exhibited detections greater than five times the method blank concentration; hence, no qualifiers were required.
  - Radium: Radium-226 and radium-228 were detected in all method blanks. Because of the uncertainty associated with radium results, the review criteria were slightly altered to account for this. For any associated radium-226 or radium-228 detection less than five times the corresponding method blank concentration plus its uncertainty, the respective result was qualified as estimated (J). Additionally, because this result was used in the calculation to report total radium, the total radium result for said sample was also qualified as estimated (J). Based on this, all samples (except the field blank) were qualified and estimated (J) for the radium fractions. Note, several samples were previously qualified estimated (J) for the preservation issues noted by the lab and/or field blank detections.

Note, blanks are not typically qualified based on other blanks. Therefore, the field blank was excluded from this qualification.

7. Laboratory Control Samples (LCS) – The LCS contains a matrix similar to that of the sample that has been spiked with known concentrations of target analytes. The LCS is prepared and analyzed by the same method as the samples. As a measure of analytical accuracy, the results of the LCS are compared against the known analyte concentrations in the spike to determine percent recovery (REC). The purpose of the LCS is to determine the performance of the laboratory with respect to analyte recovery, independent of field sample matrix interference.

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All LCS RECs were within their respective QC limits, except for the following:

- The LCS REC was below the QC limit for sodium in QC batch BCJ0463. This LCS REC results was not associated with any sodium results reported in the project samples. No qualifiers were added based solely on this LCS result.
- The LCS REC was above the QC limit for bicarbonate alkalinity as CaCO<sub>3</sub> in QC batches BCJ0631 and BCJ0633. The bicarbonate alkalinity as CaCO<sub>3</sub> detections in all samples except the field blank were qualified as estimated potential high bias (J+). Additionally, since the bicarbonate alkalinity was used to calculate the total alkalinity, this result was also qualified as noted for the above-noted samples.
- The LCS RECs for chloride and sulfate in BCJ0816 were below their QC limits. Associated sample Well Duplicate 2 was qualified as estimated potential low bias (J-). Associated Field Blank sample was qualified as estimated at the reporting limit (UJ) as the noted analytes were non-detect in this sample.

8. Matrix Spike/Matrix Spike Duplicates (MS/MSD) – MS/MSDs are typically run for organic and inorganic analyses. A sample is split into three portions (original, MS and MSD), and a known amount of a target analyte is added (spiked) to two portions (MS and MSD) of the sample. The results of these two portions are compared with each other for reproducibility using the relative percent difference (RPD). They are also compared against the unspiked portion of the sample for REC of the spike. For one or more MS/MSDs, the lab could not calculate a REC and no result was reported. The following site-specific MS/MSD results were outside their respective control limits and qualified as noted (see also Table 1 for all qualifications added).

- MS/MSD REC performed on sample MW-5:
  - The MS/MSD results for several 6010 metals were reported at a dilution, while the parent sample was not reported at a dilution. Therefore, no conclusions could be made regarding the accuracy of the MS/MSD results. No qualifiers were added.
  - The MS/MSD RECs of mercury were below the control limits. The spiked parent sample was non-detect for mercury and was qualified as estimated at the reporting limit (UJ).
  - The MS REC for total alkalinity was below the control limits. The lab spike amounts were less than ¼ the concentration of the parent sample for total alkalinity. Therefore, this MS result was inconclusive, and no qualifiers were added.
- MS/MSD REC performed on sample MW-104:

# Memorandum *(continued)*



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- The MS/MSD results for several 6010 metals were reported at a dilution, while the parent sample was not reported at a dilution. Therefore, no conclusions could be made regarding the accuracy of the MS/MSD results. Additionally, the post digestive spike (PDS) performed on this sample for these metals also exhibited the same issue. No qualifiers were added based solely on these results.
- The MS/MSD RECs for sulfate were reported as 'NR', the lab spike amounts were less than ¼ the concentration of the parent sample for sulfate. Therefore, these MS/MSD results were inconclusive, and no qualifiers were added. The MS/MSD RECs for chloride and fluoride were below the control limits. Chloride detection in the spiked parent sample was qualified as estimated potential low bias (J-). The spiked parent sample was non-detect for fluoride and was qualified as estimated at the reporting limit (UJ).
- The lab also performed a PDS on this same sample, and the PDS REC for antimony was below the control limits. Because the corresponding MS/MSD results were acceptable, no actions were necessary.
- MS/MSD REC performed on sample MW-110:
  - The MS/MSD results for several 6010 metals were reported at a dilution, while the parent sample was not reported at a dilution. Therefore, no conclusions could be made regarding the accuracy of the MS/MSD results. No qualifiers were added.
  - The MS REC for total alkalinity was below the control limits. The total alkalinity detection in the spiked parent sample was qualified as estimated potential low bias (J-).
- MS/MSD REC performed on sample MW-113:
  - The MS/MSD RECs of mercury were below the control limits. The spiked parent sample was non-detect for analyte and was qualified as estimated at the reporting limit (UJ).
  - The MS REC for total alkalinity was below the control limits. The lab spike amounts were less than ¼ the concentration of the parent sample for total alkalinity. Therefore, this MS results was inconclusive, and no qualifiers were added.
- MS/MSD REC performed on sample MW-112:

# Memorandum *(continued)*



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- The MS/MSD RPD of mercury was above its control limits. The spiked parent sample was non-detect for mercury, and no qualifiers were added.

All the other MS/MSD RECs were within their respective QC limits.

9. Laboratory Duplicates – Laboratory duplicates were performed to evaluate analytical precision between samples when an MS/MSD may not be appropriate. Only project-specific laboratory duplicates were compared and used for qualification.

All the site-specific laboratory duplicates were within QC limits.

10. Field Duplicate Results – Field duplicate results provide information on the ability to reproduce field results and account for errors introduced from handling, shipping, storage, preparation, and analysis of field samples. There are no specific USEPA criteria for qualifying data from field duplicate results. Depending upon the sample concentration, one of the following criteria based upon NFGI is applicable:

- Is the compound detected in both portions?
- If the sample concentrations are greater than 5 times the detection limit, then the maximum allowable RPD is 20 percent for water samples.
- If the sample concentrations are less than 5 times the detection limit, then a sensitivity test is applied. For the sensitivity test, the sample concentrations must agree within  $\pm$  the lower detection limit for water samples.
- If the radium results are reported above their minimum detectable concentration (MDC), the normalized difference (also called the relative error ratio) between the duplicate pair was calculated. The maximum normalized difference is 1.96 for the radium samples.

The following field duplicate pairs were included in this review, and detections are presented on Table 2:

- MW-110/Well Duplicate 1 (collected 10/2/2023): All field duplicate results were adequately replicated, with the exception of hardness as CaCO<sub>3</sub>, iron, and arsenic which did not meet the duplication criteria. Hardness as CaCO<sub>3</sub> and iron yielded elevated RPDs, and the arsenic failed the sensitivity test. Hence, the parent/duplicate pair was qualified as estimated (J) for these analytes.
- MW-5 / Well Duplicate 2 (collected 10/2/2023): Sulfate did not meet the duplication criteria since it yielded an elevated RPD. As such, the parent/duplicate pair was qualified as estimated (J) for this analyte.

# Memorandum *(continued)*



January 10, 2024

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- General: Both field duplicate pairs exhibited variable differences in the radium results due to their associated uncertainty. As noted previously, all radium results were qualified estimated (J) for one or more reasons. As such, no further qualifiers were added for these results based solely on the field duplicate review.
11. Detection and Quantitation Limits – Dilutions were required to account for high concentrations of target analytes and/or matrix interferences in one or more samples (indicated by “D” qualifiers added by the lab). RLs were adjusted accordingly, and no data review qualifiers were added based on these dilutions.
  12. Miscellaneous –The lab flagged one or more results out for calibration issues. The calibration information was not provided and was not included in this scope of review (flagged “V1” by the laboratory). No data review qualifiers were added based solely on these calibration flags.
  13. Conclusion – The data were reviewed for achievement of any method-specified QA/QC criteria. The data are valid for use, as qualified, in reporting the results of this investigation.

## Attachments

Table 1 – Data Qualifier Table

Table 2 – Field Duplicate Comparison – Detections Only

**Table 1  
Data Qualifier Table  
BREC Wilson - October 2023 Sampling Event  
Ohio County, Kentucky**

Analytical Method	Analyte(s)	Sample Identification	Laboratory Number	Data Validation Qualifier	Reason(s) for Qualification
EPA 903.1 EPA 904.0 Total Radium	Radium 226 Radium 228 Total Radium	MW4D	3100291-09	J	Inadequate preservation Method blank detection
2320 B-2011	Bicarbonate alkalinity as CaCO3 Total Alkalinity			J+	LCS REC > QC limit (see text)
EPA 903.1 EPA 904.0 Total Radium	Radium 226 Radium 228 Total Radium	MW5	3100291-11	J	Inadequate preservation Method blank detection
SW846-6020 A	Zinc			JU	Method blank detection
2320 B-2011	Bicarbonate alkalinity as CaCO3 Total Alkalinity			J+	LCS REC > QC limit (see text)
EPA 245.7 REV 2	Mercury			UJ	MS/MSD RECs < QC limits
EPA 300.0 REV 2.1	Sulfate			J	Parent/ Duplicate Failed RPD test
EPA 903.1 EPA 904.0 Total Radium	Radium 226 Radium 228 Total Radium	MW6	3100291-13	J	Inadequate preservation Field/Method blank detection
SW846-6020 A	Zinc			JU	Field/Method blank detection
2320 B-2011	Bicarbonate alkalinity as CaCO3 Total Alkalinity			J+	LCS REC > QC limit (see text)
EPA 903.1 EPA 904.0 Total Radium	Radium 226 Radium 228 Total Radium	MW7	3100291-15	J	Inadequate preservation Field/Method blank detection
SW846-6020 A	Zinc			JU	Field/Method blank detection
2320 B-2011	Bicarbonate alkalinity as CaCO3 Total Alkalinity			J+	LCS REC > QC limit (see text)
EPA 903.1 EPA 904.0 Total Radium	Radium 226 Radium 228 Total Radium	MW8	3100291-17	J	Inadequate preservation Method blank detection
SW846-6020 A	Zinc			JU	Method blank detection
2320 B-2011	Bicarbonate alkalinity as CaCO3 Total Alkalinity			J+	LCS REC > QC limit (see text)
SW846-6020 A	Zinc			J+	Field/Method blank detection
EPA 903.1 EPA 904.0 Total Radium	Radium 226 Radium 228 Total Radium	MW10	3100291-19	J+	Field/Method blank detection
2320 B-2011	Bicarbonate alkalinity as CaCO3 Total Alkalinity			J+	LCS REC > QC limit (see text)
SW846-6020 A	Zinc			JU	Method blank detection
EPA 903.1 EPA 904.0 Total Radium	Radium 226 Radium 228 Total Radium	MW10D	3100291-21	J	Method blank detection
2320 B-2011	Bicarbonate alkalinity as CaCO3 Total Alkalinity			J+	LCS REC > QC limit (see text)
EPA 903.1 EPA 904.0 Total Radium	Radium 226 Radium 228 Total Radium	MW102	3100291-23	J	Method blank detection
2320 B-2011	Bicarbonate alkalinity as CaCO3 Total Alkalinity			J+	LCS REC > QC limit (see text)
EPA 903.1 EPA 904.0 Total Radium	Radium 226 Radium 228 Total Radium	MW104	3100291-25	J-	Method blank detection
2320 B-2011	Bicarbonate alkalinity as CaCO3 Total Alkalinity			J+	LCS REC > QC limit (see text)
EPA 300.0 REV 2.1	Chloride			J-	MS/MSD RECs < QC limits
EPA 300.0 REV 2.1	Fluoride			UJ	MS/MSD RECs < QC limits
EPA 903.1 EPA 904.0 Total Radium	Radium 226 Radium 228 Total Radium	MW-105R	3100291-27	J	Inadequate preservation Method blank detection
SW846-6020 A	Zinc			JU	Method blank detection
2320 B-2011	Bicarbonate alkalinity as CaCO3 Total Alkalinity			J+	LCS REC > QC limit (see text)
SW846-6020 A	Zinc			JU	Method blank detection
EPA 903.1 EPA 904.0 Total Radium	Radium 226 Radium 228 Total Radium	MW110	3100291-29	J	Method blank detection
2320 B-2011	Bicarbonate alkalinity as CaCO3			J+	LCS REC > QC limit
2321 B-2011	Total Alkalinity			J	LCS REC > QC limit MS REC < QC limit
2340 C (as HACH 8226)	Hardness as CaCO3			J	Parent/ Duplicate Failed RPD test
SW846 6010 B	Iron			J	Parent/ Duplicate Failed RPD test
SW846-6020 A	Arsenic			J	Parent/ Duplicate Failed Sensitivity test

**Table 1  
Data Qualifier Table  
BREC Wilson - October 2023 Sampling Event  
Ohio County, Kentucky**

Analytical Method	Analyte(s)	Sample Identification	Laboratory Number	Data Validation Qualifier	Reason(s) for Qualification
EPA 903.1 EPA 904.0 Total Radium	Radium 226 Radium 228 Total Radium	MW-111	3100291-31	J	Inadequate preservation Method blank detection
SW846-6020 A	Zinc			JU	Method blank detection
2320 B-2011	Bicarbonate alkalinity as CaCO3 Total Alkalinity			J+	LCS REC > QC limit (see text)
SW846-6020 A	Zinc	MW-112	3100291-33	JU	Method blank detection
EPA 903.1 EPA 904.0 Total Radium	Radium 226 Radium 228 Total Radium			J	Method blank detection
2320 B-2011	Bicarbonate alkalinity as CaCO3 Total Alkalinity			J+	LCS REC > QC limit
EPA 903.1 EPA 904.0 Total Radium	Radium 226 Radium 228 Total Radium	MW-113	3100291-35	J	Inadequate preservation Method blank detection
SW846-6020 A	Zinc			JU	Method blank detection
2320 B-2011	Bicarbonate alkalinity as CaCO3 Total Alkalinity			J+	LCS REC > QC limit
EPA 245.7 REV 2 SW846-6020 A	Mercury Zinc	MW-114	3100291-37	UJ	MS/MSD RECs < QC limits
EPA 903.1 EPA 904.0 Total Radium	Radium 226 Radium 228 Total Radium			JU	Method blank detection
2320 B-2011	Bicarbonate alkalinity as CaCO3 Total Alkalinity			J	Method blank detection
SW846-6020 A	Zinc	Well Duplicate 1	3100291-39	J+	LCS REC > QC limit (see text)
EPA 903.1 EPA 904.0 Total Radium	Radium 226 Radium 228 Total Radium			J	Method blank detection
2320 B-2011	Bicarbonate alkalinity as CaCO3 Total Alkalinity			J+	LCS REC > QC limit (see text)
2340 C (as HACH 8226)	Hardness as CaCO3	Well Duplicate 2	3100291-41	J	Parent/ Duplicate Failed RPD test
SW846 6010 B	Iron			J	Parent/ Duplicate Failed RPD test
SW846-6020 A	Arsenic			J	Parent/ Duplicate Failed Sensitivity test
EPA 903.1 EPA 904.0 Total Radium	Radium 226 Radium 228 Total Radium	Well Duplicate 2	3100291-41	J	Inadequate preservation Method blank detection
SW846-6020 A	Zinc			JU	Method blank detection
2320 B-2011	Bicarbonate alkalinity as CaCO3 Total Alkalinity			J+	LCS REC > QC limit (see text)
EPA 300.0 REV 2.1	Chloride	Field Blank	3100291-43	J-	LCS REC < QC limit
EPA 300.0 REV 2.1	Sulfate			J	LCS REC < QC limit Parent/ Duplicate Failed RPD test
EPA 300.0 REV 2.1	Chloride			UJ	LCS REC < QC limit
EPA 300.0 REV 2.1	Sulfate			UJ	LCS REC < QC limit

**Notes:**

CaCO3 = Calcium Carbonate

J = Qualified as estimated during data review

J- = Qualified as estimated potential low bias during data review

J+ = Qualified as estimated potential high bias during data review

JU = Low-level detection was qualified as nondetect during data review

LCS = Laboratory Control Sample

MS/MSD = Matrix spike/Matrix spike duplicate

MW = Monitoring Well

QC = Quality Control

REC = Percent Recovery

RPD = Relative Percent Difference

UJ = Nondetect result was qualified as estimated at the reporting limit during data review

EPA = Environmental protection agency



**Table 2**  
**Field Duplicate Comparison - Detections Only**  
**BREC Wilson - October 2023 Sampling Event**  
**Ohio County, Kentucky**

<b>Sample ID:</b> <b>Lab ID:</b> <b>Date:</b>	<b>MW110</b> <b>3100291-29</b> <b>10/2/2023</b>	<b>Well Duplicate 1</b> <b>3100291-39</b> <b>10/2/2023</b>	<b>Units</b>	<b>Meets QC</b>
Bicarbonate Alkalinity as CaCO3	147	147	mg/L	Yes
Total Alkalinity	147	147	mg/L	Yes
Hardness as CaCO3	115 J	166 J	mg/L	No, (RPD 36%)
Specific Conductance (Lab)	456	463	umhos/cm	Yes
Total Dissolved Solids	278	296	mg/L	Yes
Total Organic Carbon	1.5	1.6	mg/L	Yes
Chloride	9.7	9.1	mg/L	Yes
Fluoride	0.24	0.23	mg/L	Yes
Sulfate	68.4	65.8	mg/L	Yes
Radium 226	0.411	0.705	pCi/L	See Text
Radium 228	0.998	1.02	pCi/L	See Text
Total Radium	1.41	1.73	pCi/L	See Text
Calcium	39.3	37.7	mg/L	Yes
Iron	7.17 J	5.67 J	mg/L	No, (RPD 23%)
Magnesium	20.2	19.1	mg/L	Yes
Sodium	26	25.9	mg/L	Yes
Arsenic	0.004 J	0.0024 J	mg/L	No, (Sensitivity failed)
Barium	0.068	0.064	mg/L	Yes
Chromium	0.0016	0.0018	mg/L	Yes
Copper	0.002	0.003	mg/L	Yes
Lithium	0.005	0.005	mg/L	Yes
Lead	0.001	0.002	mg/L	Yes
Nickel	0.002	0.001	mg/L	Yes
Zinc	0.007	0.009	mg/L	Yes
Potassium	0.58	0.65	mg/L	Yes
Mercury	2.6 J	5 U	ng/L	Yes
Chemical Oxygen Demand	13 U	13	mg/L	Yes

**Table 2**  
**Field Duplicate Comparison - Detections Only**  
**BREC Wilson - October 2023 Sampling Event**  
**Ohio County, Kentucky**

Sample ID: Lab ID: Date:	MW5 3100291-11 10/2/2023	Well Duplicate 2 3100291-41 10/2/2023	Units	Meets QC
Bicarbonate Alkalinity as CaCO3	500	496	mg/L	Yes
Total Alkalinity	500	496	mg/L	Yes
Hardness as CaCO3	2960	2610	mg/L	Yes
Specific Conductance (Lab)	4090	4110	umhos/cm	Yes
Total Dissolved Solids	3680	3560	mg/L	Yes
Total Organic Carbon	1.9	1.7	mg/L	Yes
Chloride	320	331	mg/L	Yes
Sulfate	1950 J	1410 J	mg/L	No, (RPD 32%)
Radium 226	0.115	0.12	pCi/L	See Text
Radium 228	1.81	1.11	pCi/L	See Text
Total Radium	1.93	1.23	pCi/L	See Text
Calcium	573	669	mg/L	Yes
Iron	7.05	7.31	mg/L	Yes
Magnesium	266	319	mg/L	Yes
Sodium	77.1	89.5	mg/L	Yes
Arsenic	0.0028	0.0028	mg/L	Yes
Barium	0.011	0.012	mg/L	Yes
Boron	0.75	0.9	mg/L	Yes
Cobalt	0.005	0.007	mg/L	Yes
Chromium	0.002	0.0012	mg/L	Yes
Molybdenum	0.004	0.004	mg/L	Yes
Lithium	0.04	0.04	mg/L	Yes
Nickel	0.004	0.005	mg/L	Yes
Zinc	0.01	0.009	mg/L	Yes
Potassium	8.23	9.01	mg/L	Yes
Chemical Oxygen Demand	27	24	mg/L	Yes

**Notes:**

- CaCO3 = Calcium Carbonate
- ID = identification
- J = Qualified as estimated
- mg/L = milligrams per liter
- MW = Monitoring Well
- ng/L = nanograms per liter
- pCi/L = picoCurie per liter
- QC = Quality Control
- RPD = Relative Percent Difference
- U = Compound was not detected
- umhos/cm = microsiemens per centimeter

## APPENDIX E - STATISTICAL EVALUATION

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August 15, 2023

Mr. Mike Mizell  
Big Rivers Electric Corporation  
710 West 2<sup>nd</sup> Street  
Owensboro, KY 42301

Re: Statistical Evaluation of April 2023 Assessment Monitoring Groundwater Data  
D.B. Wilson Station Phase II CCR Landfill in Centertown, Kentucky  
Agency Interest ID #: 3319  
Activity I.D. #: AIN2014001

Dear Mr. Mizell:

This letter presents the results of the statistical evaluation of analytical data from the April 2023 assessment monitoring event performed at the D.B. Wilson Station Phase II CCR Landfill in Centertown, Kentucky in accordance with the requirements of the U.S. Environmental Protection Agency's *Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments* (40 Code of Federal Regulations [CFR] Part 257, Subpart D). This letter also presents a comparison of the April 2023 sampling results to groundwater protection standards (GWPSs). The GWPSs for the groundwater monitoring network were reviewed and updated as part of the statistical evaluation completed for the April 2023 sampling event and are presented on Table 1. These GWPSs will continue to be reviewed and updated as additional data are collected. A comparison of the April 2023 data to the updated GWPSs is presented on Table 2. The statistical evaluation presented herein was performed in accordance with the *Update to Certification of Statistical Method for Evaluating Groundwater in accordance with 40 CFR § 257.93 at D.B Wilson Station Phase II CC Landfill in Centertown, Kentucky* dated May 25, 2022.

In April 2023, the Phase II CCR Landfill Groundwater Monitoring Well Network was sampled for Appendix III and Appendix IV parameters per the requirements of 40 CFR §257.95(d)(1). Interwell prediction limit statistical analyses were performed for these well/constituent pairs and are discussed subsequently. GWPSs were also developed in accordance with 40 CFR §257.95(h) which describes a GWPS as the higher value between a determined background concentration for an analyte and the established maximum concentration limit (MCL) or the GWPS criteria for select Appendix IV parameters without an MCL presented in 40 CFR §257.95(h)(2). This letter presents the results of the statistical evaluation of the April 2023 assessment monitoring event for inclusion in the Phase II CCR Landfill Operating Record.

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## **Statistical Evaluation of Phase II CCR Landfill Compliance Monitoring Well Network Evaluation**

A summary of the interwell prediction limit evaluation was performed to compare the concentrations of Appendix III and Appendix IV parameters observed in April 2023 CCR compliance (downgradient) monitoring wells MW-5, MW-6, MW-7, and MW-10 to calculated prediction limits (i.e., background limits) that were established using data collected from April of 2016 through April of 2023 from upgradient monitoring well MW-8. Note, any data qualified as rejected during the data review were excluded from the statistical analysis. Certain parameters were detected in April 2023 at concentrations above the calculated background limits (equivalent to the MW-8 prediction limits), and a summary is included in Attachment 1. This included the following well/constituent pairs for downgradient compliance monitoring wells with statistically significant increases (SSIs) above calculated background limits:

### Appendix III Parameters:

- Boron (MW-5, MW-6, MW-7, and MW-10)
- Calcium (MW-5, MW-6, MW-7, and MW-10)
- Chloride (MW-5, MW-6, MW-7, and MW-10)
- Sulfate (MW-5 and MW-7)
- Total Dissolved Solids (TDS) (MW-5, MW-6, MW-7, and MW-10)

### Appendix IV Parameters:

- Cobalt (MW-10)
- Lithium (MW-5 and MW-6)

Results of exceedances of background were generally consistent with the 2019 through September 2022 statistical results. The reported April 2023 SSIs for sulfate (MW-5 and MW-7) were not present in September 2022. All other above-noted Appendix III SSIs for April 2023 were also present in the September 2022 statistical analysis. Likewise, the Appendix IV SSIs for cobalt and/or lithium continue to occur at downgradient compliance monitoring wells.

The Appendix IV constituents with SSIs (cobalt and lithium) were further evaluated to determine whether they are present at statistically significant levels (SSLs) over the GWPS by calculating the lower confidence limit (LCL) at 95% confidence for each well and constituent using the Baseline, Detection, and Assessment monitoring results collected to date from each monitoring well. For a constituent to be present at an SSL over the GWPS, its LCL must be greater than the GWPS. The comparison of the calculated LCLs with the GWPSs for cobalt and lithium at

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downgradient compliance monitoring wells MW-5, MW-6, MW-7, and MW-10 resulted in the following well/constituent pairs with SSLs above the GWPS:

- Cobalt (MW-10)
- Lithium (MW-6)

The LCLs for the remaining well/constituent pairs for cobalt and lithium are less than the GWPS and thus are not considered SSLs. Attachment 1 provides a summary of the calculated LCLs in comparison with the GWPSs. Results of SSLs above the GWPSs were generally consistent with the 2022 results. Cobalt (MW-10) was reported as an SSL in both the September 2022 and April 2022 events. The reported SSL above GWPS for lithium (MW-6) was not identified as an SSL above the GWPS in September 2022. However, lithium (MW-6) was reported in April 2022 as an SSL.

Given that certain Appendix III and IV constituents were observed within the Phase II CCR Landfill groundwater monitoring network at concentrations above their respective calculated background limit and/or the LCL for certain Appendix IV constituents was greater than the corresponding GWPSs, these results do not warrant a transition to detection monitoring per the requirements of 40 CFR §257.95(f) and assessment monitoring will continue for the next second half semiannual monitoring event in 2023.

Sincerely,

Burns & McDonnell

A handwritten signature in blue ink that reads "Chris Hوجلund".

Chris Hوجلund, PG  
Project Manager

Attachments:

- Table 1 – Calculated Background and Groundwater Protection Standards for Groundwater
- Table 2 – Summary of April 2023 Analytical Results



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Big Rivers Electric Corporation  
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Attachment 1 – Sanitas™ Statistical Outputs for Phase II CCR Landfill Compliance Monitoring Network

cc: Diana Merritt, BREC Wilson Station



## **TABLES**

**Table 1**  
**Calculated Background and Groundwater Protection Standards for Groundwater**  
**D.B. Wilson Station Phase II CCR Landfill in Centertown, Kentucky**

Detection Constituents (Appendix III)	Units	Background*	MCL	40 CFR §257.95(h)(2) Criteria	Groundwater Protection Standard
Boron	mg/L	0.0518	--	--	--
Calcium	mg/L	349	--	--	--
pH (field)	SU	4.67 - 6.84	--	--	--
TDS	mg/L	1810	--	--	--
Chloride	mg/L	5.59	--	--	--
Fluoride	mg/L	1.21	4	--	--
Sulfate	mg/L	2180	--	--	--
Assessment Constituents (Appendix IV)	Units	Background*	MCL	40 CFR §257.95(h)(2) Criteria	Groundwater Protection Standard
Antimony	mg/L	0.0025	0.006	--	0.006
Arsenic	mg/L	0.0144	0.01	--	0.0144
Barium	mg/L	0.07	2	--	2
Beryllium	mg/L	0.000002	0.004	--	0.004
Cadmium	mg/L	0.0005	0.005	--	0.005
Chromium	mg/L	0.0224	0.1	--	0.1
Cobalt	mg/L	0.009	--	0.006	0.009
Fluoride	mg/L	1.21	4	--	4
Lead	mg/L	0.012	--	0.015	0.015
Lithium	mg/L	0.0235	--	0.04	0.04
Mercury	mg/L	0.000005	0.002	--	0.002
Molybdenum	mg/L	0.0187	--	0.1	0.1
Combined Radium 226 and 228**	pCi/L	2.94	5	--	5
Selenium	mg/L	0.0015	0.05	--	0.05
Thallium	mg/L	0.001	0.002	--	0.002

**Notes:**

\*Background concentrations were determined utilizing interwell prediction limits (Attachment 1). Upgradient Monitoring Well MW-8 was used to calculate background concentrations. This included background data ranging from April 2016 through April 2023. For pH, background is between those values presented.

\*\*Combined radium is reported with an uncertainty range. However, this range cannot be incorporated into statistical calculations as it varies per result and is not a standard value. Therefore, to maintain consistency in reporting these results, the reported laboratory concentration was used for the statistical analyses.

- CFR - Code of Federal Regulations
- mg/L - milligrams per Liter
- pCi/L - picocuries per Liter
- MCL - Maximum Contaminant Level
- SU - standard units

Table 2  
 Summary of April 2023 Groundwater Results  
 D.B. Wilson Station Phase II CCR Landfill in Centertown, Kentucky

Analytical Method	Analyte	Sample Location: Sample Date: Laboratory ID(s): Radium/Radium only Notes(s):	Unit	Calculated Background <sup>1</sup>	GWPS <sup>2</sup>	MW-5	MW-6	MW-7	MW-8	MW-10
						4/25/2023 3043172-01	4/25/2023 3043173-01 Field Duplicate 1 <sup>3</sup>	4/25/2023 3043174-01	4/26/2023 3043175-01 Background Well	4/26/2023 3043186-01
Appendix III - Detection Monitoring										
6010B	Boron		mg/L	0.0518	--	0.75	0.87	2.85 D1	<0.1 U	0.66
300.0 REV 2.1	Calcium		mg/L	349	--	635 D1	473 D1	464 D1	218 D1	448 D1
300.0 REV 2.1	Chloride		mg/L	5.59	--	92.7 D2	26.1 D2, J	94.5	4.2 D2	16.5 D2
300.0 REV 2.1	Fluoride		mg/L	1.21	4.0	<0.2 V1, U	<0.2 V1, U	0.25	<2 D2, V1, U	<0.2 U
In Situ	Sulfate		mg/L	2180	--	4710	1470 D2, J	2300 D, M3	721 D2, J	536 D2
2540 C-2015	pH (Field Measurement)		su	4.67 - 6.84	--	6.47	6.45	6.55	6.41	5.98
	Total Dissolved Solids		mg/L	1810	--	3650	2430	2540	1110	3100
Appendix IV - Assessment Monitoring										
6020A	Antimony		mg/L	0.0025	0.006	<0.005 U	<0.005 U	<0.005 U	<0.005 U	<0.005 U
6020A	Arsenic		mg/L	0.0144	0.0144	0.005	0.005	0.0037	0.0047	0.0096 J
6020A	Berium		mg/L	0.07	2.0	0.011	0.012	0.012	0.018	0.009
6020A	Beryllium		mg/L	0.000002	0.004	<0.002 U	<0.002 U	<0.002 U	<0.002 U	<0.002 U
6020A	Cadmium		mg/L	0.0005	0.005	<0.001 U	<0.001 U	<0.001 U	<0.001 U	<0.001 U
6020A	Chromium		mg/L	0.0224	0.1	<0.002 U	0.0008 J	0.0013 J	0.0008 J	<0.002 U
6020A	Cobalt		mg/L	0.009	0.009	0.007	0.007	<0.004 U	<0.004 U	0.116
300.0 REV 2.1	Fluoride		mg/L	1.21	4	<0.2 V1, U	<0.2 V1, U	0.25	<2 D2, V1, U	<0.2 U
6020A	Lead		mg/L	0.012	0.015	<0.002 U	<0.002 U	<0.002 U	<0.002 U	<0.002 U
6020A	Lithium		mg/L	0.0235	0.04	0.03	0.04	0.02	0.008 J	0.009 J
245.7 REV 2	Mercury		mg/L	0.000005	0.002	<0.000005 U	<0.000005 U	<0.000005 U	<0.000005 U	<0.000005 U
6020A	Molybdenum		mg/L	0.0187	0.1	0.003 J	0.006 J	0.006 J	0.01	<0.01 U
903.1/904.0	Combined Radium 226 and 228 <sup>4</sup>		pCi/l	2.94	5	1.04 J	1.64 J	0.924 J	1.66 J	1.20 J
6020A	Selenium		mg/L	0.0015	0.05	<0.003 U	<0.003 U	<0.003 U	<0.003 U	<0.003 U
6020A	Thallium		mg/L	0.001	0.002	<0.002 U	<0.002 U	<0.002 U	<0.002 U	<0.002 U

Notes

1 - Background concentrations were determined utilizing interval prediction limits. Upgradient well MW-8 was used to determine these background concentrations. This included data ranging from April 2016 through April 2023. For pH, background is between these values presented.

2 - GWPSs were developed in accordance with §257.95(h).

3 - The highest concentration is reported between associated field duplicate samples for MW-6 (Duplicate 1) and MW-110 (Duplicate 2).

4 - Combined radium is reported with an associate range. However, this range cannot be incorporated into statistical calculations as it varies per result and is not a standard value. Therefore, to maintain consistency in reporting these results, the reported laboratory concentration was used for the statistical analysis.

**Bold** - Analyte detected above calculated background concentration.

Parameters were detected in wells located downgradient of the CCR Landfill at a concentration greater than the GWPSs.

CCR - coal combustion residuals

CCV - continuing calibration verification

D - Results reported from dilution

D1 - Sample required dilution due to high concentration of target analyte

D2 - Sample required dilution due to matrix interference

GWPS - Groundwater Protection Standard

J (+/-) - estimated concentration (bias indicator (high + / low -))

M1 - Matrix spike recovery was high, the method control sample recovery was acceptable.

M2 - Matrix spike recovery was low, the method control sample recovery was acceptable.

M3 = The accuracy of the spike recovery value is reduced since the analyte concentration in the sample is disproportionate to spike level. The method control sample recovery was acceptable.

mg/L - milligram per liter

pCi/L - picocurie per liter

su - standard unit

U - Nondetect at the identified concentration

UU - Nondetect result was qualified as estimated at the reporting limit during data review.

V1 - CCV recovery was above method acceptance limits. This target analyte not detected in the sample.

Table 2  
Summary of April 2023 Groundwater Results  
D.B. Wilson Station Phase II CCR Landfill in Centertown, Kentucky

Analytical Method	Sample Location: Laboratory / D(s): All analytes excl. Radium/Radium only	Unit	Calculated Background <sup>1</sup>	GWPS <sup>2</sup>	Characterization Monitoring Wells					
					MW-4D 4/26/2023 3043171-01	MW-10D 4/24/2023 3043162-01	MW-102 4/25/2023 3043159-01	MW-104 4/25/2023 3043167-01	MW-105R 4/25/2023 3043161-01	MW-110 4/25/2023 3043163-01
Appendix III - Detection Monitoring										
6010B	Boron	mg/L	0.0518	--	9.48 D1	2.62 D1, M3	<0.1 U	<0.1 U	<0.1 U	<0.1 U
300.0 REV 2.1	Calcium	mg/L	349	--	721 D1	553 D1, M3	84.9 D1	196 D1	196 D1	40.2 D1
300.0 REV 2.1	Chloride	mg/L	5.59	--	289 D2	36.2 D2	14.8 D2	11.2	11.2	11.3
300.0 REV 2.1	Fluoride	mg/L	1.21	4.0	<2 D2, U	0.47	0.32	0.2	0.2	0.27
300.0 REV 2.1	Sulfate	mg/L	2180	--	641 D2	389 D2	150 D2	769 D	769 D	77.7
In Situ	pH (Field Measurement)	su	4.67 - 6.84	--	6.46	6.44	6.84	6.84	6.84	6.71
2540 C-2015	Total Dissolved Solids	mg/L	1810	--	3590	2510	808	1620	1440	420
Appendix IV - Assessment Monitoring										
6020A	Antimony	mg/L	0.0025	0.006	<0.005 U	<0.005 U	<0.005 U	<0.005 U	<0.005 U	<0.005 U
6020A	Arsenic	mg/L	0.0144	0.0144	0.0045	0.0025	0.0037	0.0008 J	0.0008 J	0.0023
6020A	Barium	mg/L	0.07	2.0	0.021	0.017	0.046	0.025	0.025	0.087
6020A	Beryllium	mg/L	0.000002	0.004	<0.002 U	<0.002 U	<0.002 U	<0.002 U	<0.002 U	<0.002 U
6020A	Cadmium	mg/L	0.0005	0.005	<0.001 U	<0.001 U	<0.001 U	<0.001 U	<0.001 U	<0.001 U
6020A	Chromium	mg/L	0.0224	0.1	0.001 J	<0.002 U	0.0006 J	<0.002 U	<0.002 U	<0.002 U
6020A	Cobalt	mg/L	0.009	0.009	0.022	0.004	<0.004 U	<0.004 U	<0.004 U	<0.004 U
300.0 REV 2.1	Fluoride	mg/L	1.21	4	<2 D2, U	0.47	0.32	0.2	0.2	0.27
6020A	Lead	mg/L	0.012	0.015	0.0006 J	<0.002 U	<0.002 U	<0.002 U	<0.002 U	<0.002 U
6020A	Lithium	mg/L	0.0235	0.04	0.12	0.06 J, M2	<0.02 U	0.03	0.03	<0.02 U
245.7 REV 2	Mercury	mg/L	0.000005	0.002	<0.000005 U	<0.000005 U	<0.000005 U	<0.000005 U	<0.000005 U	<0.000005 U
6020A	Molybdenum	mg/L	0.0187	0.1	0.008 J	0.006 J	<0.01 U	<0.01 U	<0.01 U	<0.01 U
903.1/904.0	Combined Radium 226 and 228 <sup>3</sup>	pCi/l	2.94	5	1.22 J	0.465 J	0.313 J	1.72 J	2.49 J	1.00 J
6020A	Selenium	mg/L	0.0015	0.05	0.001 J	<0.003 U	<0.003 U	<0.003 U	<0.003 U	<0.003 U
6020A	Thallium	mg/L	0.001	0.002	0.0001 J	<0.002 U	<0.002 U	<0.002 U	<0.002 U	<0.002 U

Notes

- Background concentrations were determined utilizing interwell prediction limits. Upgradient well MW-8 was used to determine these background concentrations. This included data ranging from April 2016 through April 2023. For pH, background is between these values presented.
- GWPSs were developed in accordance with §257.95(h).
- The highest concentration is reported between associated field duplicate samples for MW-6 (Duplicate 1) and MW-110 (Duplicate 2).
- Combined radium is reported with an associate range. However, this range cannot be incorporated into statistical calculations as it varies per result and is not a standard value. Therefore, to maintain consistency in reporting these results, the reported laboratory concentration was used for the statistical analyses.

**bold** - Analyte detected above calculated background concentration.  
Parameters were detected in wells located downgradient of the CCR Landfill at a concentration greater than the GWPSs.

CCR - coal combustion residuals

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D - Results reported from dilution

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GWPS - Groundwater Protection Standard

J (+/-) - estimated concentration (bias indicator (high +/- / low -))

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mg/L - milligram per liter

pCi/L - picocurie per liter

su - standard unit

U - Non-detect at the identified concentration

UJ - Non-detect result was qualified as estimated at the reporting limit during data review.

V1 - CCV recovery was above method acceptance limits. This target analyte not detected in the sample.

Table 2  
 Summary of April 2023 Groundwater Results  
 D.B. Wilson Station Phase II CCR Landfill in Centertown, Kentucky

Analytical Method	Analyte	Sample Location: Sample Date: Laboratory ID(s): Notes(s):	Calculated Background	GWPS <sup>2</sup>	Characterization Monitoring Wells					
					MW-111 4/24/2023 3045164-01	MW-112 4/24/2023 3045165-01	MW-113 4/24/2023 3045166-01	MW-114 4/24/2023 3045160-01		
<b>Appendix III - Detection Monitoring</b>										
6010B	Boron	mg/L	0.0518	--	0.23	0.14	<0.1 U	<0.1 U	<0.1 U	<0.1 U
300.0 REV 2.1	Calcium	mg/L	349	--	552 D1	246 D1	219 D1	106 D1, M3	106 D1, M3	
300.0 REV 2.1	Chloride	mg/L	5.59	--	<10 D2, U	<5 D2, U	12.3 D2	28.0 D2	28.0 D2	
300.0 REV 2.1	Fluoride	mg/L	1.21	4.0	0.27	<0.2 U	<0.2 U	0.25	0.25	
300.0 REV 2.1	Sulfate	mg/L	2180	--	399 D2	157 D2	228 D2	132 D2	132 D2	
2540 C-2015	pH (Field Measurement)	su	4.67 - 6.84	--	7.24	6.19	7.25	7.83	7.83	
	Total Dissolved Solids	mg/L	1810	--	3220	1000	1650	1150	1150	
<b>Appendix IV - Assessment Monitoring</b>										
6020A	Antimony	mg/L	0.0025	0.006	<0.005 U	<0.005 U	<0.005 U	<0.005 U	<0.005 U	
6020A	Arsenic	mg/L	0.0144	0.0144	0.024	0.0015	<b>0.0278</b>	0.002	0.002	
6020A	Barium	mg/L	0.07	2.0	0.018	0.027	0.022	0.053	0.053	
6020A	Beryllium	mg/L	0.000002	0.004	<0.002 U	<0.002 U	<0.002 U	<0.002 U	<0.002 U	
6020A	Cadmium	mg/L	0.0005	0.005	<0.001 U	<0.001 U	<0.001 U	<0.001 U	<0.001 U	
6020A	Chromium	mg/L	0.0224	0.1	<0.002 U	<0.002 U	<0.002 U	<0.002 U	<0.002 U	
6020A	Cobalt	mg/L	0.009	0.009	<b>0.011</b>	0.005	0.006	<0.004 U	<0.004 U	
300.0 REV 2.1	Fluoride	mg/L	1.21	4	0.27	<0.2 U	<0.2 U	0.25	0.25	
6020A	Lead	mg/L	0.012	0.015	<0.002 U	<0.002 U	<0.002 U	<0.002 U	<0.002 U	
6020A	Lithium	mg/L	0.0235	0.04	<b>0.03</b>	0.01 J	<b>0.03</b>	0.02 M1	0.02 M1	
245.7 REV 2	Mercury	mg/L	0.000005	0.002	<0.000005 U	<0.000005 U	<0.000005 U	<0.000005 U	<0.000005 U	
6020A	Molybdenum	mg/L	0.0187	0.1	0.003 J	0.002 J	0.003 J	0.004 J	0.004 J	
903.1/904.0	Combined Radium 226 and 228 <sup>4</sup>	pCi/l	2.94	5	0.913 J	0.753 J	1.60 J	2.04 J	2.04 J	
6020A	Selenium	mg/L	0.0015	0.05	<0.003 U	<0.003 U	<0.003 U	<0.003 U	<0.003 U	
6020A	Thallium	mg/L	0.001	0.002	<0.002 U	<0.002 U	<0.002 U	<0.002 U	<0.002 U	

**Notes**

- 1 - Background concentrations were determined utilizing interwell prediction limits. Upgradient well MW-8 was used to determine these background concentrations. This included data ranging from April 2016 through April 2023. For pH, background is between those values presented.
- 2 - GWPSs were developed in accordance with §257.95(f).
- 3 - The highest concentration is reported between associated field duplicate samples for MW-6 (Duplicate 1) and MW-110 (Duplicate 2).
- 4 - Combined radium is reported with an associate range. However, this range cannot be incorporated into statistical calculations as it varies per result and is not a standard value. Therefore, to maintain consistency in reporting these results, the reported laboratory concentration was used for the statistical analyses.

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 Parameters were detected in wells located downgradient of the CCR Landfill at a concentration greater than the GWPS.

- CCR - coal combustion residuals
- CCV - continuing calibration verifications
- D - Results reported from dilution
- D1 - Sample required dilution due to high concentration of target analyte
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- GWPS - Groundwater Protection Standard
- J (+/-) - estimated concentration (bias indicator [high + / low -])
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- mg/L - milligram per liter
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- su - standard unit
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- V1 - CCV recovery was above method acceptance limits. This target analyte not detected in the sample.

**ATTACHMENT 1 - SANITAS™ STATISTICAL OUTPUTS FOR PHASE II CCR  
LANDFILL COMPLIANCE MONITORING WELL NETWORK**

# Interwell Prediction Limit

Big Rivers Electric Corp. Client: Burns & McDonnell Data: BREC\_GW\_v2 Printed 7/2/2023, 1:57 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg.N	%NDs	Transform	Alpha	Method
Antimony (mg/L)	MW-5	0.0025	n/a	4/25/2023	0.0025ND	No	19	63.16	n/a	0.04664	NP Inter (NDs)
Antimony (mg/L)	MW-6	0.0025	n/a	4/25/2023	0.0025ND	No	19	63.16	n/a	0.04664	NP Inter (NDs)
Antimony (mg/L)	MW-7	0.0025	n/a	4/25/2023	0.0025ND	No	19	63.16	n/a	0.04664	NP Inter (NDs)
Antimony (mg/L)	MW-10	0.0025	n/a	4/26/2023	0.0025ND	No	19	63.16	n/a	0.04664	NP Inter (NDs)
Arsenic (ug/L)	MW-5	14.4	n/a	4/25/2023	5	No	20	0	n/a	0.04456	NP Inter (normality)
Arsenic (ug/L)	MW-6	14.4	n/a	4/25/2023	5	No	20	0	n/a	0.04456	NP Inter (normality)
Arsenic (ug/L)	MW-7	14.4	n/a	4/25/2023	3.7	No	20	0	n/a	0.04456	NP Inter (normality)
Arsenic (ug/L)	MW-10	14.4	n/a	4/26/2023	0.6J	No	20	0	n/a	0.04456	NP Inter (normality)
Barium (ug/L)	MW-5	70	n/a	4/25/2023	11	No	19	0	n/a	0.04664	NP Inter (normality)
Barium (ug/L)	MW-6	70	n/a	4/25/2023	12	No	19	0	n/a	0.04664	NP Inter (normality)
Barium (ug/L)	MW-7	70	n/a	4/25/2023	12	No	19	0	n/a	0.04664	NP Inter (normality)
Barium (ug/L)	MW-10	70	n/a	4/26/2023	9	No	19	0	n/a	0.04664	NP Inter (normality)
Beryllium (ug/L)	MW-5	0.002	n/a	4/25/2023	0.001ND	No	18	100	n/a	0.04893	NP Inter (NDs)
Beryllium (ug/L)	MW-6	0.002	n/a	4/25/2023	0.001ND	No	18	100	n/a	0.04893	NP Inter (NDs)
Beryllium (ug/L)	MW-7	0.002	n/a	4/25/2023	0.001ND	No	18	100	n/a	0.04893	NP Inter (NDs)
Beryllium (ug/L)	MW-10	0.002	n/a	4/26/2023	0.001ND	No	18	100	n/a	0.04893	NP Inter (NDs)
<b>Boron (ug/L)</b>	<b>MW-5</b>	<b>51.8</b>	<b>n/a</b>	<b>4/25/2023</b>	<b>750</b>	<b>Yes</b>	<b>20</b>	<b>45</b>	<b>n/a</b>	<b>0.04456</b>	<b>NP Inter (normality)</b>
<b>Boron (ug/L)</b>	<b>MW-6</b>	<b>51.8</b>	<b>n/a</b>	<b>4/25/2023</b>	<b>870</b>	<b>Yes</b>	<b>20</b>	<b>45</b>	<b>n/a</b>	<b>0.04456</b>	<b>NP Inter (normality)</b>
<b>Boron (ug/L)</b>	<b>MW-7</b>	<b>51.8</b>	<b>n/a</b>	<b>4/25/2023</b>	<b>2850</b>	<b>Yes</b>	<b>20</b>	<b>45</b>	<b>n/a</b>	<b>0.04456</b>	<b>NP Inter (normality)</b>
<b>Boron (ug/L)</b>	<b>MW-10</b>	<b>51.8</b>	<b>n/a</b>	<b>4/26/2023</b>	<b>660</b>	<b>Yes</b>	<b>20</b>	<b>45</b>	<b>n/a</b>	<b>0.04456</b>	<b>NP Inter (normality)</b>
Cadmium (ug/L)	MW-5	0.5	n/a	4/25/2023	0.5ND	No	18	88.89	n/a	0.04893	NP Inter (NDs)
Cadmium (ug/L)	MW-6	0.5	n/a	4/25/2023	0.5ND	No	18	88.89	n/a	0.04893	NP Inter (NDs)
Cadmium (ug/L)	MW-7	0.5	n/a	4/25/2023	0.5ND	No	18	88.89	n/a	0.04893	NP Inter (NDs)
Cadmium (ug/L)	MW-10	0.5	n/a	4/26/2023	0.5ND	No	18	88.89	n/a	0.04893	NP Inter (NDs)
<b>Calcium (ug/L)</b>	<b>MW-5</b>	<b>349000</b>	<b>n/a</b>	<b>4/25/2023</b>	<b>635000</b>	<b>Yes</b>	<b>20</b>	<b>0</b>	<b>n/a</b>	<b>0.04456</b>	<b>NP Inter (normality)</b>
<b>Calcium (ug/L)</b>	<b>MW-6</b>	<b>349000</b>	<b>n/a</b>	<b>4/25/2023</b>	<b>461000</b>	<b>Yes</b>	<b>20</b>	<b>0</b>	<b>n/a</b>	<b>0.04456</b>	<b>NP Inter (normality)</b>
<b>Calcium (ug/L)</b>	<b>MW-7</b>	<b>349000</b>	<b>n/a</b>	<b>4/25/2023</b>	<b>464000</b>	<b>Yes</b>	<b>20</b>	<b>0</b>	<b>n/a</b>	<b>0.04456</b>	<b>NP Inter (normality)</b>
<b>Calcium (ug/L)</b>	<b>MW-10</b>	<b>349000</b>	<b>n/a</b>	<b>4/26/2023</b>	<b>448000</b>	<b>Yes</b>	<b>20</b>	<b>0</b>	<b>n/a</b>	<b>0.04456</b>	<b>NP Inter (normality)</b>
<b>Chloride (mg/L)</b>	<b>MW-5</b>	<b>5.59</b>	<b>n/a</b>	<b>4/25/2023</b>	<b>92.7</b>	<b>Yes</b>	<b>20</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param Inter</b>
<b>Chloride (mg/L)</b>	<b>MW-6</b>	<b>5.59</b>	<b>n/a</b>	<b>4/25/2023</b>	<b>10.9</b>	<b>Yes</b>	<b>20</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param Inter</b>
<b>Chloride (mg/L)</b>	<b>MW-7</b>	<b>5.59</b>	<b>n/a</b>	<b>4/25/2023</b>	<b>94.5</b>	<b>Yes</b>	<b>20</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param Inter</b>
<b>Chloride (mg/L)</b>	<b>MW-10</b>	<b>5.59</b>	<b>n/a</b>	<b>4/26/2023</b>	<b>16.5</b>	<b>Yes</b>	<b>20</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param Inter</b>
Chromium (ug/L)	MW-5	22.4	n/a	4/25/2023	0.3ND	No	19	36.84	n/a	0.04664	NP Inter (normality)
Chromium (ug/L)	MW-6	22.4	n/a	4/25/2023	0.8J	No	19	36.84	n/a	0.04664	NP Inter (normality)
Chromium (ug/L)	MW-7	22.4	n/a	4/25/2023	1.3J	No	19	36.84	n/a	0.04664	NP Inter (normality)
Chromium (ug/L)	MW-10	22.4	n/a	4/26/2023	0.3ND	No	19	36.84	n/a	0.04664	NP Inter (normality)
Cobalt (ug/L)	MW-5	9	n/a	4/25/2023	7	No	19	42.11	n/a	0.04664	NP Inter (normality)
Cobalt (ug/L)	MW-6	9	n/a	4/25/2023	7	No	19	42.11	n/a	0.04664	NP Inter (normality)
Cobalt (ug/L)	MW-7	9	n/a	4/25/2023	2ND	No	19	42.11	n/a	0.04664	NP Inter (normality)
<b>Cobalt (ug/L)</b>	<b>MW-10</b>	<b>9</b>	<b>n/a</b>	<b>4/26/2023</b>	<b>116</b>	<b>Yes</b>	<b>19</b>	<b>42.11</b>	<b>n/a</b>	<b>0.04664</b>	<b>NP Inter (normality)</b>
Fluoride (mg/L)	MW-5	1.21	n/a	4/25/2023	1ND	No	21	9.524	n/a	0.04265	NP Inter (normality)
Fluoride (mg/L)	MW-6	1.21	n/a	4/25/2023	1ND	No	21	9.524	n/a	0.04265	NP Inter (normality)
Fluoride (mg/L)	MW-7	1.21	n/a	4/25/2023	0.25	No	21	9.524	n/a	0.04265	NP Inter (normality)
Fluoride (mg/L)	MW-10	1.21	n/a	4/26/2023	1ND	No	21	9.524	n/a	0.04265	NP Inter (normality)
Lead (ug/L)	MW-5	12	n/a	4/25/2023	1ND	No	19	68.42	n/a	0.04664	NP Inter (NDs)
Lead (ug/L)	MW-6	12	n/a	4/25/2023	1ND	No	19	68.42	n/a	0.04664	NP Inter (NDs)
Lead (ug/L)	MW-7	12	n/a	4/25/2023	1ND	No	19	68.42	n/a	0.04664	NP Inter (NDs)
Lead (ug/L)	MW-10	12	n/a	4/26/2023	1ND	No	19	68.42	n/a	0.04664	NP Inter (NDs)
<b>Lithium (ug/L)</b>	<b>MW-5</b>	<b>23.5</b>	<b>n/a</b>	<b>4/25/2023</b>	<b>30</b>	<b>Yes</b>	<b>20</b>	<b>20</b>	<b>No</b>	<b>0.01</b>	<b>Param Inter</b>
<b>Lithium (ug/L)</b>	<b>MW-6</b>	<b>23.5</b>	<b>n/a</b>	<b>4/25/2023</b>	<b>40</b>	<b>Yes</b>	<b>20</b>	<b>20</b>	<b>No</b>	<b>0.01</b>	<b>Param Inter</b>

# Interwell Prediction Limit

Big Rivers Electric Corp. Client: Burns & McDonnell Data: BREC\_GW\_v2 Printed 7/2/2023, 1:57 PM

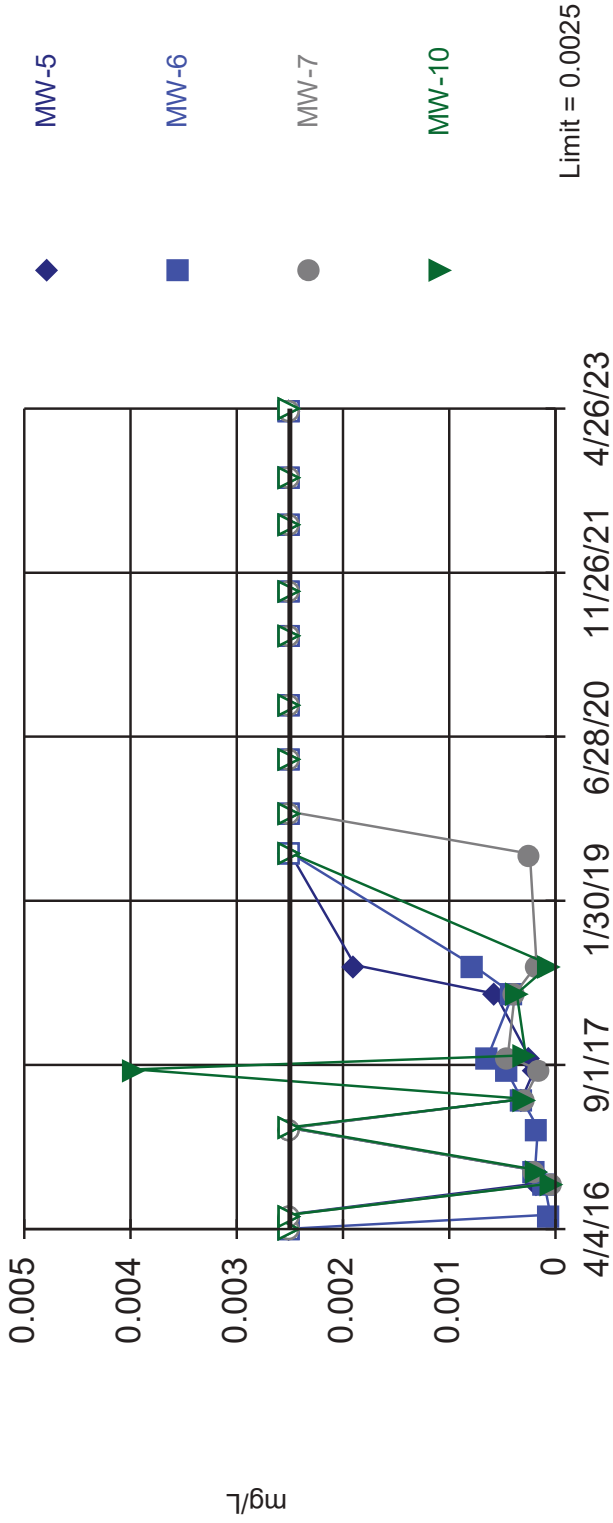
Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg.N	%NDs	Transform	Alpha	Method
Lithium (ug/L)	MW-7	23.5	n/a	4/25/2023	20	No	20	20	No	0.01	Param Inter
Lithium (ug/L)	MW-10	23.5	n/a	4/26/2023	9J	No	20	20	No	0.01	Param Inter
Mercury (ug/L)	MW-5	0.005	n/a	4/25/2023	0.0025ND	No	18	100	n/a	0.04893	NP Inter (NDs)
Mercury (ug/L)	MW-6	0.005	n/a	4/25/2023	0.0025ND	No	18	100	n/a	0.04893	NP Inter (NDs)
Mercury (ug/L)	MW-7	0.005	n/a	4/25/2023	0.0025ND	No	18	100	n/a	0.04893	NP Inter (NDs)
Mercury (ug/L)	MW-10	0.005	n/a	4/26/2023	0.0025ND	No	18	100	n/a	0.04893	NP Inter (NDs)
Molybdenum (ug/L)	MW-5	18.7	n/a	4/25/2023	3J	No	20	0	n/a	0.04456	NP Inter (normality)
Molybdenum (ug/L)	MW-6	18.7	n/a	4/25/2023	6J	No	20	0	n/a	0.04456	NP Inter (normality)
Molybdenum (ug/L)	MW-7	18.7	n/a	4/25/2023	6J	No	20	0	n/a	0.04456	NP Inter (normality)
Molybdenum (ug/L)	MW-10	18.7	n/a	4/26/2023	5ND	No	20	0	n/a	0.04456	NP Inter (normality)
pH [Field] (SU)	MW-5	6.84	4.67	4/25/2023	6.47	No	21	0	n/a	0.0853	NP Inter (normality)
pH [Field] (SU)	MW-6	6.84	4.67	4/25/2023	6.45	No	21	0	n/a	0.0853	NP Inter (normality)
pH [Field] (SU)	MW-7	6.84	4.67	4/25/2023	6.55	No	21	0	n/a	0.0853	NP Inter (normality)
pH [Field] (SU)	MW-10	6.84	4.67	4/25/2023	5.98	No	21	0	n/a	0.0853	NP Inter (normality)
Radium 226 + 228 (pCi/L)	MW-5	2.94	n/a	4/25/2023	1.04	No	19	0	n/a	0.04664	NP Inter (normality)
Radium 226 + 228 (pCi/L)	MW-6	2.94	n/a	4/25/2023	1.64	No	19	0	n/a	0.04664	NP Inter (normality)
Radium 226 + 228 (pCi/L)	MW-7	2.94	n/a	4/25/2023	0.924	No	19	0	n/a	0.04664	NP Inter (normality)
Radium 226 + 228 (pCi/L)	MW-10	2.94	n/a	4/26/2023	1.2	No	19	0	n/a	0.04664	NP Inter (normality)
Selenium (ug/L)	MW-5	1.5	n/a	4/25/2023	1.5ND	No	19	89.47	n/a	0.04664	NP Inter (NDs)
Selenium (ug/L)	MW-6	1.5	n/a	4/25/2023	1.5ND	No	19	89.47	n/a	0.04664	NP Inter (NDs)
Selenium (ug/L)	MW-7	1.5	n/a	4/25/2023	1.5ND	No	19	89.47	n/a	0.04664	NP Inter (NDs)
Selenium (ug/L)	MW-10	1.5	n/a	4/26/2023	1.5ND	No	19	89.47	n/a	0.04664	NP Inter (NDs)
Sulfate (mg/L)	MW-5	2180	n/a	4/25/2023	4710	Yes	20	0	n/a	0.04456	NP Inter (normality)
Sulfate (mg/L)	MW-6	2180	n/a	4/25/2023	432	No	20	0	n/a	0.04456	NP Inter (normality)
Sulfate (mg/L)	MW-7	2180	n/a	4/25/2023	2300	Yes	20	0	n/a	0.04456	NP Inter (normality)
Sulfate (mg/L)	MW-10	2180	n/a	4/26/2023	536	No	20	0	n/a	0.04456	NP Inter (normality)
Thallium (ug/L)	MW-5	1	n/a	4/25/2023	1ND	No	19	84.21	n/a	0.04664	NP Inter (NDs)
Thallium (ug/L)	MW-6	1	n/a	4/25/2023	1ND	No	19	84.21	n/a	0.04664	NP Inter (NDs)
Thallium (ug/L)	MW-7	1	n/a	4/25/2023	1ND	No	19	84.21	n/a	0.04664	NP Inter (NDs)
Thallium (ug/L)	MW-10	1	n/a	4/26/2023	1ND	No	19	84.21	n/a	0.04664	NP Inter (NDs)
Total Dissolved Solids (mg/L)	MW-5	1810	n/a	4/25/2023	3650	Yes	20	0	x^3	0.01	Param Inter
Total Dissolved Solids (mg/L)	MW-6	1810	n/a	4/25/2023	2300	Yes	20	0	x^3	0.01	Param Inter
Total Dissolved Solids (mg/L)	MW-7	1810	n/a	4/25/2023	2540	Yes	20	0	x^3	0.01	Param Inter
Total Dissolved Solids (mg/L)	MW-10	1810	n/a	4/26/2023	3100	Yes	20	0	x^3	0.01	Param Inter



Within Limit

### Prediction Limit

Interwell Non-parametric

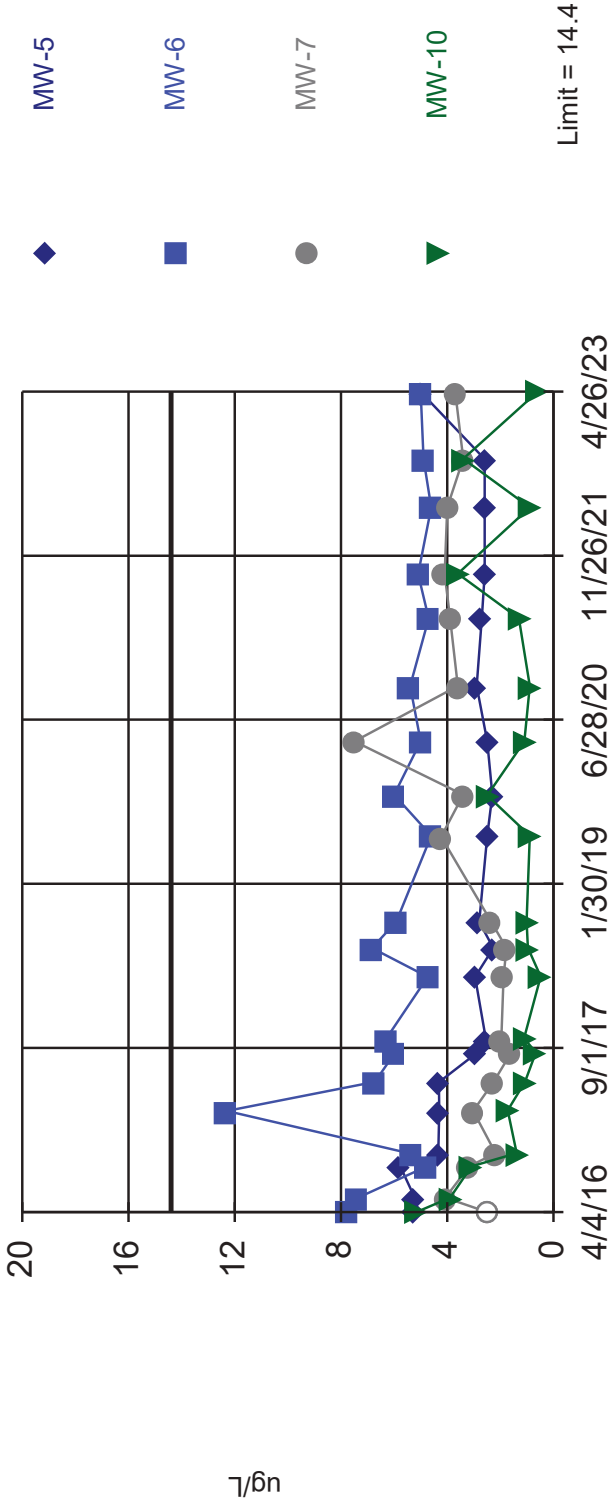


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 19 background values. 63.16% NDs. Report alpha = 0.1739. Individual comparison alpha = 0.04664. Most recent point for each compliance well compared to limit. Distribution was found to be non-normal after removal of suspect values, so outliers could not be identified. Insufficient data to test for seasonality; data will not be deseasonalized.

Within Limit

Prediction Limit

Interwell Non-parametric

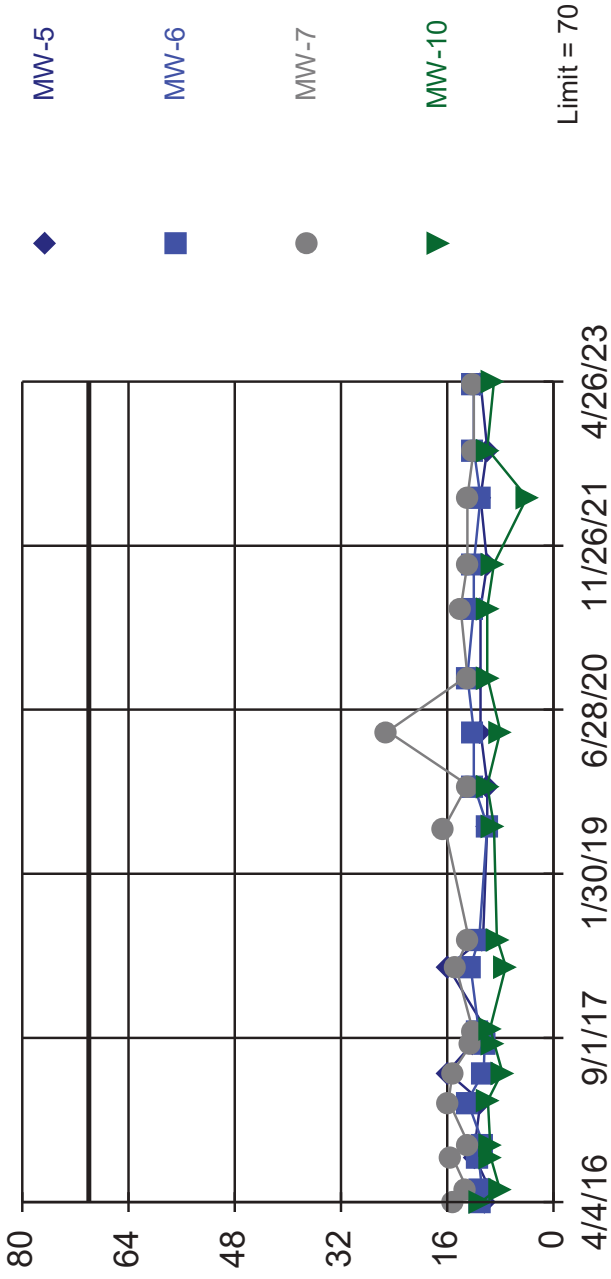


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 20 background values. Report alpha = 0.1667. Individual comparison alpha = 0.04456. Most recent point for each compliance well compared to limit. Distribution was found to be non-normal after removal of suspect values, so outliers could not be identified. Insufficient data to test for seasonality; data will not be deseasonalized.

Within Limit

Prediction Limit

Interwell Non-parametric

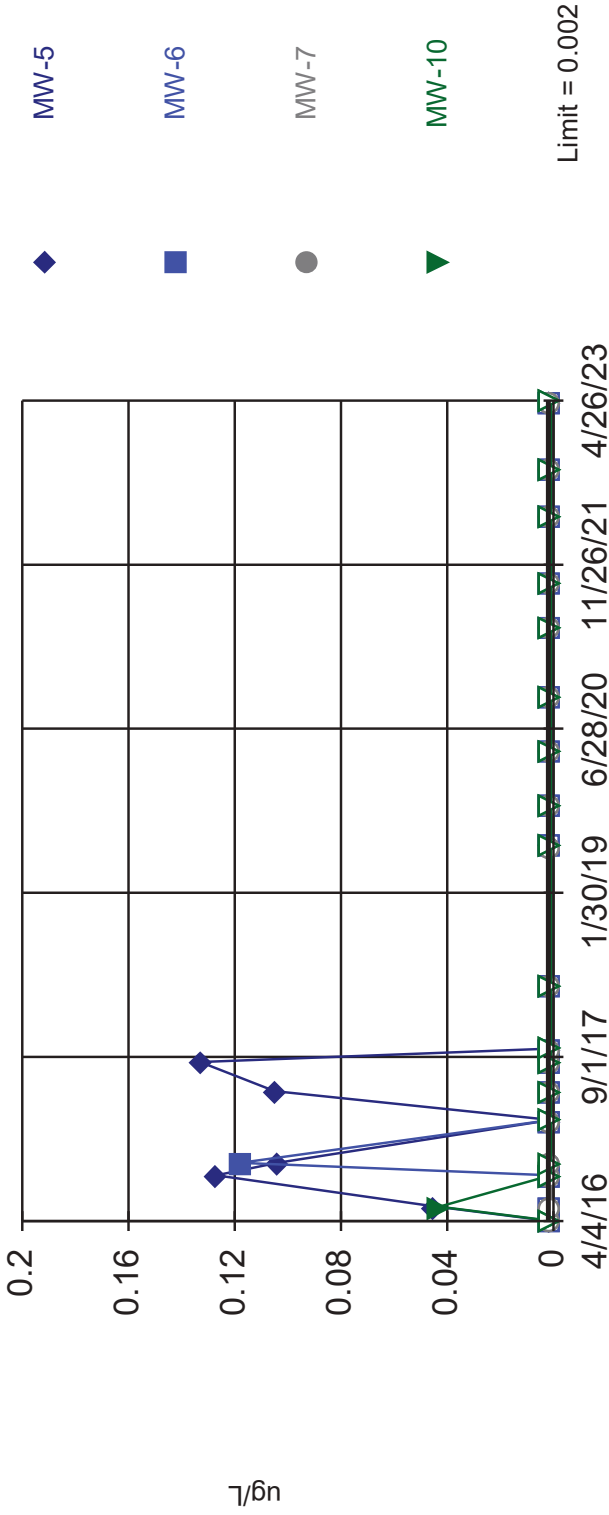


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 19 background values. Report alpha = 0.1739. Individual comparison alpha = 0.04664. Most recent point for each compliance well compared to limit. After outlier removal distribution was non-normal, so outlier results were invalidated. Insufficient data to test for seasonality; data will not be deseasonalized.

Within Limit

Prediction Limit

Interwell Non-parametric

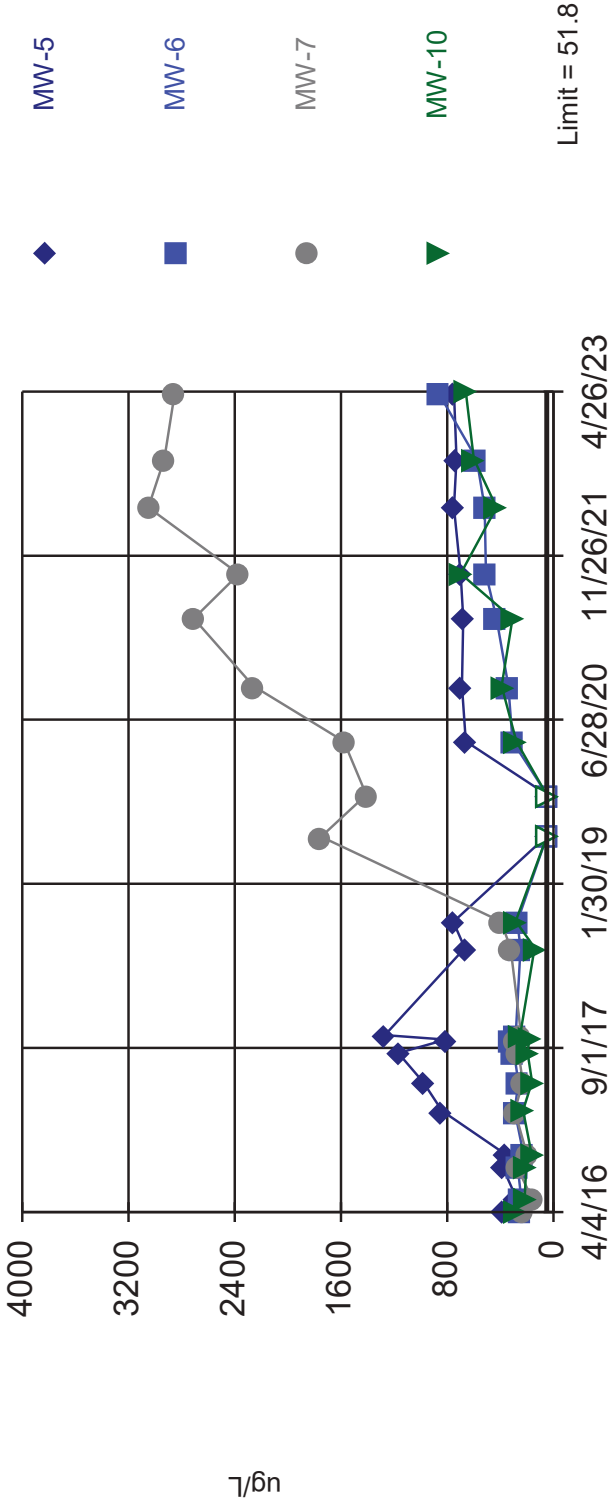


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 18) were censored; limit is most recent reporting limit. Report alpha = 0.1818. Individual comparison alpha = 0.04893. Most recent point for each compliance well compared to limit. Distribution was found to be non-normal after removal of suspect values, so outliers could not be identified. Insufficient data to test for seasonality; data will not be deseasonalized.

Exceeds Limit: MW-5, MW-6, MW-7, MW-10

### Prediction Limit

Interwell Non-parametric

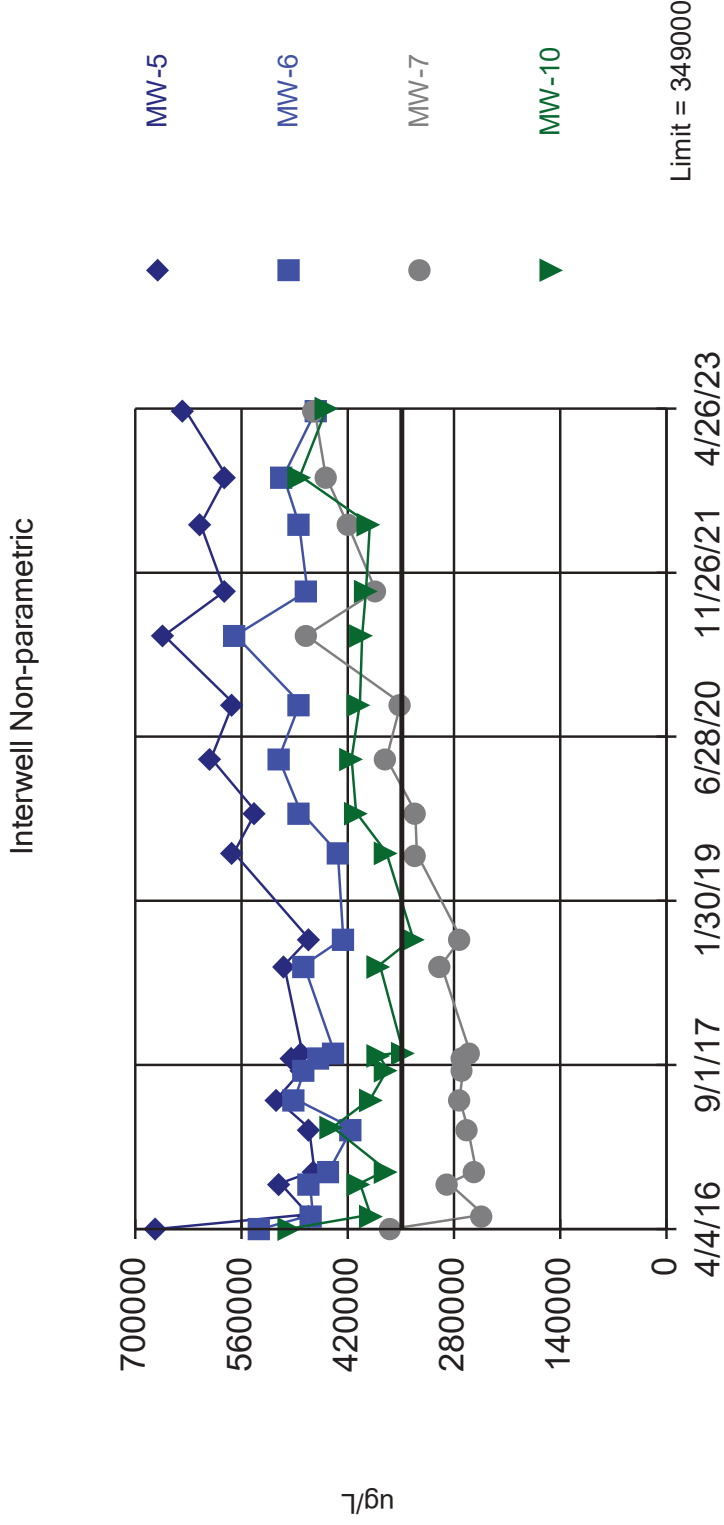


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 20 background values. 45% NDs. Report alpha = 0.1667. Individual comparison alpha = 0.04456. Most recent point for each compliance well compared to limit. Distribution was found to be non-normal after removal of suspect values, so outliers could not be identified. Insufficient data to test for seasonality; data will not be deseasonalized.



Exceeds Limit: MW-5, MW-6, MW-7, MW-10

Prediction Limit

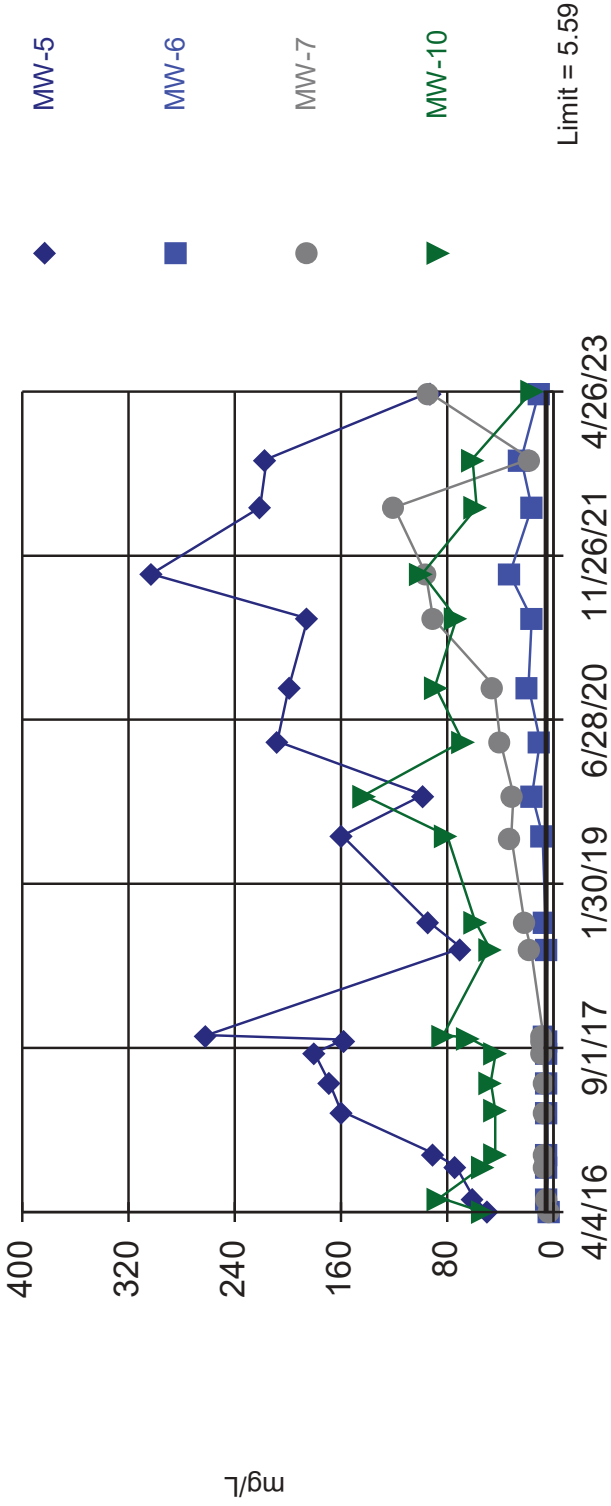


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 20 background values. Report alpha = 0.1667. Individual comparison alpha = 0.04456. Most recent point for each compliance well compared to limit. Distribution was found to be non-normal after removal of suspect values, so outliers could not be identified. Insufficient data to test for seasonality; data will not be deseasonalized.

Exceeds Limit: MW-5, MW-6, MW-7, MW-10

Prediction Limit

Interwell Parametric



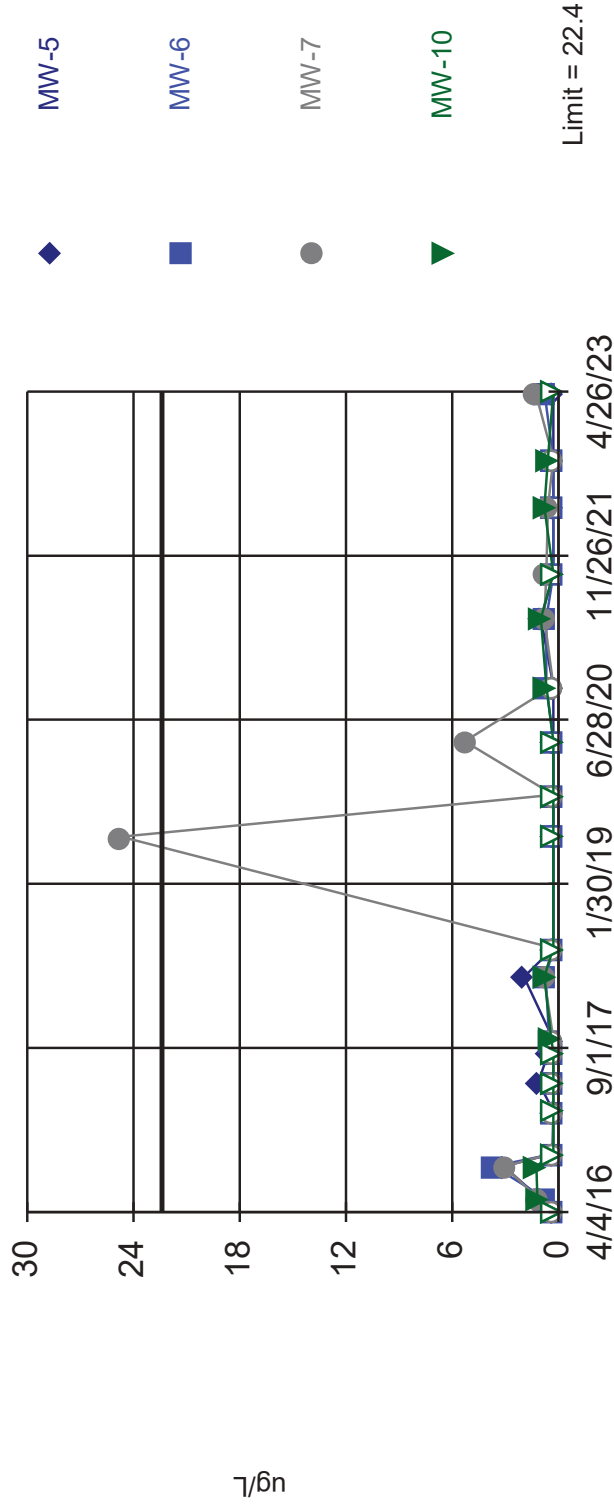
Background Data Summary: Mean=4.277, Std. Dev.=0.5047, n=20. Insufficient data to test for seasonality; not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9296, critical = 0.905. Report alpha = 0.0394. Individual comparison alpha = 0.01. Most recent point for each compliance well compared to limit. EPA 1989 outlier screening was performed on the background data. No background outliers were found.



Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 19 background values. 36.84% NDs. Report alpha = 0.1739. Individual comparison alpha = 0.04664. Most recent point for each compliance well compared to limit. After outlier removal distribution was non-normal, so outlier results were invalidated. Insufficient data to test for seasonality; data will not be deseasonalized.

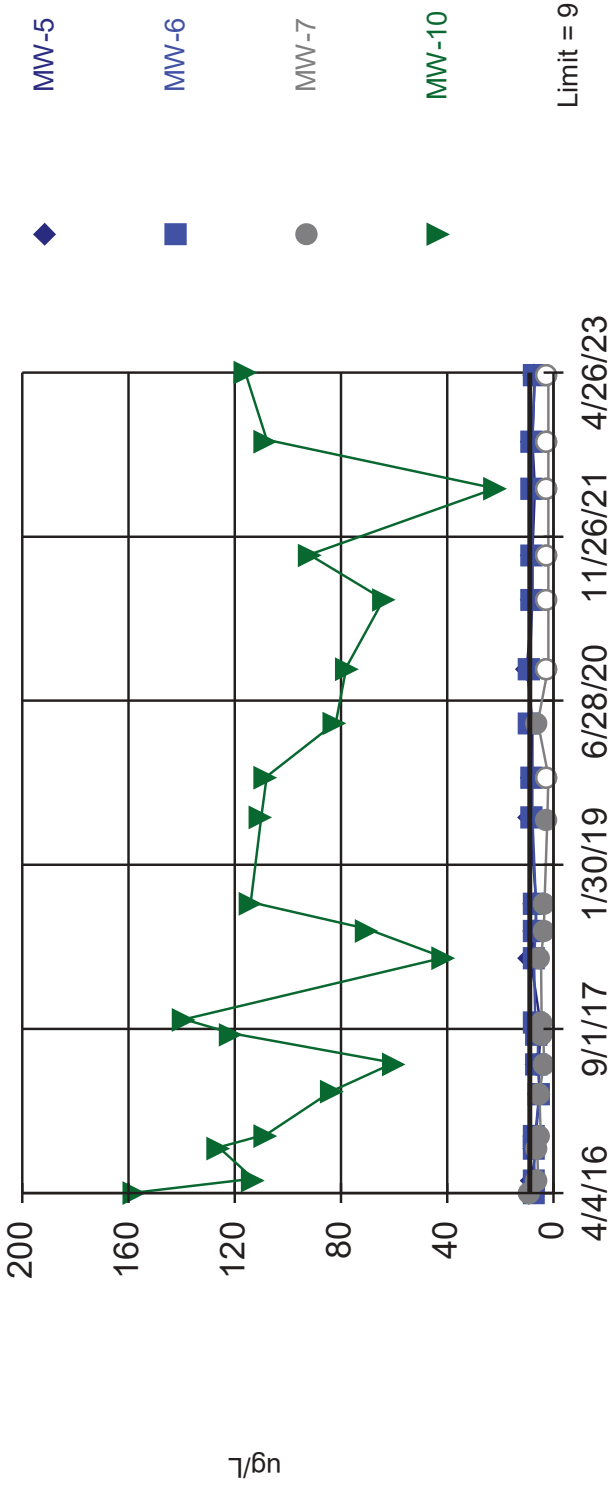
Constituent: Chromium Analysis Run 7/26/2023 1:53 PM View: Original Wells

Big Rivers Electric Corp. Client: Burns & McDonnell Data: BREC\_GW\_v2

### Exceeds Limit: MW-10

### Prediction Limit

Interwell Non-parametric

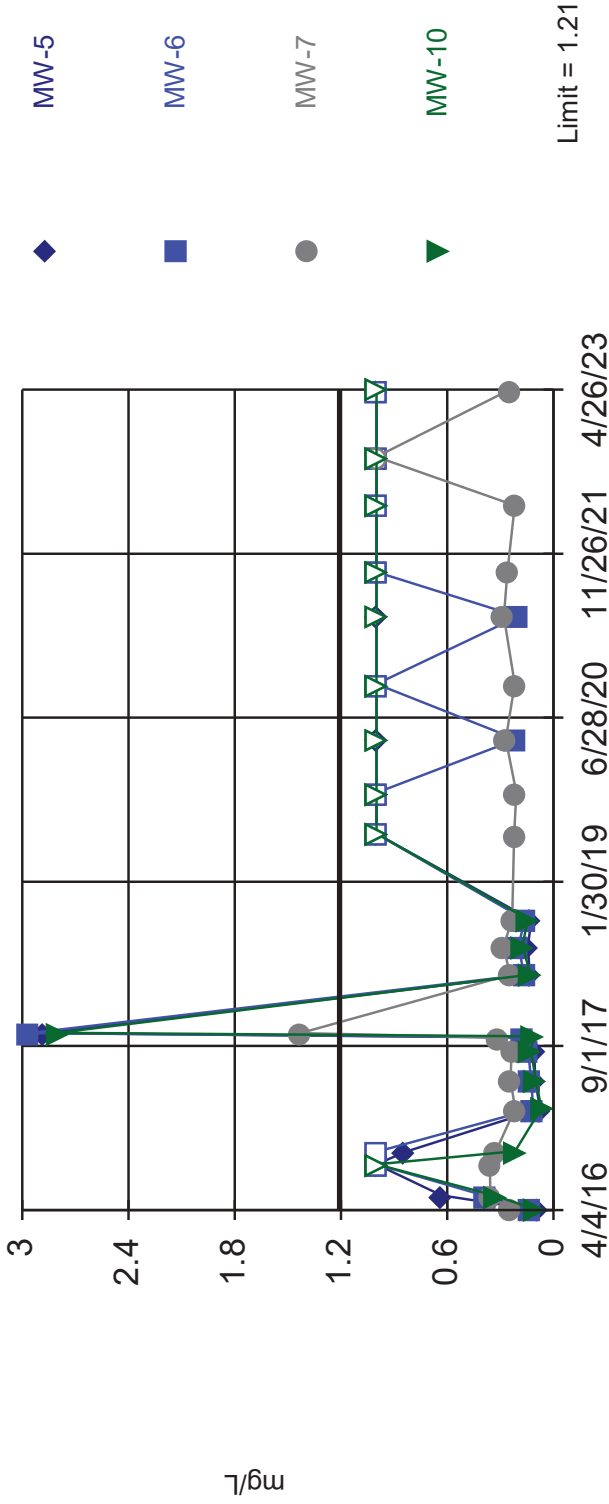


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 19 background values. 42.11% NDs. Report alpha = 0.1739. Individual comparison alpha = 0.04664. Most recent point for each compliance well compared to limit. After outlier removal distribution was non-normal, so outlier results were invalidated. Insufficient data to test for seasonality; data will not be deseasonalized.

Within Limit

Prediction Limit

Interwell Non-parametric

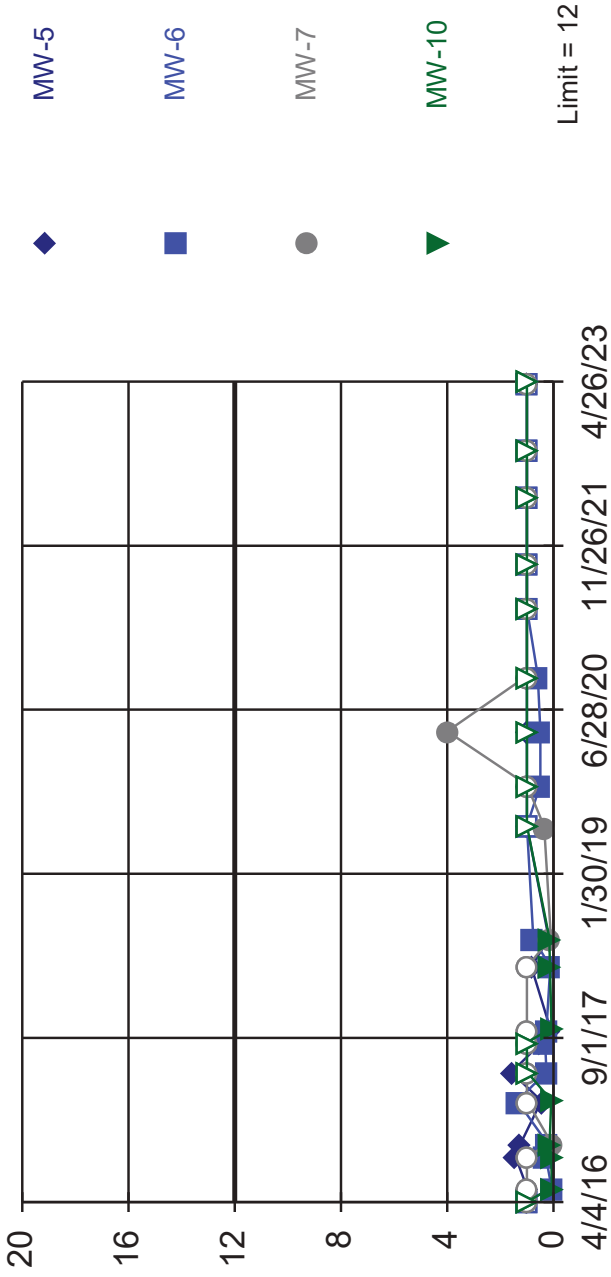


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 21 background values. 9.524% NDs. Report alpha = 0.16. Individual comparison alpha = 0.04265. Most recent point for each compliance well compared to limit. Distribution was found to be non-normal after removal of suspect values, so outliers could not be identified. Insufficient data to test for seasonality; data will not be deseasonalized.

Within Limit

Prediction Limit

Interwell Non-parametric



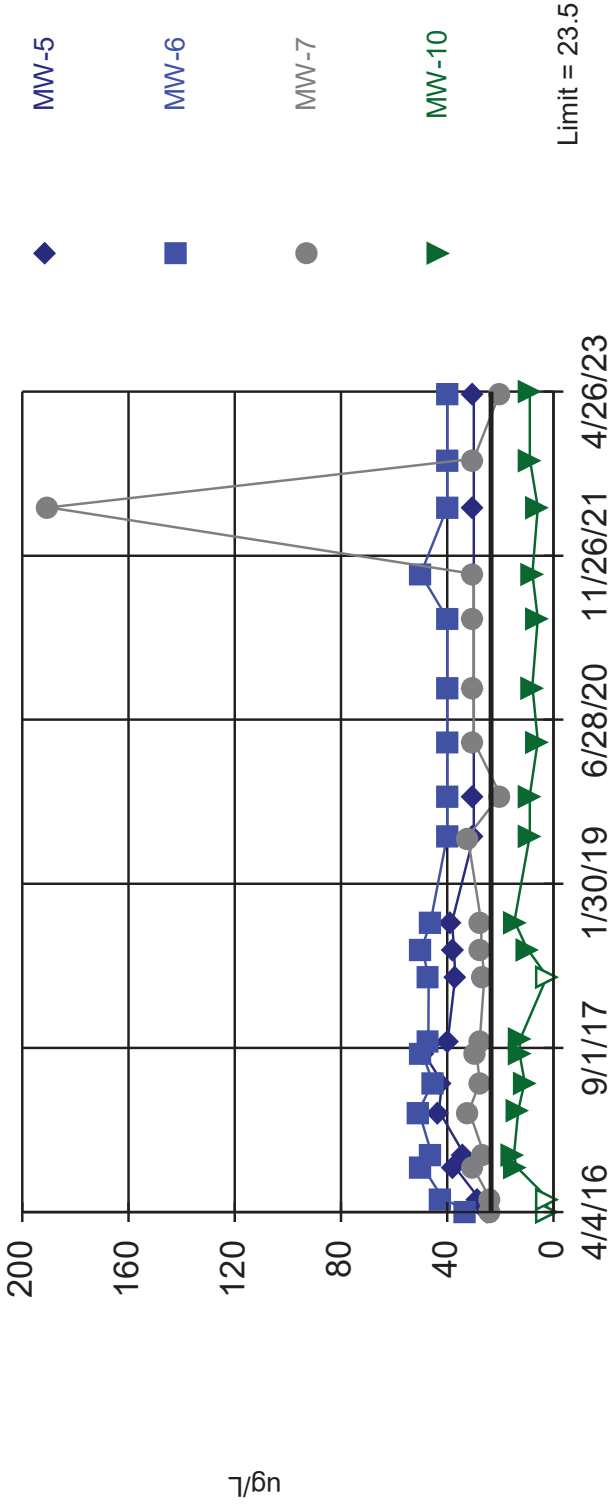
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 19 background values. 68.42% NDs. Report alpha = 0.1739. Individual comparison alpha = 0.04664. Most recent point for each compliance well compared to limit. After outlier removal distribution was non-normal, so outlier results were invalidated. Insufficient data to test for seasonality; data will not be deseasonalized.

Sanitas™ v.9.6.37 Software licensed to Burns & McDonnell. EPA  
 Hollow symbols indicate censored values.

Exceeds Limit: MW-5, MW-6

### Prediction Limit

Interwell Parametric

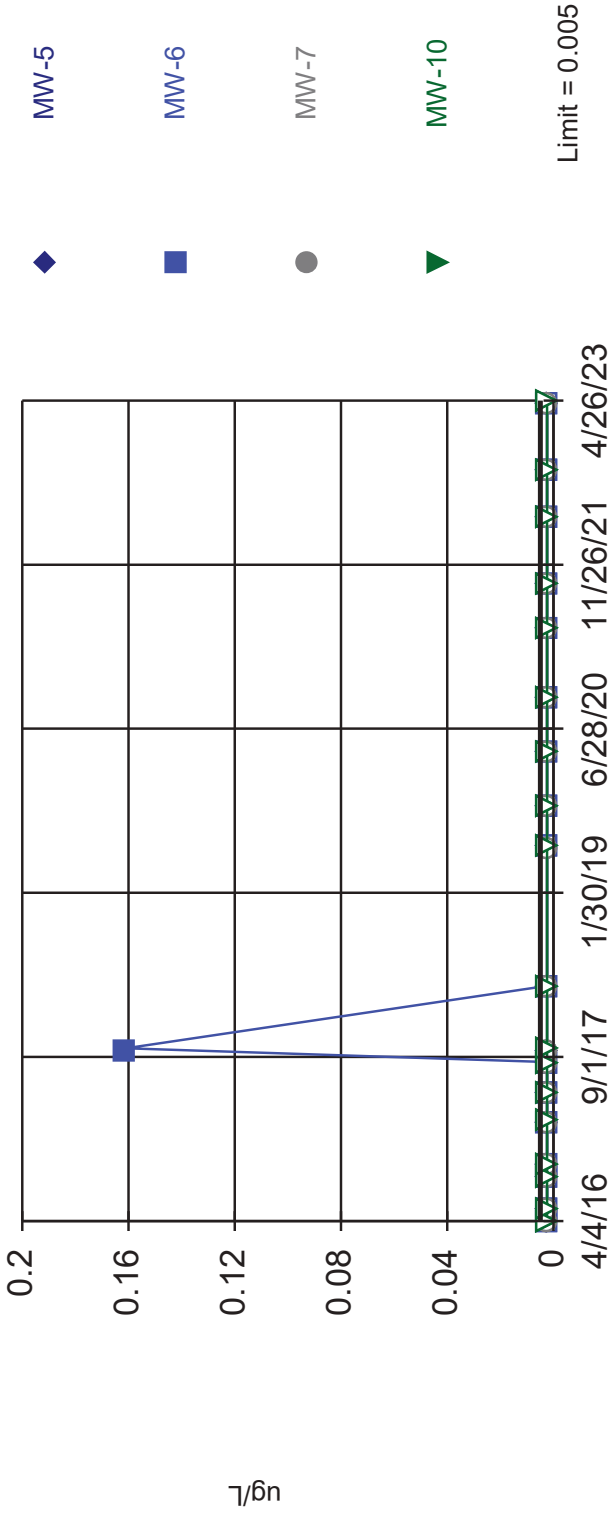


Background Data Summary (after Cohen's Adjustment): Mean=9.953, Std. Dev.=5.206, n=20, 20% NDs. Insufficient data to test for seasonality; not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9207, critical = 0.905. Report alpha = 0.0394. Individual comparison alpha = 0.01. Most recent point for each compliance well compared to limit. EPA 1989 outlier screening was performed on the background data. No background outliers were found.

Within Limit

Prediction Limit

Interwell Non-parametric

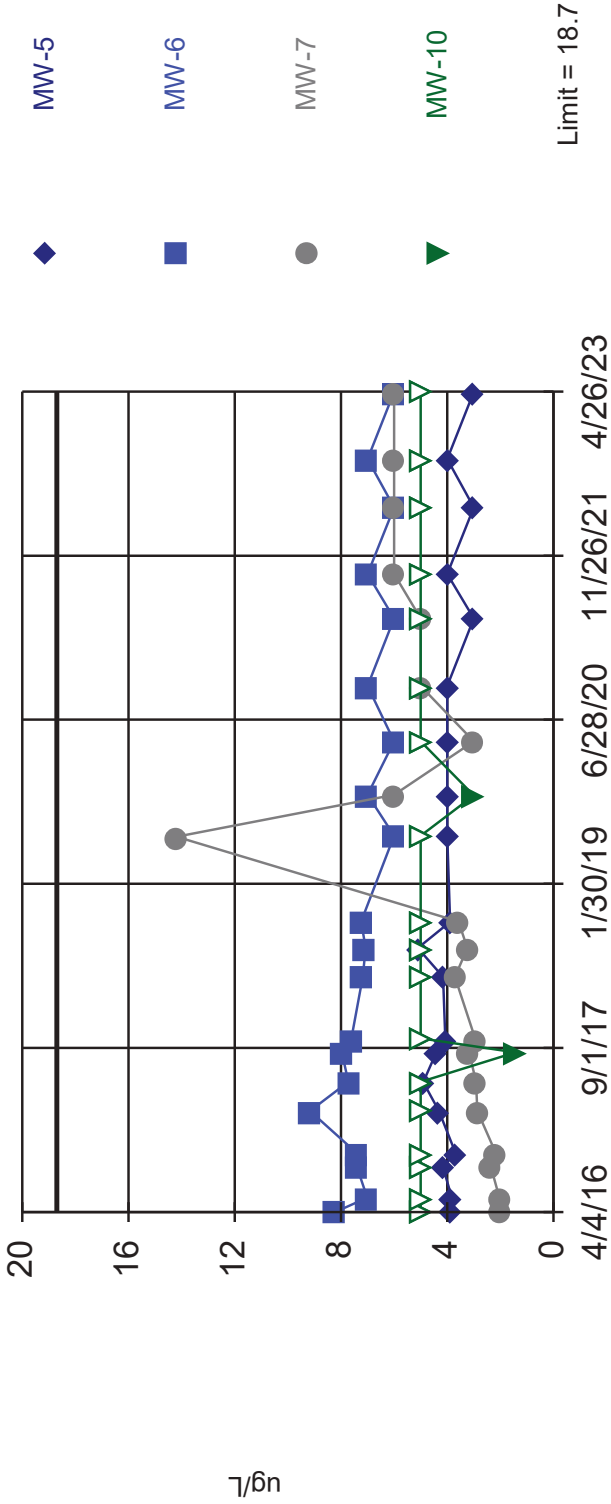


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 18) were censored; limit is most recent reporting limit. Report alpha = 0.1818. Individual comparison alpha = 0.04893. Most recent point for each compliance well compared to limit. Distribution was found to be non-normal after removal of suspect values, so outliers could not be identified. Insufficient data to test for seasonality; data will not be deseasonalized.

Within Limit

Prediction Limit

Interwell Non-parametric

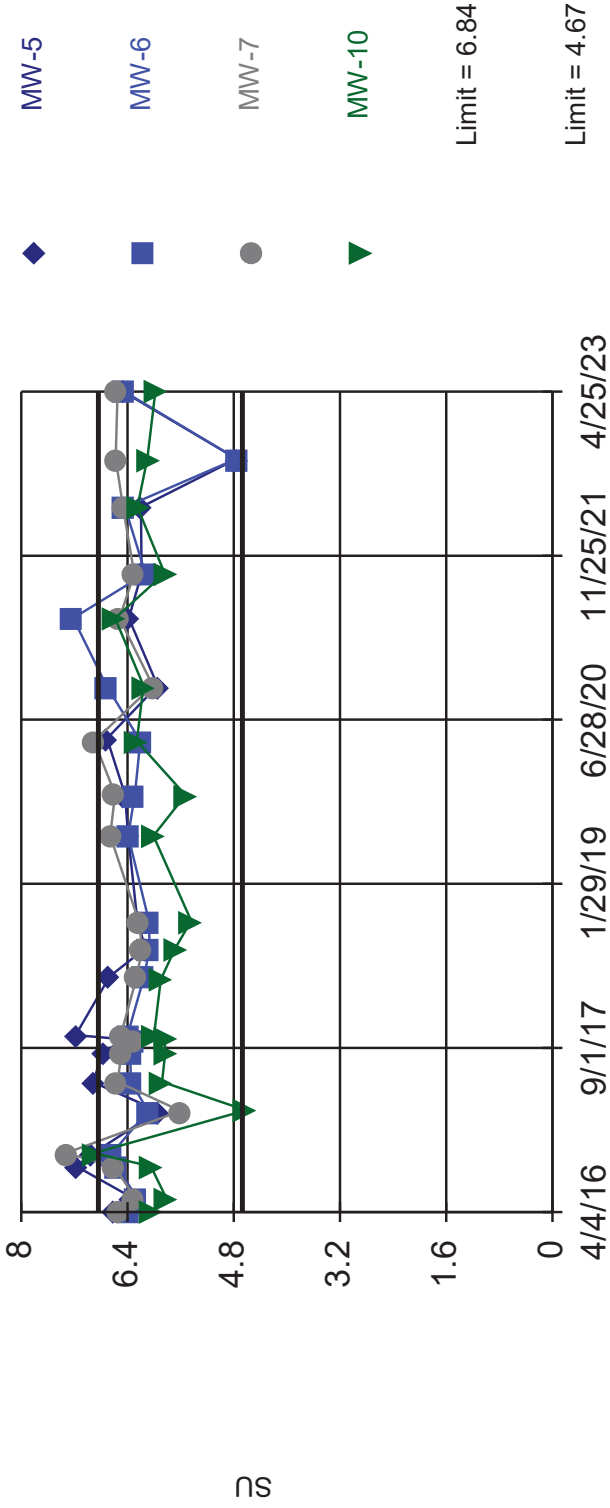


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 20 background values. Report alpha = 0.1667. Individual comparison alpha = 0.04456. Most recent point for each compliance well compared to limit. Distribution was found to be non-normal after removal of suspect values, so outliers could not be identified. Insufficient data to test for seasonality; data will not be deseasonalized.

Within Limits

Prediction Limit

Interwell Non-parametric



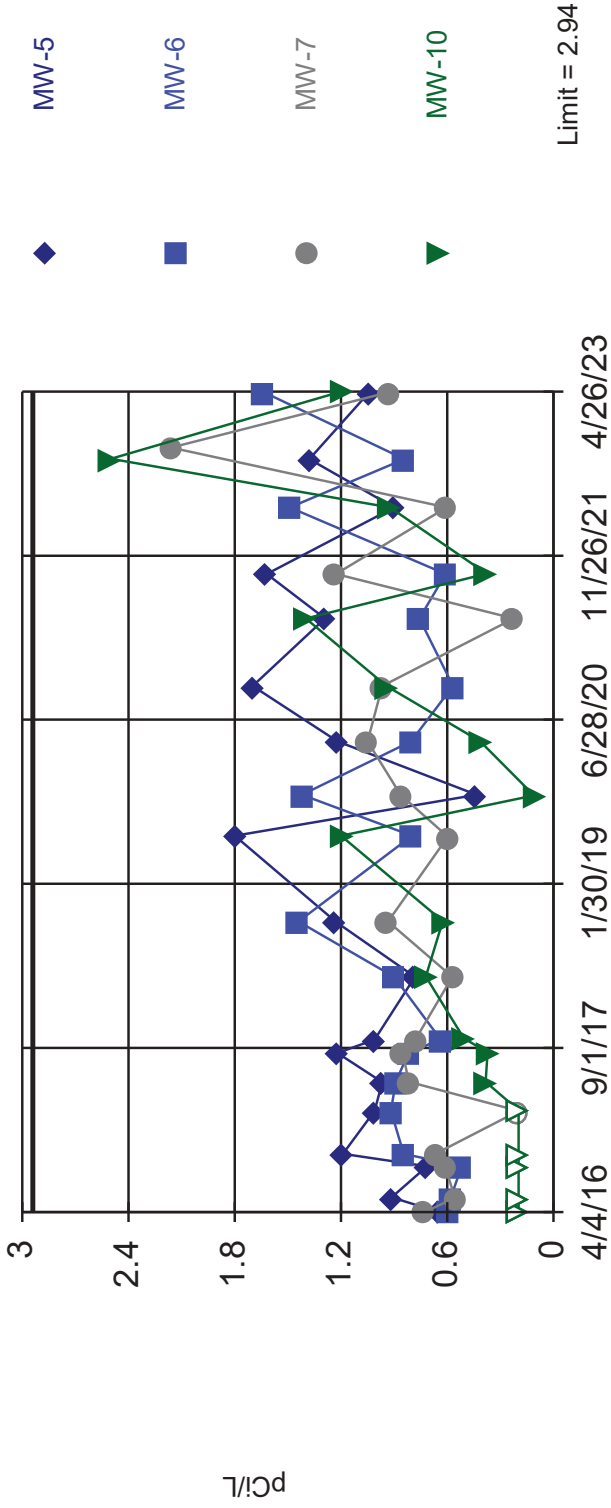
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limits are highest and lowest of 21 background values. Report alpha = 0.32. Individual comparison alpha = 0.0853. Most recent point for each compliance well compared to limit. Distribution was found to be non-normal after removal of suspect values, so outliers could not be identified. Insufficient data to test for seasonality; data will not be deseasonalized.



Within Limit

Prediction Limit

Interwell Non-parametric

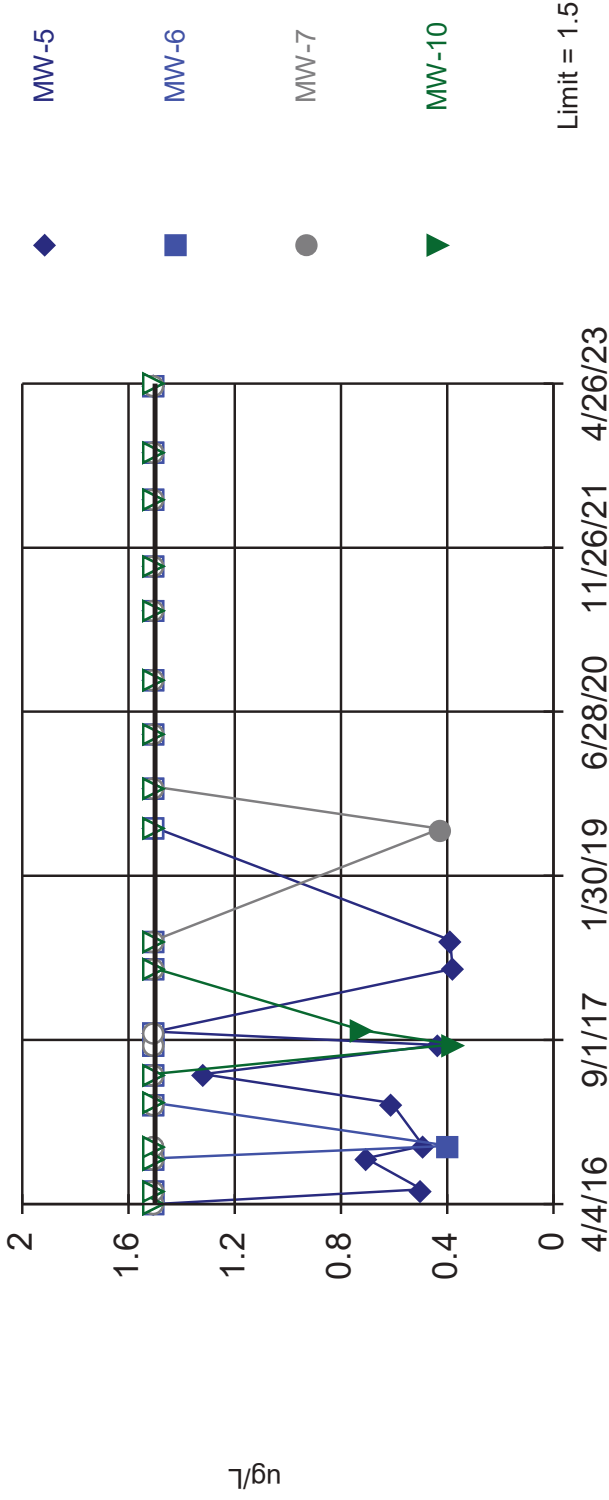


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 19 background values. Report alpha = 0.1739. Individual comparison alpha = 0.04664. Most recent point for each compliance well compared to limit. Distribution was found to be non-normal after removal of suspect values, so outliers could not be identified. Insufficient data to test for seasonality; data will not be deseasonalized.

Within Limit

Prediction Limit

Interwell Non-parametric

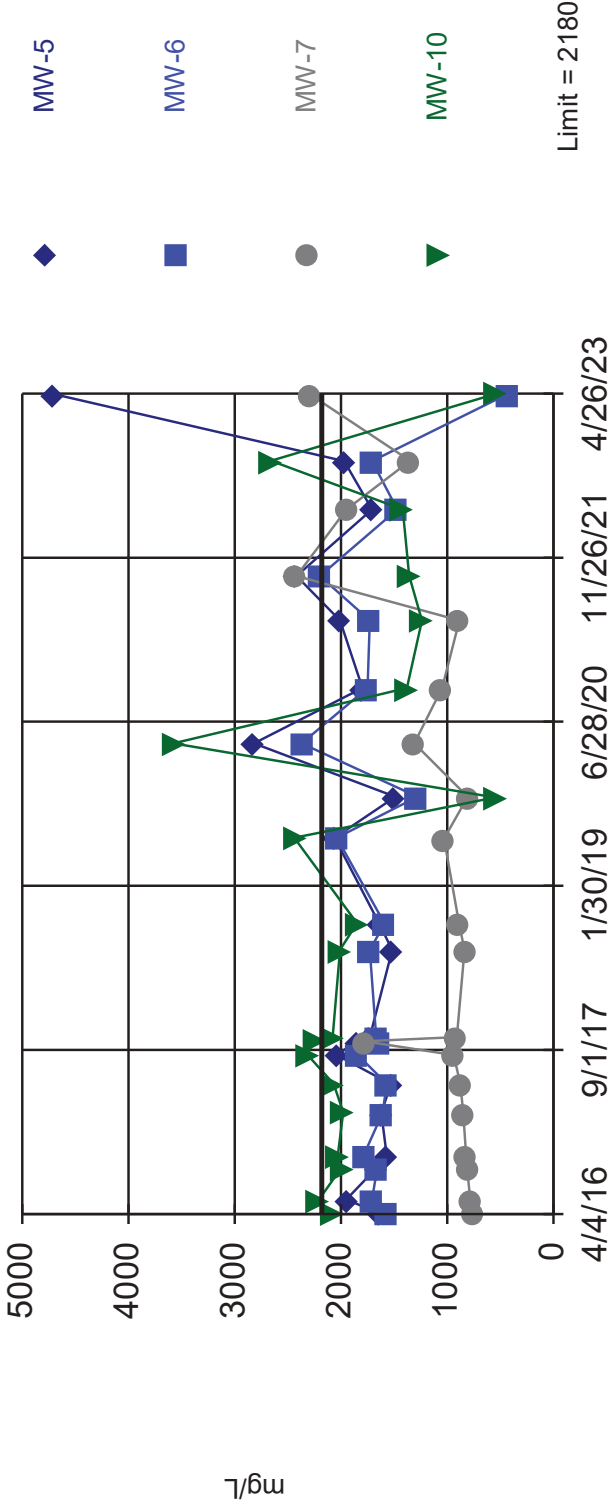


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 19 background values. 89.47% NDs. Report alpha = 0.1739. Individual comparison alpha = 0.04664. Most recent point for each compliance well compared to limit. After outlier removal distribution was non-normal, so outlier results were invalidated. Insufficient data to test for seasonality; data will not be deseasonalized.

Exceeds Limit: MW-5, MW-7

Prediction Limit

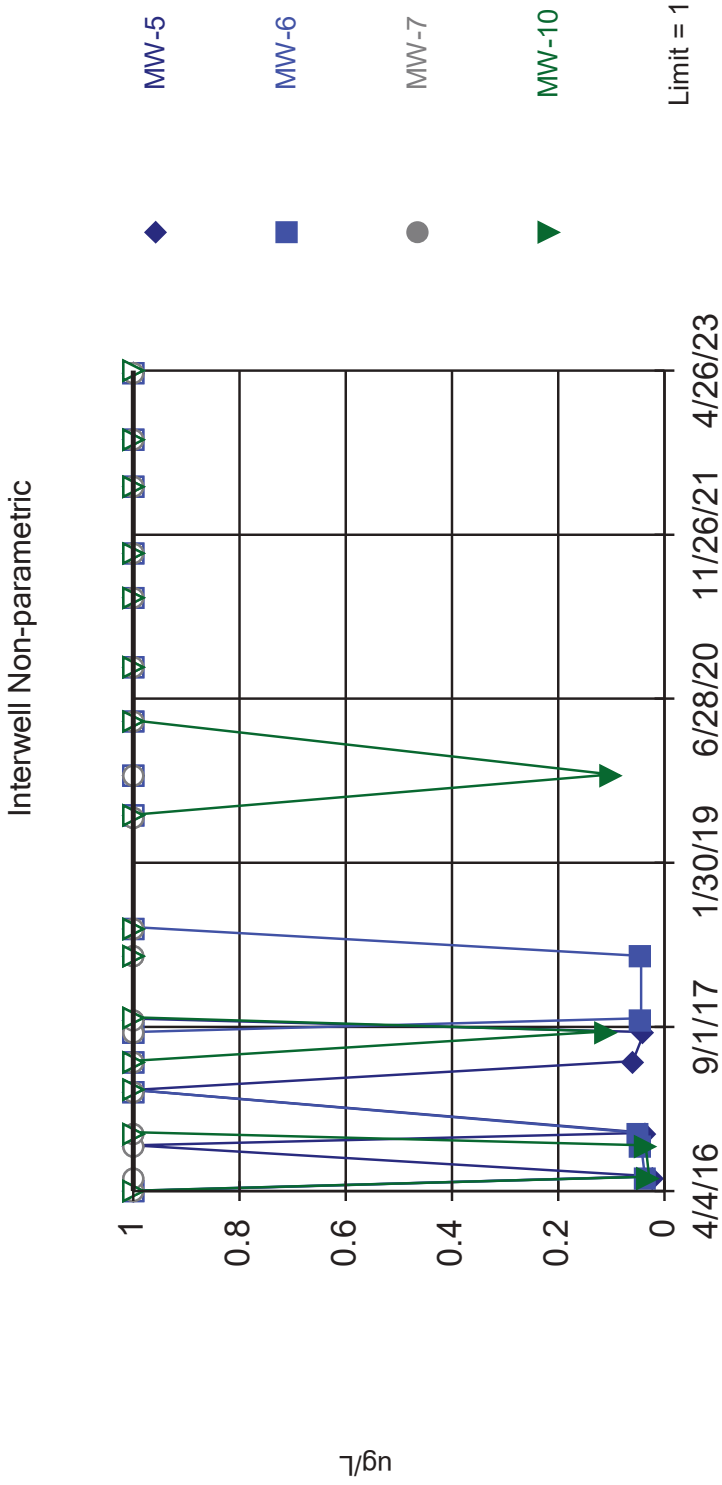
Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 20 background values. Report alpha = 0.1667. Individual comparison alpha = 0.04456. Most recent point for each compliance well compared to limit. Distribution was found to be non-normal after removal of suspect values, so outliers could not be identified. Insufficient data to test for seasonality; data will not be deseasonalized.

Within Limit

Prediction Limit

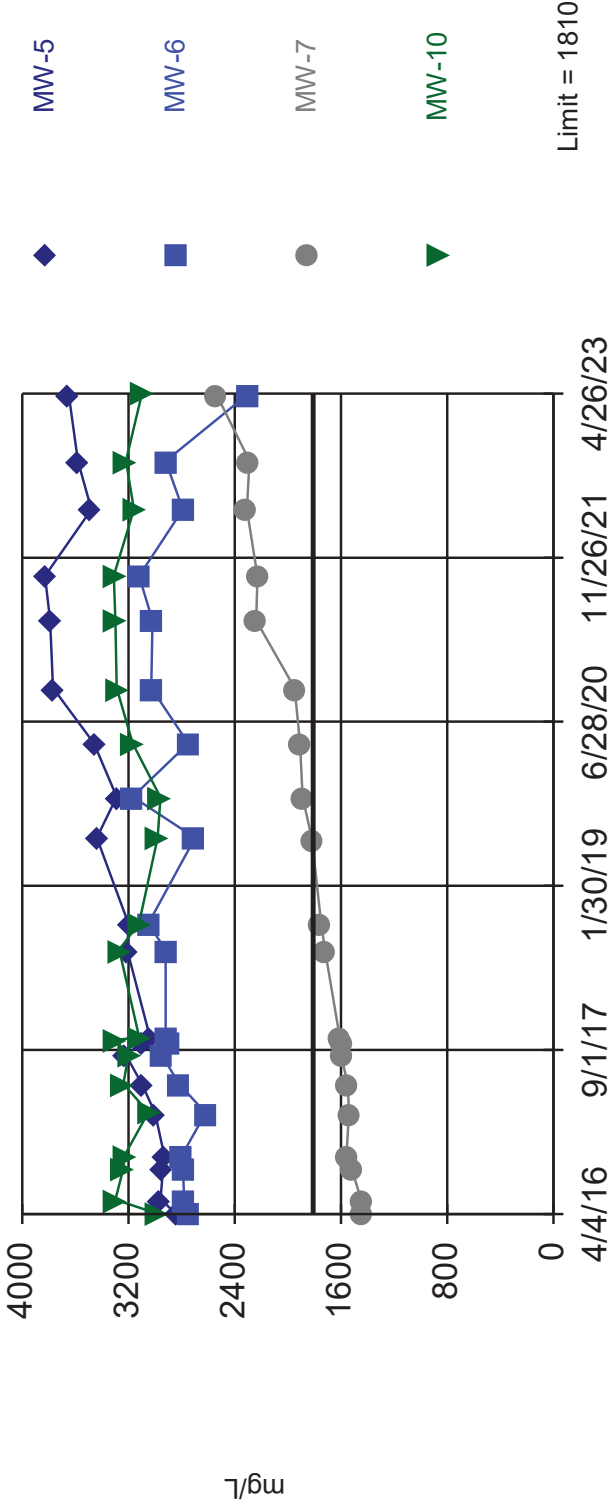


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 19 background values. 84.21% NDs. Report alpha = 0.1739. Individual comparison alpha = 0.04664. Most recent point for each compliance well compared to limit. Distribution was found to be non-normal after removal of suspect values, so outliers could not be identified. Insufficient data to test for seasonality; data will not be deseasonalized.

Exceeds Limit: MW-5, MW-6, MW-7, MW-10

Prediction Limit

Interwell Parametric



Background Data Summary (based on cube transformation): Mean=3.8e9, Std. Dev.=8.3e8, n=20. Insufficient data to test for seasonality; not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9337, critical = 0.905. Report alpha = 0.0394. Individual comparison alpha = 0.01. Most recent point for each compliance well compared to limit. Distribution was found to be non-normal after removal of suspect values, so outliers could not be identified.

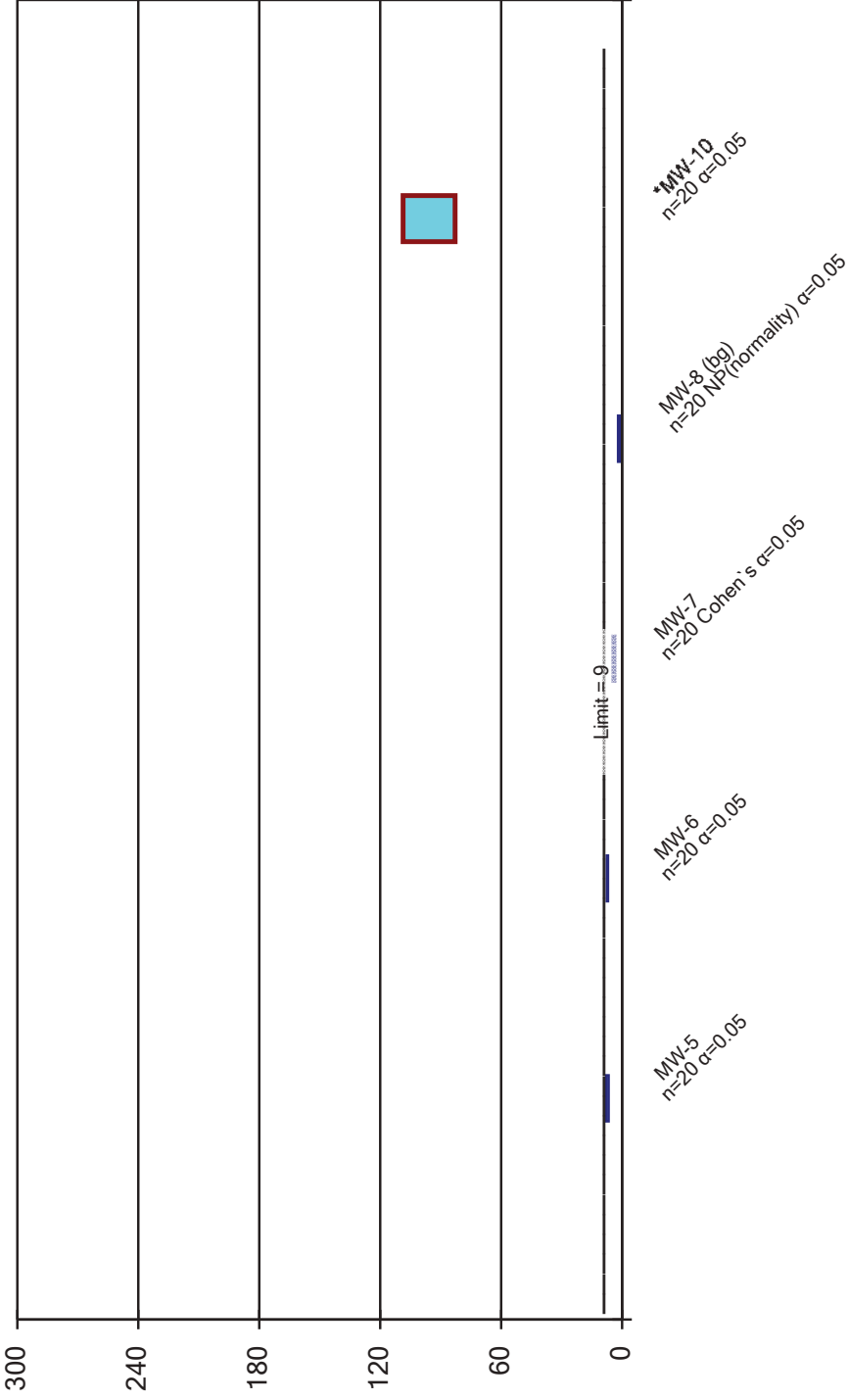
# Confidence Interval

Big Rivers Electric Corp. Client: Burns & McDonnell Data: BREC\_GW\_v2 Printed 7/26/2023, 2:46 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Cobalt (ug/L)	MW-5	7.877	6.774	9	No	20	0	No	0.05	Param.
Cobalt (ug/L)	MW-6	7.696	6.947	9	No	20	0	No	0.05	Param.
Cobalt (ug/L)	MW-7	4.733	3.382	9	No	20	35	No	0.05	Param.
Cobalt (ug/L)	MW-8 (bg)	2	1.1	9	No	20	40	No	0.05	NP (normality)
<b>Cobalt (ug/L)</b>	<b>MW-10</b>	<b>108.6</b>	<b>82.87</b>	<b>9</b>	<b>Yes</b>	<b>20</b>	<b>0</b>	<b>No</b>	<b>0.05</b>	<b>Param.</b>
Lithium (ug/L)	MW-5	36.41	31.63	40	No	20	0	No	0.05	Param.
<b>Lithium (ug/L)</b>	<b>MW-6</b>	<b>45.7</b>	<b>41.87</b>	<b>40</b>	<b>Yes</b>	<b>20</b>	<b>0</b>	<b>No</b>	<b>0.05</b>	<b>Param.</b>
Lithium (ug/L)	MW-7	30	26.3	40	No	20	0	No	0.05	NP (normality)
Lithium (ug/L)	MW-8 (bg)	12.42	9.32	40	No	20	20	No	0.05	Param.
Lithium (ug/L)	MW-10	10.71	8.066	40	No	20	15	No	0.05	Param.

## Parametric and Non-Parametric (NP) Confidence Interval

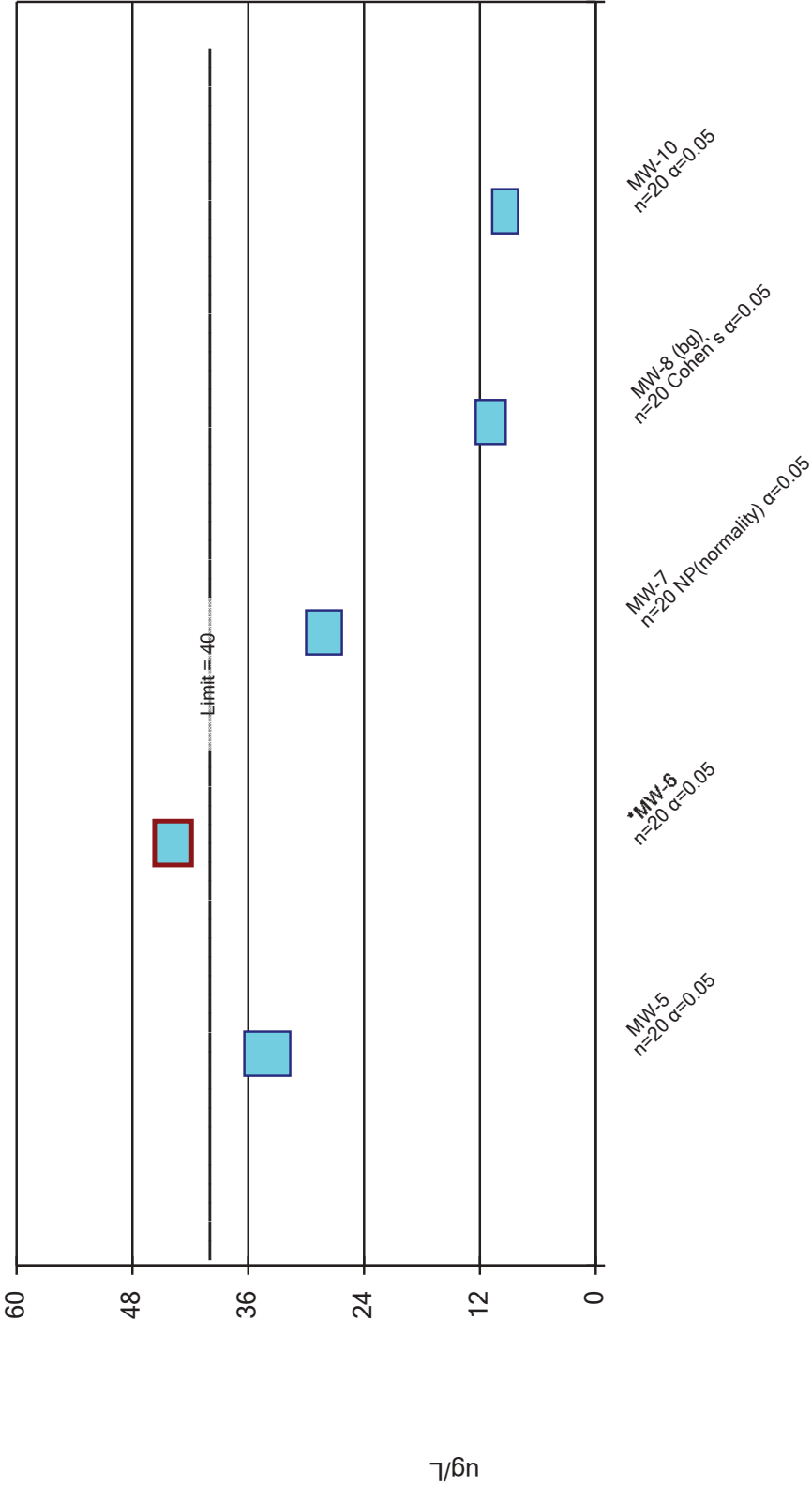
Compliance limit is exceeded.\* Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 7/26/2023 2:44 PM View: Original Wells - SSI  
Big Rivers Electric Corp. Client: Burns & McDonnell Data: BREC\_GW\_v2

## Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.\* Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium Analysis Run 7/26/2023 2:44 PM View: Original Wells - SSI  
Big Rivers Electric Corp. Client: Burns & McDonnell Data: BREC\_GW\_v2





January 19, 2024

Mr. Mike Mizell  
Big Rivers Electric Corporation  
710 West 2<sup>nd</sup> Street  
Owensboro, KY 42301

Re: Statistical Evaluation of October 2023 Assessment Monitoring Groundwater Data  
D.B. Wilson Generating Station Phase II CCR Landfill in Centertown, Kentucky  
Agency Interest ID #: 3319  
Activity I.D. #: AIN2014001

Dear Mr. Mizell:

This letter presents the results of the statistical evaluation of analytical data from the October 2023 assessment monitoring event performed at the D.B. Wilson Station Phase II CCR Landfill in Centertown, Kentucky in accordance with the requirements of the U.S. Environmental Protection Agency's *Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments* (40 Code of Federal Regulations [CFR] Part 257, Subpart D). This letter also presents a comparison of the October 2023 sampling results to calculated groundwater protection standards (GWPSs). The GWPSs for the groundwater monitoring network were reviewed and updated as part of the statistical evaluation completed for the October 2023 sampling event and are presented on Table 1. These GWPSs will continue to be reviewed and updated as additional data are collected. A comparison of the October 2023 data to the updated GWPSs is presented on Table 2. The statistical evaluation presented herein was performed in accordance with the *Update to Certification of Statistical Method for Evaluating Groundwater in accordance with 40 CFR § 257.93 at D.B Wilson Station Phase II CC Landfill in Centertown, Kentucky* dated May 25, 2022.

In October 2023, the Phase II CCR Landfill Groundwater Monitoring Well Network was sampled for Appendix III and Appendix IV parameters per the requirements of 40 CFR §257.95(d)(1). Interwell prediction limit statistical analyses were performed for these well/constituent pairs and are discussed subsequently. GWPSs were also developed in accordance with 40 CFR §257.95(h) which describes a GWPS as the higher value between a determined background concentration for an analyte and the established maximum concentration limit (MCL) or the GWPS criteria for select Appendix IV parameters without an MCL presented in 40 CFR §257.95(h)(2). This letter presents the results of the statistical evaluation of the October 2023 assessment monitoring event for inclusion in the Phase II CCR Landfill Operating Record.

Mr. Mike Mizell  
Big Rivers Electric Corporation  
January 19, 2024  
Page 2

### **Statistical Evaluation of D.B. Wilson Station's Phase II CCR Landfill Compliance Monitoring Well Network Evaluation**

An interwell prediction limit evaluation was performed to compare the concentrations of Appendix III and Appendix IV parameters observed in October 2023 compliance (downgradient) monitoring wells MW-5, MW-6, MW-7, and MW-10 to calculated prediction limits (i.e., background limits) that were established using data collected from April of 2016 through October of 2023 from upgradient monitoring well MW-8. Certain Appendix III and Appendix IV parameters were detected in October 2023 at concentrations above the calculated background limits (equivalent to the MW-8 prediction limits), and a summary is included in Attachment 1. This included the following well/constituent pairs for downgradient compliance monitoring wells with statistically significant increases (SSIs) above calculated background limits:

#### Appendix III Parameters:

- Boron (MW-5, MW-6, MW-7, and MW-10)
- Calcium (MW-5, MW-6, and MW-10)
- Chloride (MW-5, MW-6, MW-7, and MW-10)
- Sulfate (MW-6 and MW-10)
- Total Dissolved Solids (TDS) (MW-5, MW-6, MW-7, and MW-10)

#### Appendix IV Parameters:

- Cobalt (MW-10)
- Lithium (MW-5, MW-6, and MW-7)

Results of exceedances of background were generally consistent with the April 2023 statistical results. The reported October 2023 SSIs for sulfate (MW-6 and MW-10) and lithium (MW-7) were not present in April 2023. Additionally, the calcium (MW-7) and sulfate (MW-5 and MW-7) SSIs that were present in April 2023 were not present in this event. All other above-noted Appendix III and Appendix IV SSIs continue to occur at downgradient compliance monitoring wells in the October 2023 statistical analysis.

The Appendix IV constituents with SSIs (cobalt and lithium) were further evaluated to determine whether they are present at statistically significant levels (SSLs) over the GWPS by calculating the lower confidence limit (LCL) at 95% confidence for each well and constituent using the baseline, detection, and assessment monitoring results collected to date from each monitoring well. For a constituent to be present at an SSL over the GWPS, its LCL must be greater than the GWPS. The comparison of the calculated LCLs with the GWPSs for cobalt and lithium at

Mr. Mike Mizell  
Big Rivers Electric Corporation  
January 19, 2024  
Page 3

downgradient compliance monitoring wells MW-5, MW-6, MW-7, and MW-10 resulted in the following well/constituent pairs with SSLs above the GWPS:

- Cobalt (MW-10)
- Lithium (MW-6)

The LCLs for the remaining well/constituent pairs for cobalt and lithium are less than the GWPS and thus are not considered SSLs. Attachment 1 provides a summary of the calculated LCLs in comparison with the GWPSs. Results of SSLs above the GWPSs were generally consistent with the April 2023 results as cobalt (MW-10) and lithium (MW-6) were reported as SSLs in the April 2023 event.

Given that certain Appendix III and IV constituents were observed within the Phase II CCR Landfill groundwater monitoring network at concentrations above their respective calculated background limit and/or the LCL for certain Appendix IV constituents was greater than the corresponding GWPSs, these results do not warrant a transition to detection monitoring per the requirements of 40 CFR §257.95(e) and assessment monitoring will continue for the next first half semiannual monitoring event in 2024

Sincerely,

Burns & McDonnell

A handwritten signature in blue ink that reads "Chris Hoglund".

Chris Hoglund, PG  
Project Manager

Attachments:

- Table 1 – Calculated Background and Groundwater Protection Standards
- Table 2 – Summary of October 2023 Groundwater Analytical Results



Mr. Mike Mizell  
Big Rivers Electric Corporation  
January 19, 2024  
Page 4

Attachment 1 – Sanitas™ Statistical Outputs for Phase II CCR Landfill Compliance Monitoring Network

cc: Diana Merritt, BREC Wilson Station

## **TABLES**

**Table 1**  
**Calculated Background and Groundwater Protection Standards**  
**D.B. Wilson Station Phase II CCR Landfill in Centertown, Kentucky**

Detection Constituents (Appendix III)	Units	Background*	MCL	40 CFR §257.95(h)(2) Criteria	Groundwater Protection Standard
Boron	mg/L	0.0518	--	--	--
Calcium	mg/L	349	--	--	--
pH (field)	SU	4.67 - 6.84	--	--	--
TDS	mg/L	1810	--	--	--
Chloride	mg/L	5.563	--	--	--
Fluoride	mg/L	1.21	4.0	--	4.0
Sulfate	mg/L	2180	--	--	--
Assessment Constituents (Appendix IV)	Units	Background*	MCL	40 CFR §257.95(h)(2) Criteria	Groundwater Protection Standard
Antimony	mg/L	0.0025	0.006	--	0.006
Arsenic	mg/L	0.0144	0.01	--	0.0144
Barium	mg/L	0.07	2.0	--	2.0
Beryllium	mg/L	0.002	0.004	--	0.004
Cadmium	mg/L	0.0005	0.005	--	0.005
Chromium	mg/L	0.0224	0.1	--	0.1
Cobalt	mg/L	0.009	--	0.006	0.009
Fluoride	mg/L	1.21	4.0	--	4.0
Lead	mg/L	0.012	--	0.015	0.015
Lithium	mg/L	0.02094	--	0.04	0.04
Mercury	mg/L	0.000005	0.002	--	0.002
Molybdenum	mg/L	0.0187	--	0.1	0.1
Combined Radium 226 and 228**	pCi/L	2.94	5.0	--	5.0
Selenium	mg/L	0.0015	0.05	--	0.05
Thallium	mg/L	0.001	0.002	--	0.002

**Notes:**

\*Background concentrations were determined utilizing interwell prediction limits (Attachment 1). Upgradient Monitoring Well MW-8 was used to calculate background concentrations. This included background data ranging from April 2016 through October 2023. For pH, background is between those values presented.

\*\*Combined radium is reported with an uncertainty range. However, this range cannot be incorporated into statistical calculations as it varies per result and is not a standard value. Therefore, to maintain consistency in reporting these results, the reported laboratory concentration was used for the statistical analyses.

CFR - Code of Federal Regulations

mg/L - milligrams per liter

pCi/L - picocuries per liter

MCL - Maximum Contaminant Level

SU - standard unit

**Table 2**  
**Summary of October 2023 Groundwater Analytical Results**  
**D.B. Wilson Station Phase II CCR Landfill in Centertown, Kentucky**

Analytical Method	Sample Location: Sample Date: Laboratory ID(s): Notes(s):	All analytes excl. Radium/Radium only	Calculated Background <sup>1</sup>	GWPS <sup>2</sup>	CCR Compliance Monitoring Well Network					MW-10 10/3/2023 3100291-19 Downgradient	
					MW-5 10/2/2023 3100291-11 Downgradient	MW-6 10/3/2023 3100291-13 Downgradient	MW-7 10/3/2023 3100291-15 Downgradient	MW-8 10/2/2023 3100291-17 Upgradient/Background	MW-10 10/3/2023 3100291-19 Downgradient		
Appendix III - Detection Monitoring		Analyte	Unit								
6010B	Boron	Boron	mg/L	0.0518	--	0.75	0.71	3.01 D1	1.00 D1, U	0.47	
6010B	Calcium	Calcium	mg/L	349	--	573 D1	504 D1	343 D1	214 D1	411 D1	
In Situ	pH (Field Measurement)	pH (Field Measurement)	SU	4.67 - 6.84	--	6.24	6.31	6.30	6.63	5.71	
2540 C-2015	Total Dissolved Solids	Total Dissolved Solids	mg/L	1810	--	3680	2820	2230	1640	3180	
300.0 REV 2.1	Chloride	Chloride	mg/L	5.563	--	320 D	33.7	76.0	3.7	59.2	
300.0 REV 2.1	Fluoride	Fluoride	mg/L	1.21	4	0.20 U	0.20 U	0.23	0.25	0.20 U	
300.0 REV 2.1	Sulfate	Sulfate	mg/L	2180	--	1950 D,J	3140 D	1630 D	1140 D	4180 D	
Appendix IV - Assessment Monitoring											
6020A	Antimony	Antimony	mg/L	0.0025	0.006	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	
6020A	Arsenic	Arsenic	mg/L	0.0144	0.0144	0.0028	0.0054	0.0040	0.0056	0.0020	
6020A	Barium	Barium	mg/L	0.07	2	0.011	0.014	0.016	0.021	0.009	
6020A	Beryllium	Beryllium	mg/L	0.002	0.004	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	
6020A	Cadmium	Cadmium	mg/L	0.0005	0.005	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	
6020A	Chromium	Chromium	mg/L	0.0224	0.1	0.0020 U	0.0020 U	0.0011 J	0.0016 J	0.0020 U	
6020A	Cobalt	Cobalt	mg/L	0.009	0.009	0.005	0.007	0.004 U	0.004 U	0.064	
300.0 REV 2.1	Fluoride	Fluoride	mg/L	1.21	4	0.20 U	0.20 U	0.23	0.25	0.20 U	
6020A	Lead	Lead	mg/L	0.012	0.015	0.002 U	0.002 U	0.002 U	0.006 J	0.002 U	
6020A	Lithium	Lithium	mg/L	0.02094	0.04	0.04	0.04	0.03	0.009 J	0.009 J	
245.7 REV 2	Mercury	Mercury	mg/L	0.000005	0.002	0.000005 UJ	0.000005 U	0.000005 U	0.000005 U	0.000005 U	
6020A	Molybdenum	Molybdenum	mg/L	0.0187	0.1	0.004 J	0.007 J	0.005 J	0.01	0.01 U	
903.1/904.0	Combined Radium 226 and 228 <sup>3</sup>	Combined Radium 226 and 228 <sup>3</sup>	pCi/l	2.94	5	1.93 J	1.98 J	0.583 J	1.08 J	0.915 J+	
6020A	Selenium	Selenium	mg/L	0.0015	0.05	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	
6020A	Thallium	Thallium	mg/L	0.001	0.002	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	

**Bold** - Analyte detected above calculated background concentration.  
Parameter was detected in compliance well located downgradient of the CCR Landfill at a statistically significant level (SSL) above its GWPS. For a constituent to be present at an SSL over the GWPS, its calculated lower confidence limit at 95% confidence must be greater than the GWPS (see Attachment 1 with confidence interval statistical outputs).

**Notes**

- 1 - Background concentrations were determined utilizing interwell prediction limits. Upgradient well MW-8 was used to determine these background concentrations. This included data ranging from April 2016 through October 2023. For pH, background is between the two values presented.
- 2 - GWPSs were developed in accordance with 40 CFR §257.95(h).
- 3 - Combined radium is reported with an associate range. However, this range cannot be incorporated into statistical calculations as it varies per result and is not a standard value. Therefore, to maintain consistency in reporting these results, the reported laboratory concentration was used for the statistical analyses.

- CCR - coal combustion residuals
- D - Results reported from dilution
- D1 - Sample required dilution due to high concentration of target analyte
- GWPS - Groundwater Protection Standard
- J - estimated concentration
- J+ = Qualified as estimated potential high bias during data review.
- mg/L - milligram per liter
- pCi/L - picocurie per liter
- SU - standard unit
- U - Nondetect at the identified concentration

**ATTACHMENT 1 - SANITAS™ STATISTICAL OUTPUTS FOR PHASE II CCR  
LANDFILL COMPLIANCE MONITORING WELL NETWORK**



# Prediction Limit

Big Rivers Electric Corp. Data: BREC\_GW\_v2 Printed 1/12/2024, 11:55 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg.N	%NDs	Transform	Alpha	Method
Antimony (mg/L)	MW-5	0.0025	n/a	10/2/2023	0.0025ND	No	20	65	n/a	0.04456	NP Inter (NDs)
Antimony (mg/L)	MW-6	0.0025	n/a	10/3/2023	0.0025ND	No	20	65	n/a	0.04456	NP Inter (NDs)
Antimony (mg/L)	MW-7	0.0025	n/a	10/3/2023	0.0025ND	No	20	65	n/a	0.04456	NP Inter (NDs)
Antimony (mg/L)	MW-10	0.0025	n/a	10/3/2023	0.0025ND	No	20	65	n/a	0.04456	NP Inter (NDs)
Arsenic (ug/L)	MW-5	14.4	n/a	10/2/2023	2.8	No	21	0	n/a	0.04265	NP Inter (normality)
Arsenic (ug/L)	MW-6	14.4	n/a	10/3/2023	5.4	No	21	0	n/a	0.04265	NP Inter (normality)
Arsenic (ug/L)	MW-7	14.4	n/a	10/3/2023	4	No	21	0	n/a	0.04265	NP Inter (normality)
Arsenic (ug/L)	MW-10	14.4	n/a	10/3/2023	2	No	21	0	n/a	0.04265	NP Inter (normality)
Barium (ug/L)	MW-5	70	n/a	10/2/2023	11	No	20	0	n/a	0.04456	NP Inter (normality)
Barium (ug/L)	MW-6	70	n/a	10/3/2023	14	No	20	0	n/a	0.04456	NP Inter (normality)
Barium (ug/L)	MW-7	70	n/a	10/3/2023	16	No	20	0	n/a	0.04456	NP Inter (normality)
Barium (ug/L)	MW-10	70	n/a	10/3/2023	9	No	20	0	n/a	0.04456	NP Inter (normality)
Beryllium (ug/L)	MW-5	2	n/a	10/2/2023	1ND	No	19	100	n/a	0.04664	NP Inter (NDs)
Beryllium (ug/L)	MW-6	2	n/a	10/3/2023	1ND	No	19	100	n/a	0.04664	NP Inter (NDs)
Beryllium (ug/L)	MW-7	2	n/a	10/3/2023	1ND	No	19	100	n/a	0.04664	NP Inter (NDs)
Beryllium (ug/L)	MW-10	2	n/a	10/3/2023	1ND	No	19	100	n/a	0.04664	NP Inter (NDs)
<b>Boron (ug/L)</b>	<b>MW-5</b>	<b>51.8</b>	<b>n/a</b>	<b>10/2/2023</b>	<b>750</b>	<b>Yes</b>	<b>20</b>	<b>45</b>	<b>n/a</b>	<b>0.04456</b>	<b>NP Inter (normality)</b>
<b>Boron (ug/L)</b>	<b>MW-6</b>	<b>51.8</b>	<b>n/a</b>	<b>10/3/2023</b>	<b>710</b>	<b>Yes</b>	<b>20</b>	<b>45</b>	<b>n/a</b>	<b>0.04456</b>	<b>NP Inter (normality)</b>
<b>Boron (ug/L)</b>	<b>MW-7</b>	<b>51.8</b>	<b>n/a</b>	<b>10/3/2023</b>	<b>3010</b>	<b>Yes</b>	<b>20</b>	<b>45</b>	<b>n/a</b>	<b>0.04456</b>	<b>NP Inter (normality)</b>
<b>Boron (ug/L)</b>	<b>MW-10</b>	<b>51.8</b>	<b>n/a</b>	<b>10/3/2023</b>	<b>470</b>	<b>Yes</b>	<b>20</b>	<b>45</b>	<b>n/a</b>	<b>0.04456</b>	<b>NP Inter (normality)</b>
Cadmium (ug/L)	MW-5	0.5	n/a	10/2/2023	0.5ND	No	19	89.47	n/a	0.04664	NP Inter (NDs)
Cadmium (ug/L)	MW-6	0.5	n/a	10/3/2023	0.5ND	No	19	89.47	n/a	0.04664	NP Inter (NDs)
Cadmium (ug/L)	MW-7	0.5	n/a	10/3/2023	0.5ND	No	19	89.47	n/a	0.04664	NP Inter (NDs)
Cadmium (ug/L)	MW-10	0.5	n/a	10/3/2023	0.5ND	No	19	89.47	n/a	0.04664	NP Inter (NDs)
<b>Calcium (ug/L)</b>	<b>MW-5</b>	<b>349000</b>	<b>n/a</b>	<b>10/2/2023</b>	<b>573000</b>	<b>Yes</b>	<b>21</b>	<b>0</b>	<b>n/a</b>	<b>0.04265</b>	<b>NP Inter (normality)</b>
<b>Calcium (ug/L)</b>	<b>MW-6</b>	<b>349000</b>	<b>n/a</b>	<b>10/3/2023</b>	<b>504000</b>	<b>Yes</b>	<b>21</b>	<b>0</b>	<b>n/a</b>	<b>0.04265</b>	<b>NP Inter (normality)</b>
Calcium (ug/L)	MW-7	349000	n/a	10/3/2023	343000	No	21	0	n/a	0.04265	NP Inter (normality)
<b>Calcium (ug/L)</b>	<b>MW-10</b>	<b>349000</b>	<b>n/a</b>	<b>10/3/2023</b>	<b>411000</b>	<b>Yes</b>	<b>21</b>	<b>0</b>	<b>n/a</b>	<b>0.04265</b>	<b>NP Inter (normality)</b>
<b>Chloride (mg/L)</b>	<b>MW-5</b>	<b>5.563</b>	<b>n/a</b>	<b>10/2/2023</b>	<b>320</b>	<b>Yes</b>	<b>21</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param Inter</b>
<b>Chloride (mg/L)</b>	<b>MW-6</b>	<b>5.563</b>	<b>n/a</b>	<b>10/3/2023</b>	<b>33.7</b>	<b>Yes</b>	<b>21</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param Inter</b>
<b>Chloride (mg/L)</b>	<b>MW-7</b>	<b>5.563</b>	<b>n/a</b>	<b>10/3/2023</b>	<b>76</b>	<b>Yes</b>	<b>21</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param Inter</b>
<b>Chloride (mg/L)</b>	<b>MW-10</b>	<b>5.563</b>	<b>n/a</b>	<b>10/3/2023</b>	<b>59.2</b>	<b>Yes</b>	<b>21</b>	<b>0</b>	<b>No</b>	<b>0.01</b>	<b>Param Inter</b>
Chromium (ug/L)	MW-5	22.4	n/a	10/2/2023	0.3ND	No	20	35	n/a	0.04456	NP Inter (normality)
Chromium (ug/L)	MW-6	22.4	n/a	10/3/2023	0.3ND	No	20	35	n/a	0.04456	NP Inter (normality)
Chromium (ug/L)	MW-7	22.4	n/a	10/3/2023	1.1J	No	20	35	n/a	0.04456	NP Inter (normality)
Chromium (ug/L)	MW-10	22.4	n/a	10/3/2023	0.3ND	No	20	35	n/a	0.04456	NP Inter (normality)
Cobalt (ug/L)	MW-5	9	n/a	10/2/2023	5	No	20	45	n/a	0.04456	NP Inter (normality)
Cobalt (ug/L)	MW-6	9	n/a	10/3/2023	7	No	20	45	n/a	0.04456	NP Inter (normality)
Cobalt (ug/L)	MW-7	9	n/a	10/3/2023	2ND	No	20	45	n/a	0.04456	NP Inter (normality)
<b>Cobalt (ug/L)</b>	<b>MW-10</b>	<b>9</b>	<b>n/a</b>	<b>10/3/2023</b>	<b>64</b>	<b>Yes</b>	<b>20</b>	<b>45</b>	<b>n/a</b>	<b>0.04456</b>	<b>NP Inter (normality)</b>
Fluoride (mg/L)	MW-5	1.21	n/a	10/2/2023	1ND	No	22	9.091	n/a	0.0409	NP Inter (normality)
Fluoride (mg/L)	MW-6	1.21	n/a	10/3/2023	1ND	No	22	9.091	n/a	0.0409	NP Inter (normality)
Fluoride (mg/L)	MW-7	1.21	n/a	10/3/2023	0.23	No	22	9.091	n/a	0.0409	NP Inter (normality)
Fluoride (mg/L)	MW-10	1.21	n/a	10/3/2023	1ND	No	22	9.091	n/a	0.0409	NP Inter (normality)
Lead (ug/L)	MW-5	12	n/a	10/2/2023	1ND	No	20	65	n/a	0.04456	NP Inter (NDs)
Lead (ug/L)	MW-6	12	n/a	10/3/2023	1ND	No	20	65	n/a	0.04456	NP Inter (NDs)
Lead (ug/L)	MW-7	12	n/a	10/3/2023	1ND	No	20	65	n/a	0.04456	NP Inter (NDs)
Lead (ug/L)	MW-10	12	n/a	10/3/2023	1ND	No	20	65	n/a	0.04456	NP Inter (NDs)
<b>Lithium (ug/L)</b>	<b>MW-5</b>	<b>20.94</b>	<b>n/a</b>	<b>10/2/2023</b>	<b>40</b>	<b>Yes</b>	<b>21</b>	<b>19.05</b>	<b>No</b>	<b>0.01</b>	<b>Param Inter</b>
<b>Lithium (ug/L)</b>	<b>MW-6</b>	<b>20.94</b>	<b>n/a</b>	<b>10/3/2023</b>	<b>40</b>	<b>Yes</b>	<b>21</b>	<b>19.05</b>	<b>No</b>	<b>0.01</b>	<b>Param Inter</b>

# Prediction Limit

Big Rivers Electric Corp. Data: BREC\_GW\_v2 Printed 1/12/2024, 11:55 AM

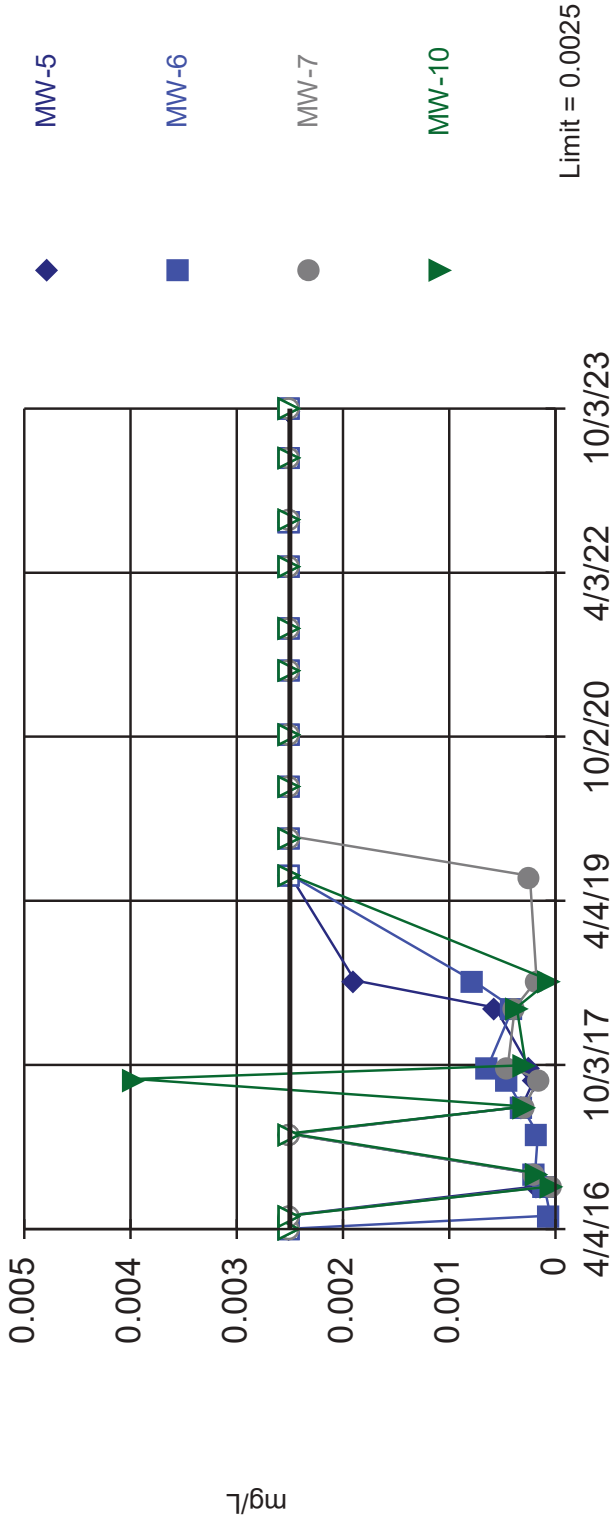
Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg.N	%NDs	Transform	Alpha	Method
Lithium (ug/L)	MW-7	20.94	n/a	10/3/2023	30	Yes	21	19.05	No	0.01	Param Inter
Lithium (ug/L)	MW-10	20.94	n/a	10/3/2023	9J	No	21	19.05	No	0.01	Param Inter
Mercury (ug/L)	MW-5	0.005	n/a	10/2/2023	0.0025ND	No	19	100	n/a	0.04664	NP Inter (NDs)
Mercury (ug/L)	MW-6	0.005	n/a	10/3/2023	0.0025ND	No	19	100	n/a	0.04664	NP Inter (NDs)
Mercury (ug/L)	MW-7	0.005	n/a	10/3/2023	0.0025ND	No	19	100	n/a	0.04664	NP Inter (NDs)
Mercury (ug/L)	MW-10	0.005	n/a	10/3/2023	0.0025ND	No	19	100	n/a	0.04664	NP Inter (NDs)
Molybdenum (ug/L)	MW-5	18.7	n/a	10/2/2023	4J	No	21	0	n/a	0.04265	NP Inter (normality)
Molybdenum (ug/L)	MW-6	18.7	n/a	10/3/2023	7J	No	21	0	n/a	0.04265	NP Inter (normality)
Molybdenum (ug/L)	MW-7	18.7	n/a	10/3/2023	5J	No	21	0	n/a	0.04265	NP Inter (normality)
Molybdenum (ug/L)	MW-10	18.7	n/a	10/3/2023	5ND	No	21	0	n/a	0.04265	NP Inter (normality)
pH [Field] (SU)	MW-5	6.84	4.67	10/2/2023	6.24	No	22	0	n/a	0.08181	NP Inter (normality)
pH [Field] (SU)	MW-6	6.84	4.67	10/3/2023	6.31	No	22	0	n/a	0.08181	NP Inter (normality)
pH [Field] (SU)	MW-7	6.84	4.67	10/3/2023	6.3	No	22	0	n/a	0.08181	NP Inter (normality)
pH [Field] (SU)	MW-10	6.84	4.67	10/3/2023	5.71	No	22	0	n/a	0.08181	NP Inter (normality)
Radium 226 + 228 (pCi/L)	MW-5	2.94	n/a	10/2/2023	1.93	No	20	0	n/a	0.04456	NP Inter (normality)
Radium 226 + 228 (pCi/L)	MW-6	2.94	n/a	10/3/2023	1.98	No	20	0	n/a	0.04456	NP Inter (normality)
Radium 226 + 228 (pCi/L)	MW-7	2.94	n/a	10/3/2023	0.593	No	20	0	n/a	0.04456	NP Inter (normality)
Radium 226 + 228 (pCi/L)	MW-10	2.94	n/a	10/3/2023	0.915	No	20	0	n/a	0.04456	NP Inter (normality)
Selenium (ug/L)	MW-5	1.5	n/a	10/2/2023	1.5ND	No	20	90	n/a	0.04456	NP Inter (NDs)
Selenium (ug/L)	MW-6	1.5	n/a	10/3/2023	1.5ND	No	20	90	n/a	0.04456	NP Inter (NDs)
Selenium (ug/L)	MW-7	1.5	n/a	10/3/2023	1.5ND	No	20	90	n/a	0.04456	NP Inter (NDs)
Selenium (ug/L)	MW-10	1.5	n/a	10/3/2023	1.5ND	No	20	90	n/a	0.04456	NP Inter (NDs)
Sulfate (mg/L)	MW-5	2180	n/a	10/2/2023	1950	No	21	0	n/a	0.04265	NP Inter (normality)
Sulfate (mg/L)	MW-6	2180	n/a	10/3/2023	3140	Yes	21	0	n/a	0.04265	NP Inter (normality)
Sulfate (mg/L)	MW-7	2180	n/a	10/3/2023	1630	No	21	0	n/a	0.04265	NP Inter (normality)
Sulfate (mg/L)	MW-10	2180	n/a	10/3/2023	4180	Yes	21	0	n/a	0.04265	NP Inter (normality)
Thallium (ug/L)	MW-5	1	n/a	10/2/2023	1ND	No	20	85	n/a	0.04456	NP Inter (NDs)
Thallium (ug/L)	MW-6	1	n/a	10/3/2023	1ND	No	20	85	n/a	0.04456	NP Inter (NDs)
Thallium (ug/L)	MW-7	1	n/a	10/3/2023	1ND	No	20	85	n/a	0.04456	NP Inter (NDs)
Thallium (ug/L)	MW-10	1	n/a	10/3/2023	1ND	No	20	85	n/a	0.04456	NP Inter (NDs)
Total Dissolved Solids (mg/L)	MW-5	1810	n/a	10/2/2023	3680	Yes	21	0	x^3	0.01	Param Inter
Total Dissolved Solids (mg/L)	MW-6	1810	n/a	10/3/2023	2820	Yes	21	0	x^3	0.01	Param Inter
Total Dissolved Solids (mg/L)	MW-7	1810	n/a	10/3/2023	2230	Yes	21	0	x^3	0.01	Param Inter
Total Dissolved Solids (mg/L)	MW-10	1810	n/a	10/3/2023	3180	Yes	21	0	x^3	0.01	Param Inter

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 Hollow symbols indicate censored values.

Within Limit

## Prediction Limit

Interwell Non-parametric



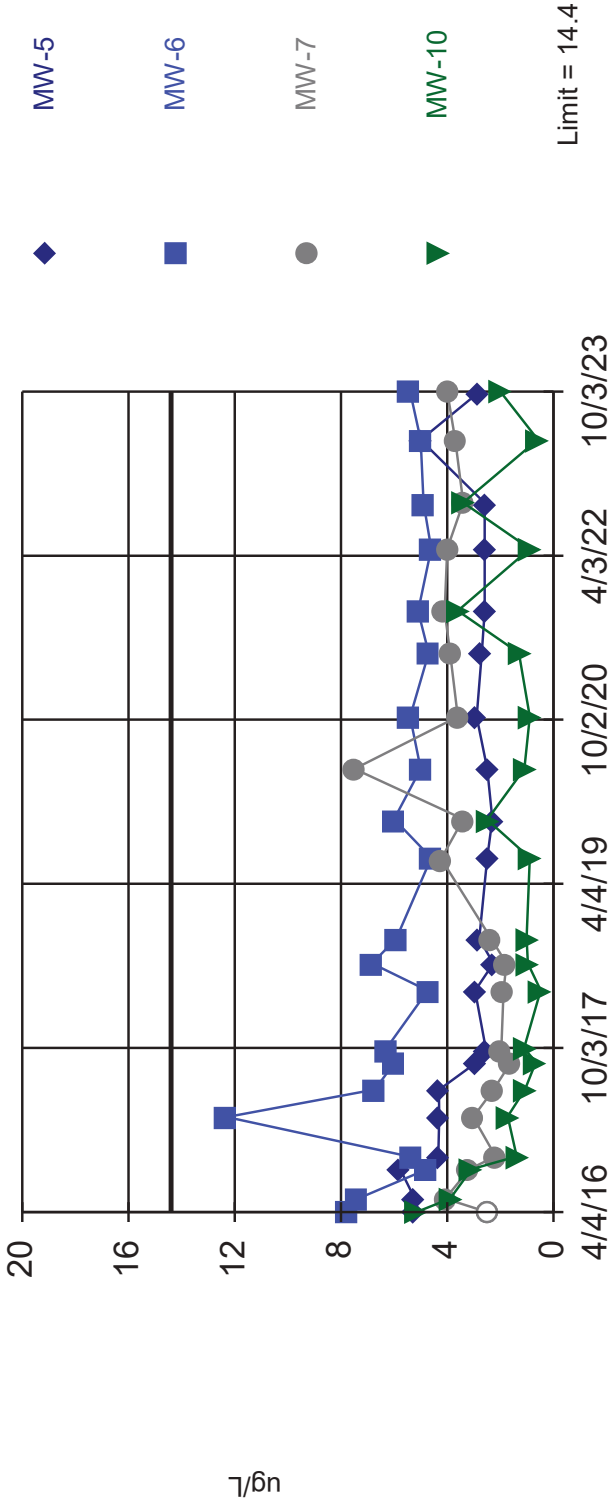
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 20 background values. 65% NDs. Report alpha = 0.1667. Individual comparison alpha = 0.04456. Most recent point for each compliance well compared to limit. Distribution was found to be non-normal after removal of suspect values, so outliers could not be identified. Insufficient data to test for seasonality; data will not be deseasonalized.

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 Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



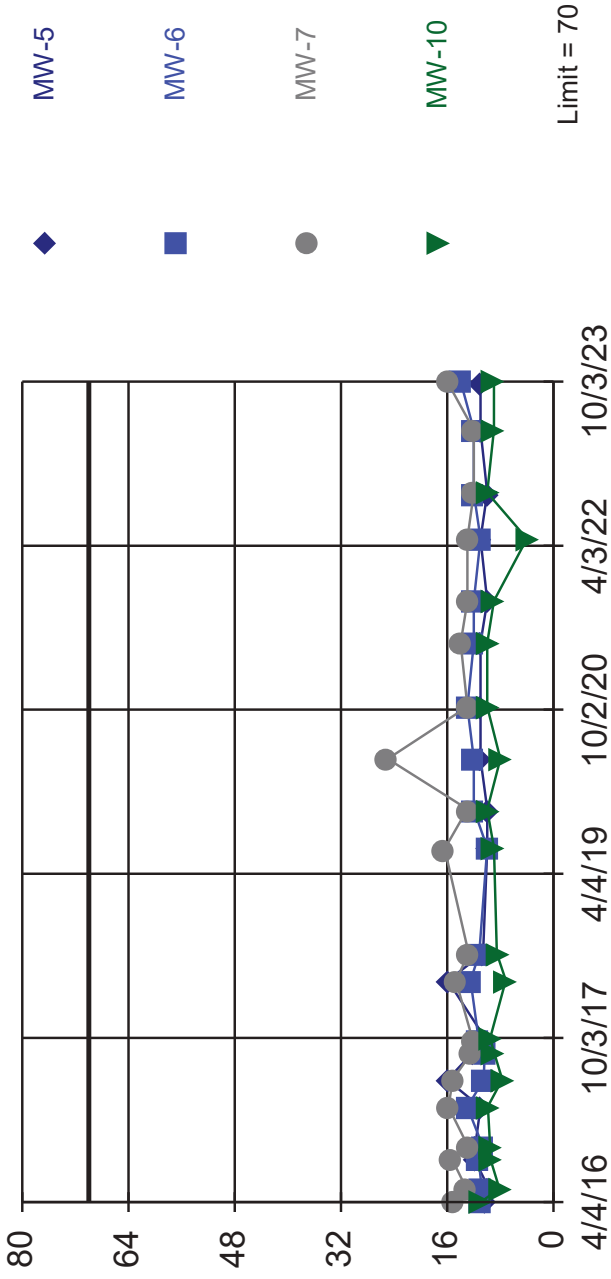
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 21 background values. Report alpha = 0.16. Individual comparison alpha = 0.04265. Most recent point for each compliance well compared to limit. Distribution was found to be non-normal after removal of suspect values, so outliers could not be identified. Insufficient data to test for seasonality; data will not be deseasonalized.

Constituent: Arsenic Analysis Run 1/12/2024 11:54 AM View: Original Wells  
 Big Rivers Electric Corp. Data: BREC\_GW\_v2

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 20 background values. Report alpha = 0.1667. Individual comparison alpha = 0.04456. Most recent point for each compliance well compared to limit. After outlier removal distribution was non-normal, so outlier results were invalidated. Insufficient data to test for seasonality; data will not be deseasonalized.

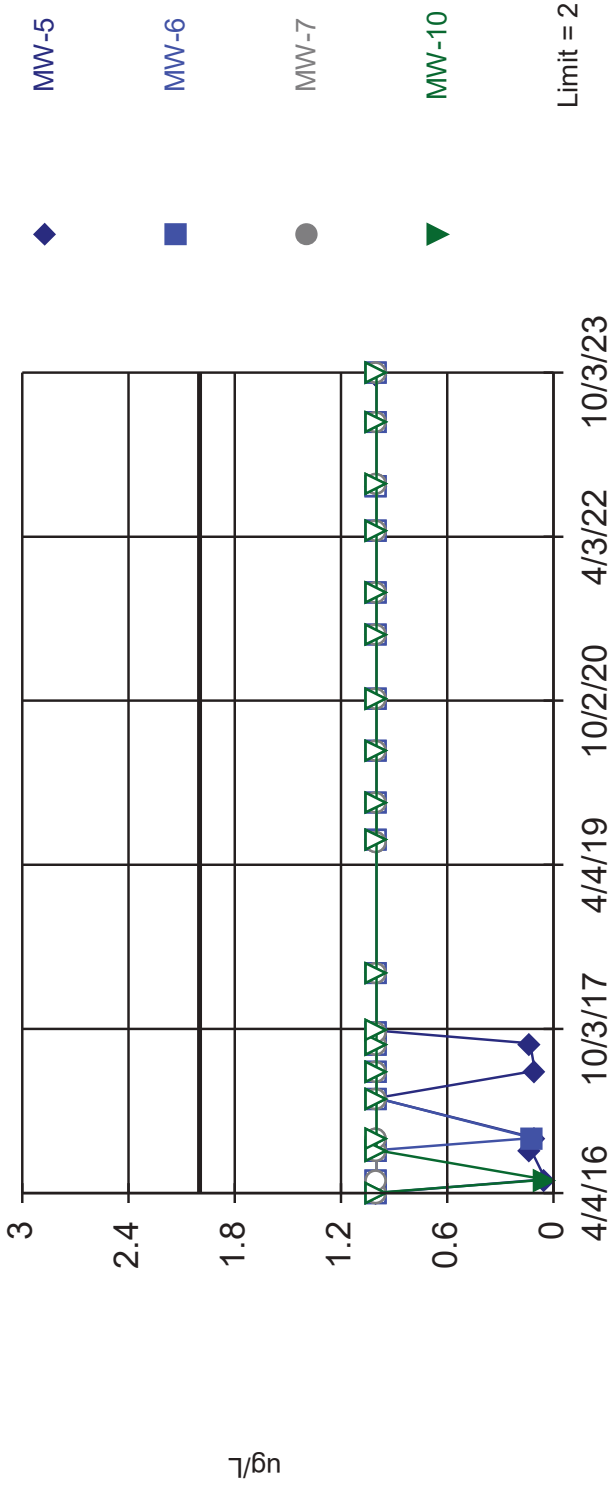
Constituent: Barium Analysis Run 1/12/2024 11:54 AM View: Original Wells

Big Rivers Electric Corp. Data: BREC\_GW\_v2

Within Limit

### Prediction Limit

Interwell Non-parametric



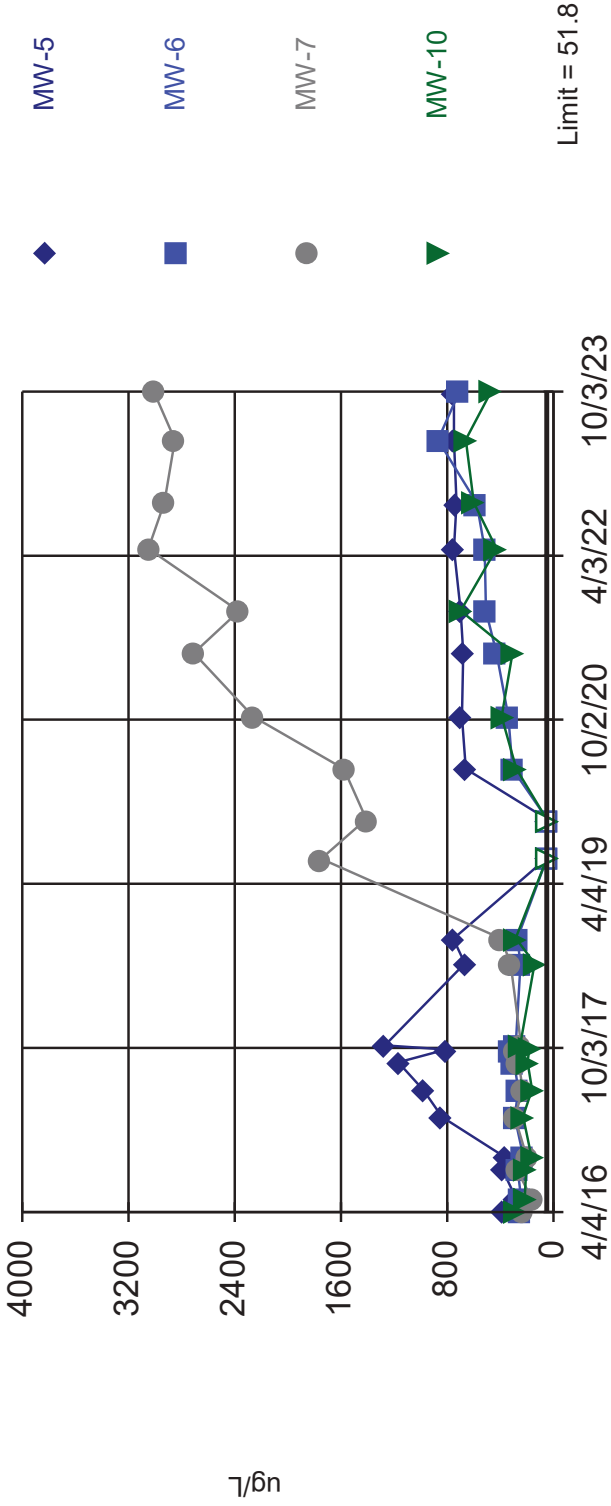
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 19) were censored; limit is most recent reporting limit. Report alpha = 0.1739. Individual comparison alpha = 0.04664. Most recent point for each compliance well compared to limit. Distribution was found to be non-normal after removal of suspect values, so outliers could not be identified. Insufficient data to test for seasonality; data will not be deseasonalized.

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 Hollow symbols indicate censored values.

Exceeds Limit: MW-5, MW-6, MW-7, MW-10

### Prediction Limit

Interwell Non-parametric



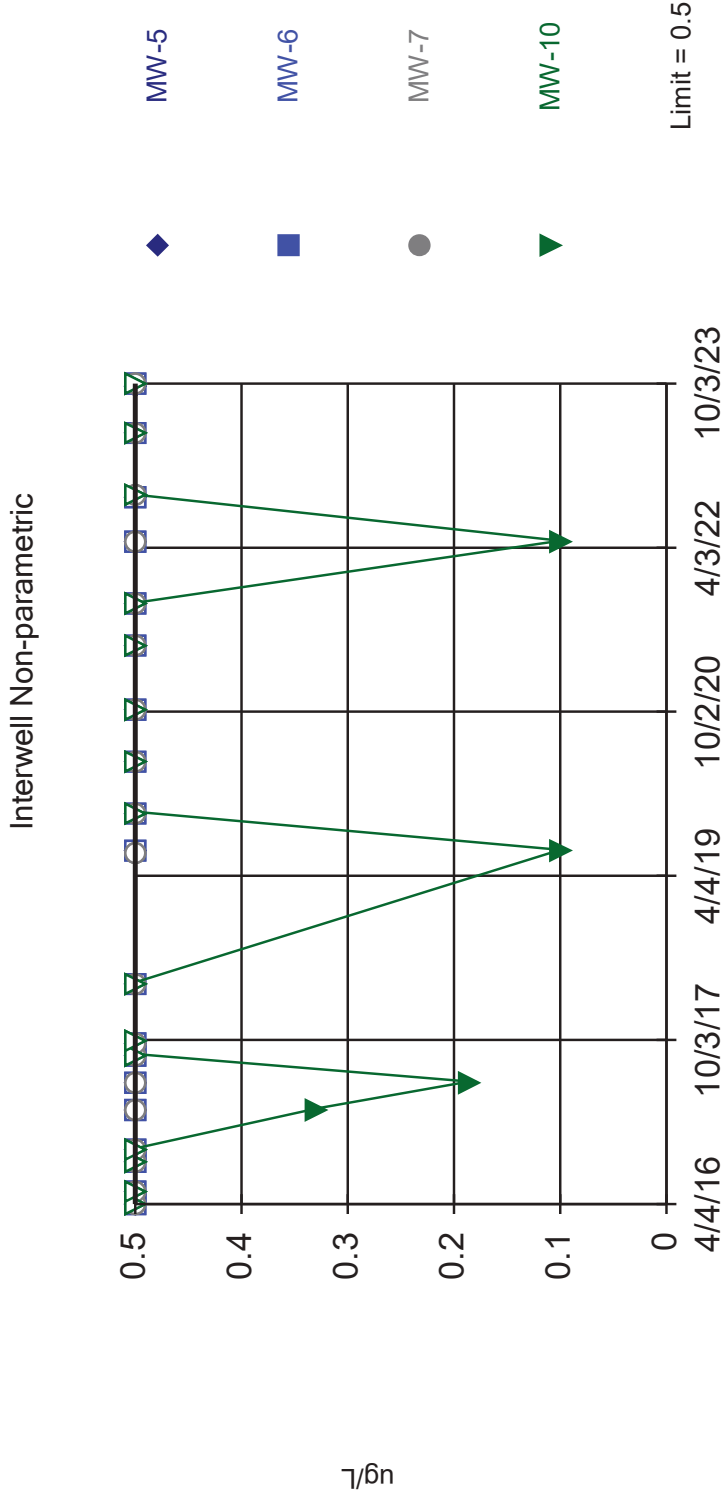
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 20 background values. 45% NDs. Report alpha = 0.1667. Individual comparison alpha = 0.04456. Most recent point for each compliance well compared to limit. Distribution was found to be non-normal after removal of suspect values, so outliers could not be identified. Insufficient data to test for seasonality; data will not be deseasonalized.

Constituent: Boron Analysis Run 1/12/2024 11:54 AM View: Original Wells

Big Rivers Electric Corp. Data: BREC\_GW\_v2

Within Limit

Prediction Limit

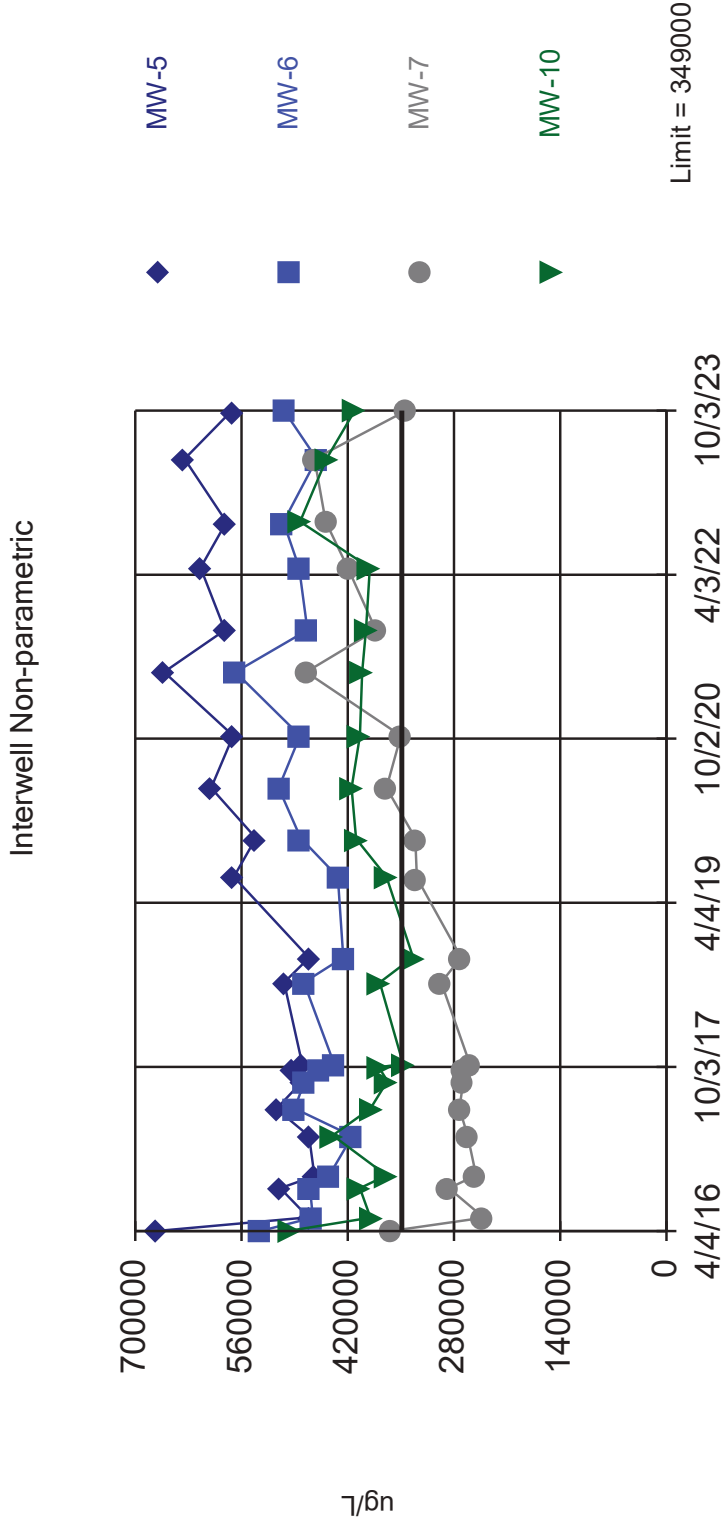


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 19 background values. 89.47% NDs. Report alpha = 0.1739. Individual comparison alpha = 0.04664. Most recent point for each compliance well compared to limit. Distribution was found to be non-normal after removal of suspect values, so outliers could not be identified. Insufficient data to test for seasonality; data will not be deseasonalized.



Exceeds Limit: MW-5, MW-6, MW-10

Prediction Limit



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 21 background values. Report alpha = 0.16. Individual comparison alpha = 0.04265. Most recent point for each compliance well compared to limit. Distribution was found to be non-normal after removal of suspect values, so outliers could not be identified. Insufficient data to test for seasonality; data will not be deseasonalized.

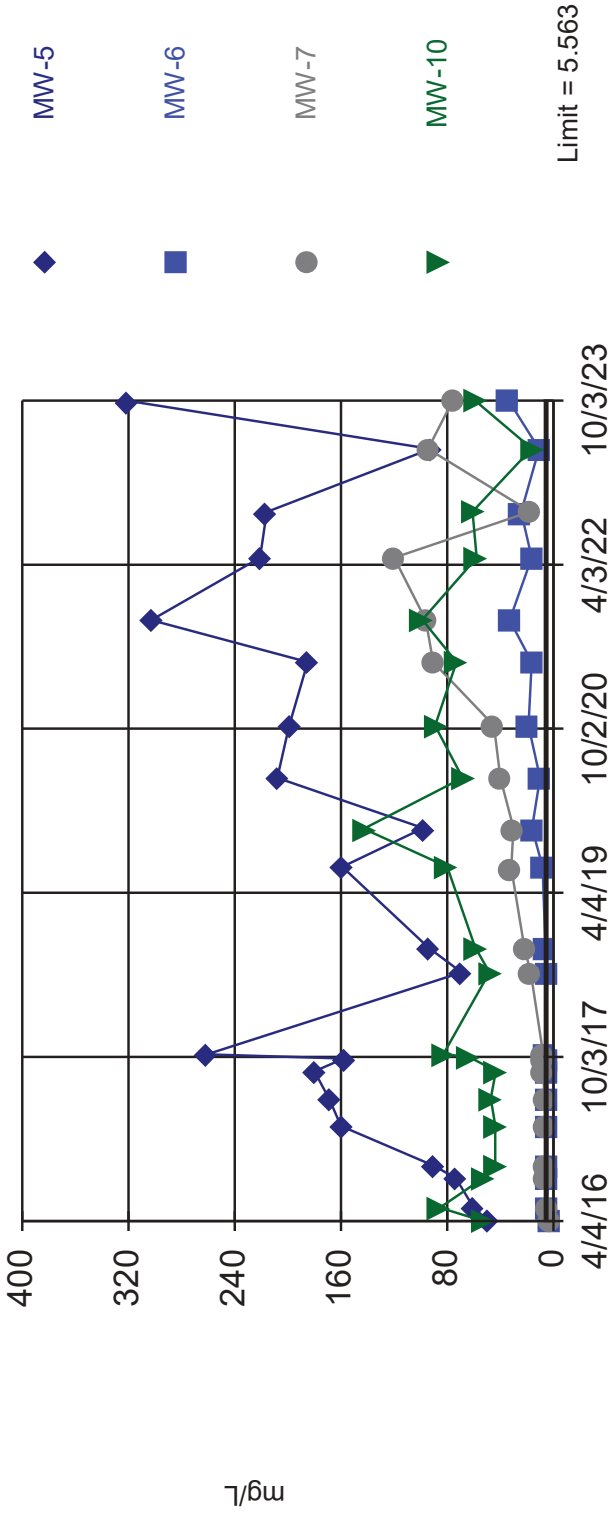
Constituent: Calcium Analysis Run 1/12/2024 11:54 AM View: Original Wells

Big Rivers Electric Corp. Data: BREC\_GW\_v2

Exceeds Limit: MW-5, MW-6, MW-7, MW-10

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=4.249, Std. Dev.=0.5077, n=21. Insufficient data to test for seasonality; not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9186, critical = 0.908. Report alpha = 0.0394. Individual comparison alpha = 0.01. Most recent point for each compliance well compared to limit. EPA 1989 outlier screening was performed on the background data. No background outliers were found.

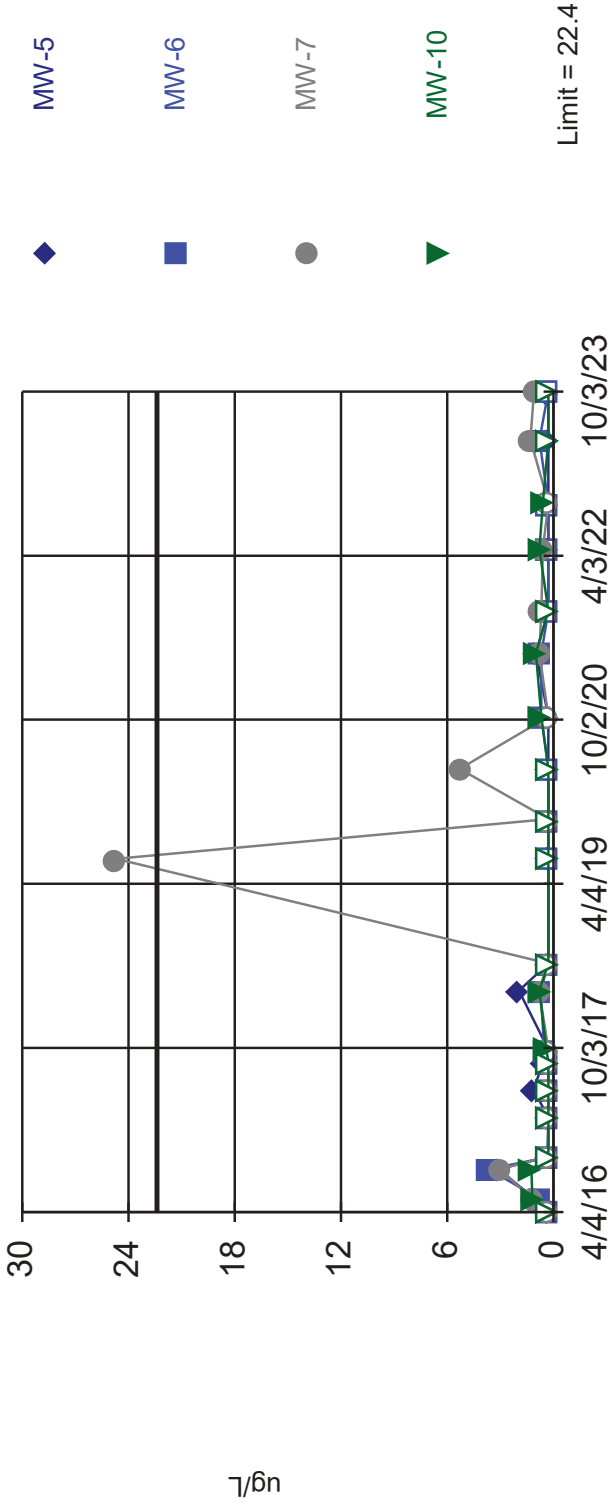
Constituent: Chloride Analysis Run 1/12/2024 11:54 AM View: Original Wells

Big Rivers Electric Corp. Data: BREC\_GW\_v2

Within Limit

Prediction Limit

Interwell Non-parametric



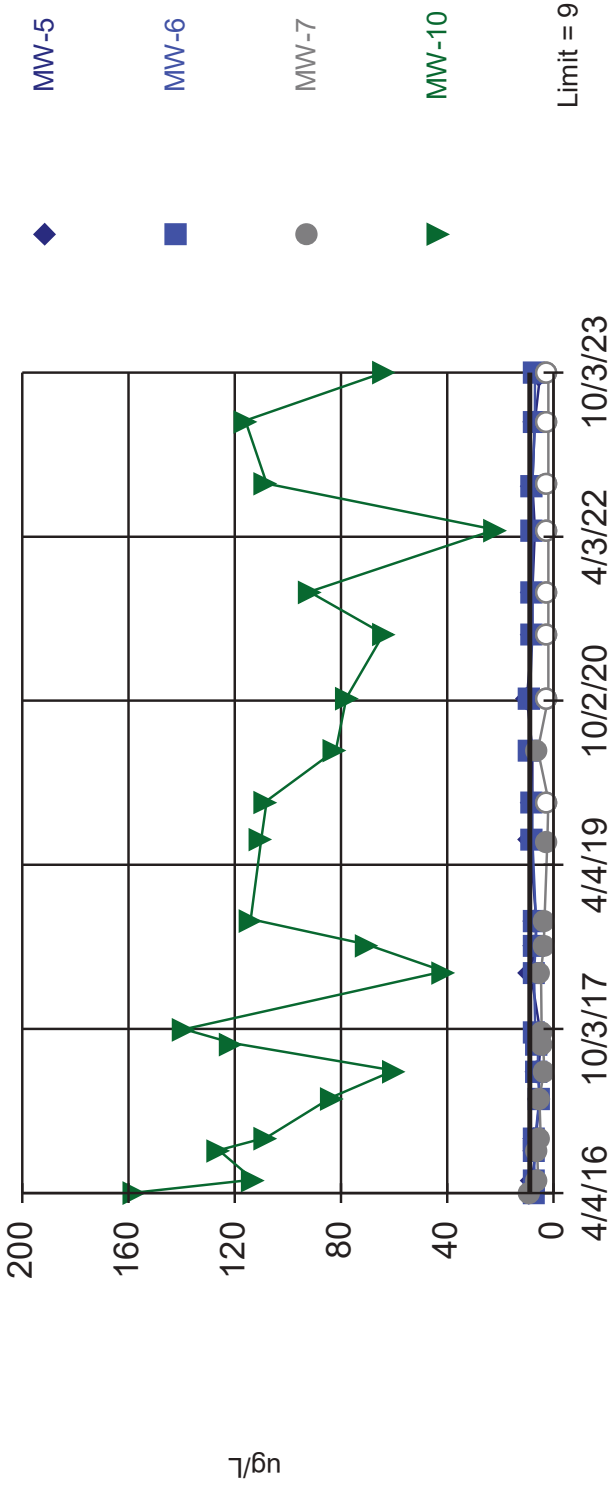
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 20 background values. 35% NDs. Report alpha = 0.1667. Individual comparison alpha = 0.04456. Most recent point for each compliance well compared to limit. After outlier removal distribution was non-normal, so outlier results were invalidated. Insufficient data to test for seasonality; data will not be deseasonalized.

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Hollow symbols indicate censored values.

Exceeds Limit: MW-10

## Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 20 background values. 45% NDs. Report alpha = 0.1667. Individual comparison alpha = 0.04456. Most recent point for each compliance well compared to limit. After outlier removal distribution was non-normal, so outlier results were invalidated. Insufficient data to test for seasonality; data will not be deseasonalized.

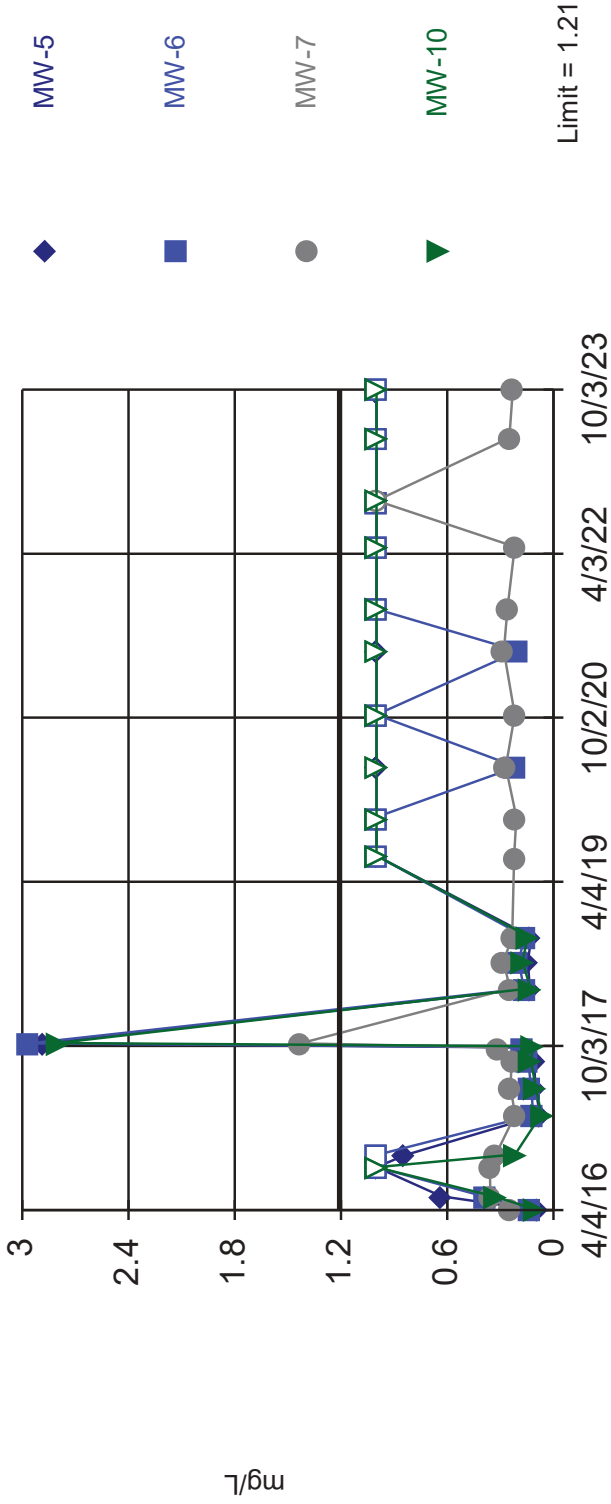
Constituent: Cobalt Analysis Run 1/12/2024 11:54 AM View: Original Wells

Big Rivers Electric Corp. Data: BREC\_GW\_v2

Within Limit

Prediction Limit

Interwell Non-parametric

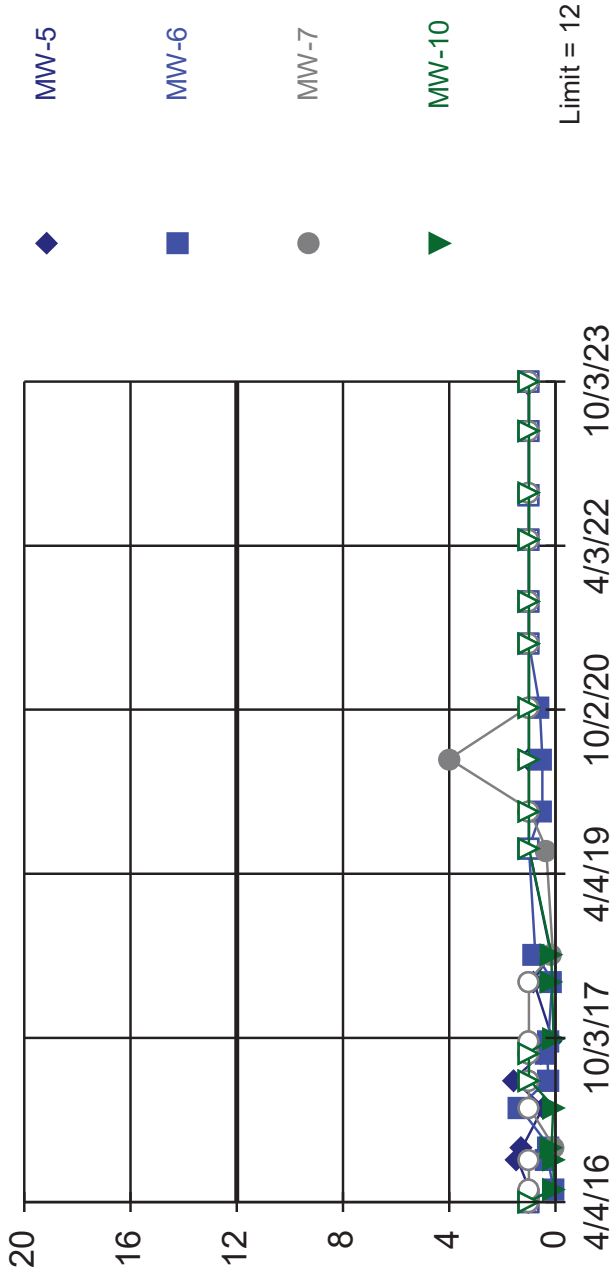


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 22 background values. 9.091% NDs. Report alpha = 0.1538. Individual comparison alpha = 0.0409. Most recent point for each compliance well compared to limit. Distribution was found to be non-normal after removal of suspect values, so outliers could not be identified. Insufficient data to test for seasonality; data will not be deseasonalized.

Within Limit

Prediction Limit

Interwell Non-parametric



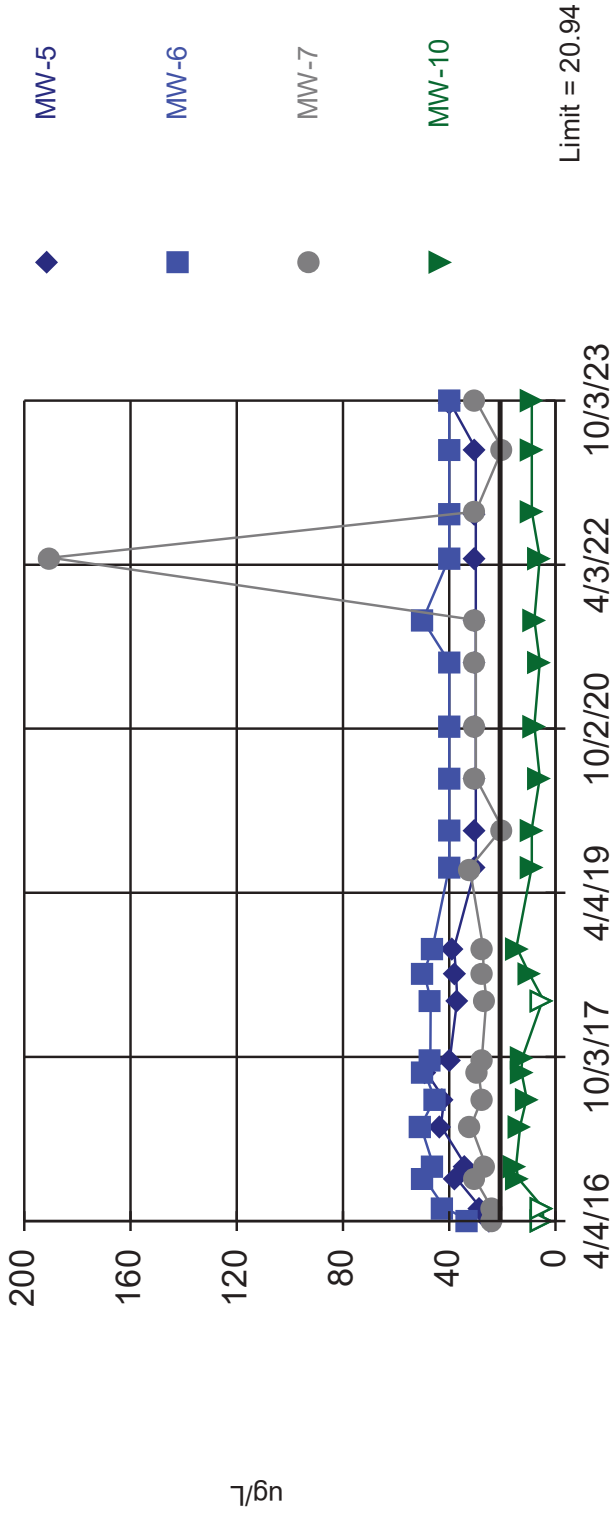
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 20 background values. 65% NDs. Report alpha = 0.1667. Individual comparison alpha = 0.04456. Most recent point for each compliance well compared to limit. After outlier removal distribution was non-normal, so outlier results were invalidated. Insufficient data to test for seasonality; data will not be deseasonalized.

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 Hollow symbols indicate censored values.

Exceeds Limit: MW-5, MW-6, MW-7

### Prediction Limit

Interwell Parametric



Background Data Summary (after Cohen's Adjustment): Mean=10.79, Std. Dev.=3.921, n=21, 19.05% NDs. Insufficient data to test for seasonality; not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9085, critical = 0.908. Report alpha = 0.0394. Individual comparison alpha = 0.01. Most recent point for each compliance well compared to limit. EPA 1989 outlier screening was performed on the background data. No background outliers were found.

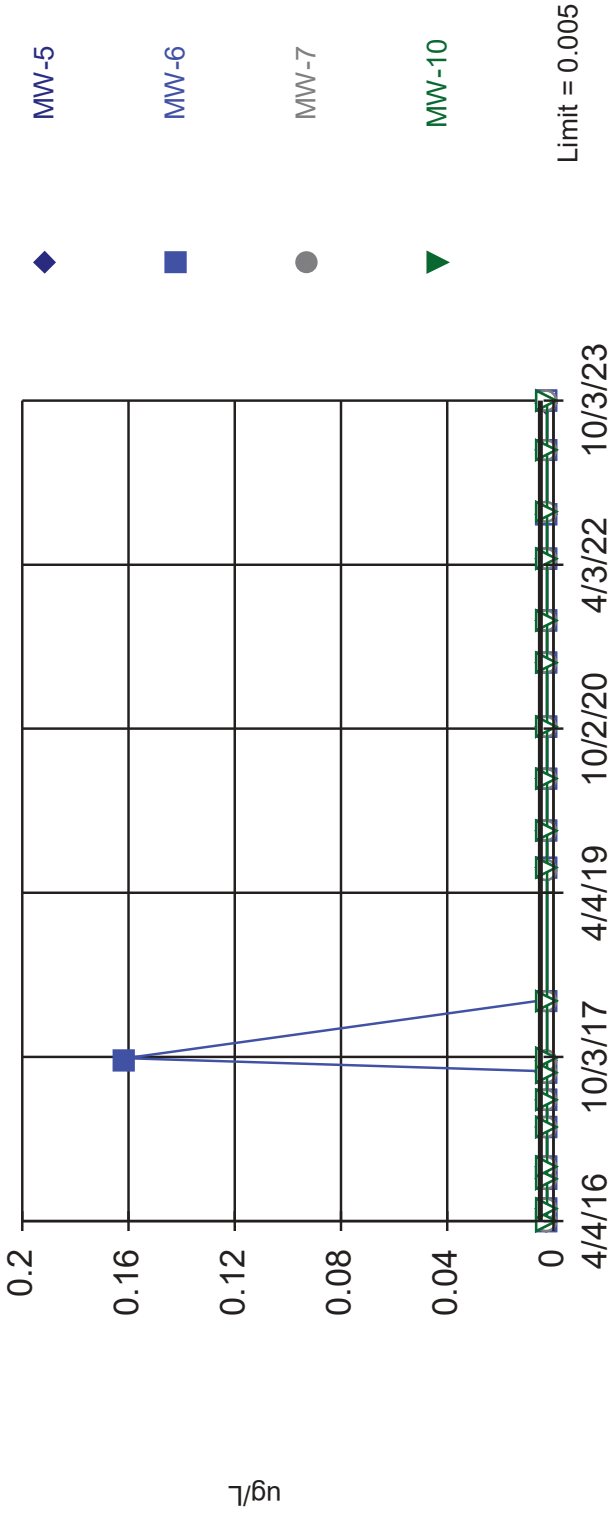
Constituent: Lithium Analysis Run 1/12/2024 11:54 AM View: Original Wells

Big Rivers Electric Corp. Data: BREC\_GW\_v2

Within Limit

Prediction Limit

Interwell Non-parametric



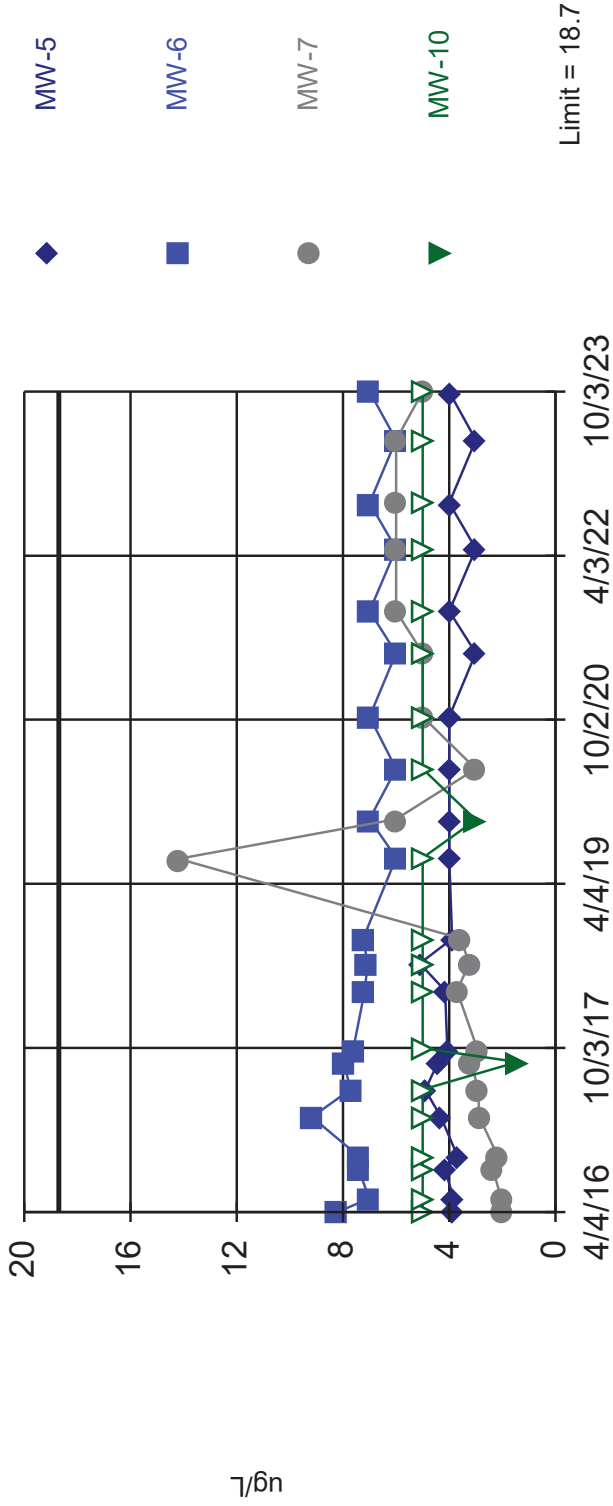
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 19) were censored; limit is most recent reporting limit. Report alpha = 0.1739. Individual comparison alpha = 0.04664. Most recent point for each compliance well compared to limit. Distribution was found to be non-normal after removal of suspect values, so outliers could not be identified. Insufficient data to test for seasonality; data will not be deseasonalized.



Within Limit

Prediction Limit

Interwell Non-parametric

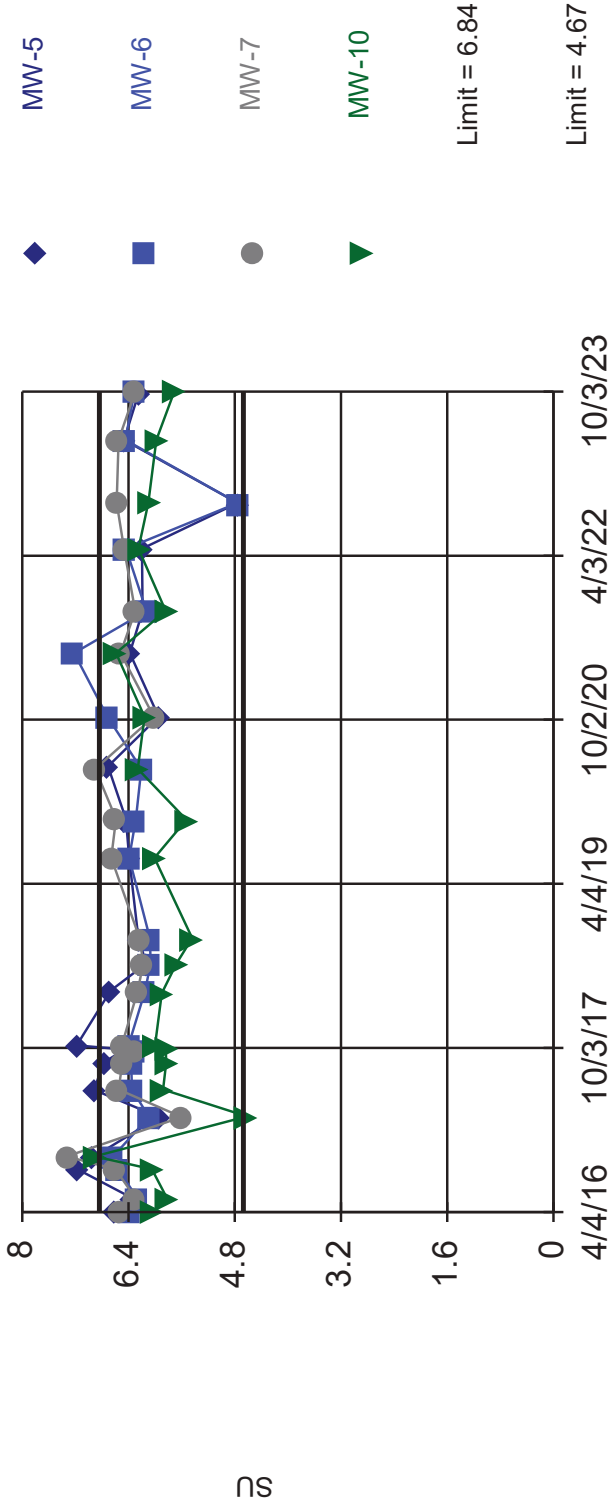


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 21 background values. Report alpha = 0.16. Individual comparison alpha = 0.04265. Most recent point for each compliance well compared to limit. Distribution was found to be non-normal after removal of suspect values, so outliers could not be identified. Insufficient data to test for seasonality; data will not be deseasonalized.

Within Limits

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limits are highest and lowest of 22 background values. Report alpha = 0.3077. Individual comparison alpha = 0.08181. Most recent point for each compliance well compared to limit. Distribution was found to be non-normal after removal of suspect values, so outliers could not be identified. Insufficient data to test for seasonality; data will not be deseasonalized.

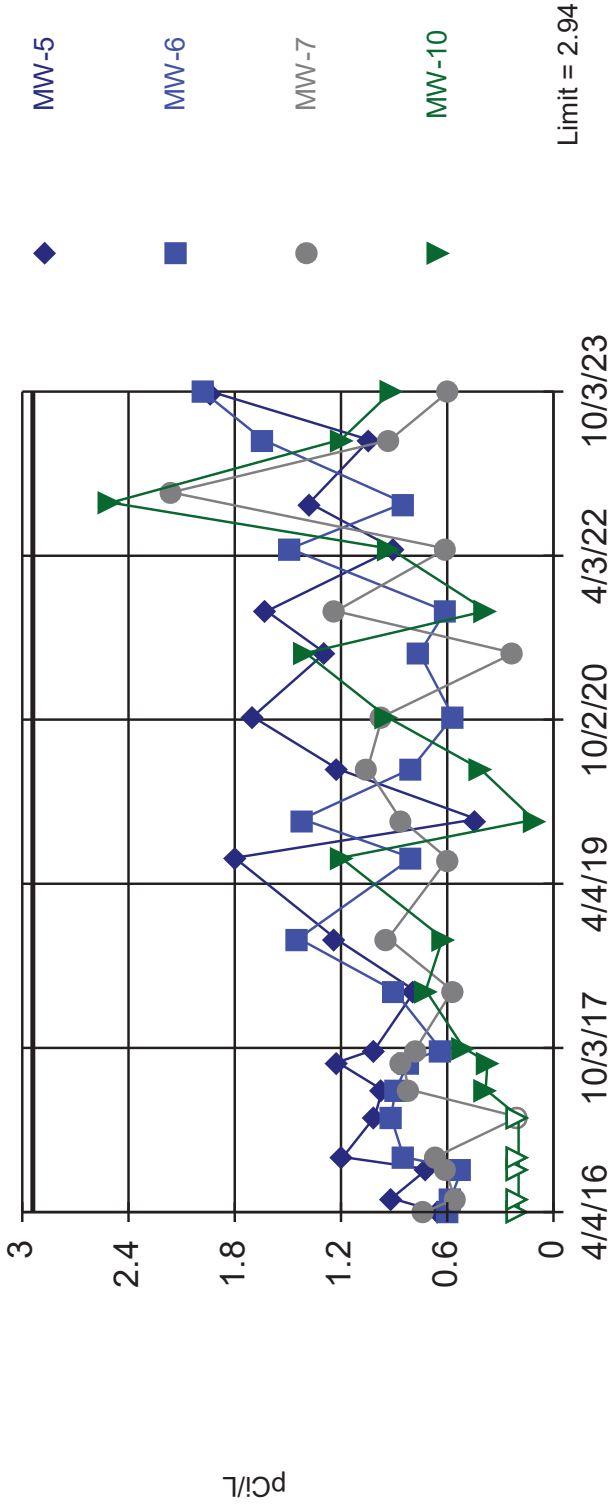
Constituent: pH [Field] Analysis Run 1/12/2024 11:54 AM View: Original Wells

Big Rivers Electric Corp. Data: BREC\_GW\_v2

Within Limit

Prediction Limit

Interwell Non-parametric

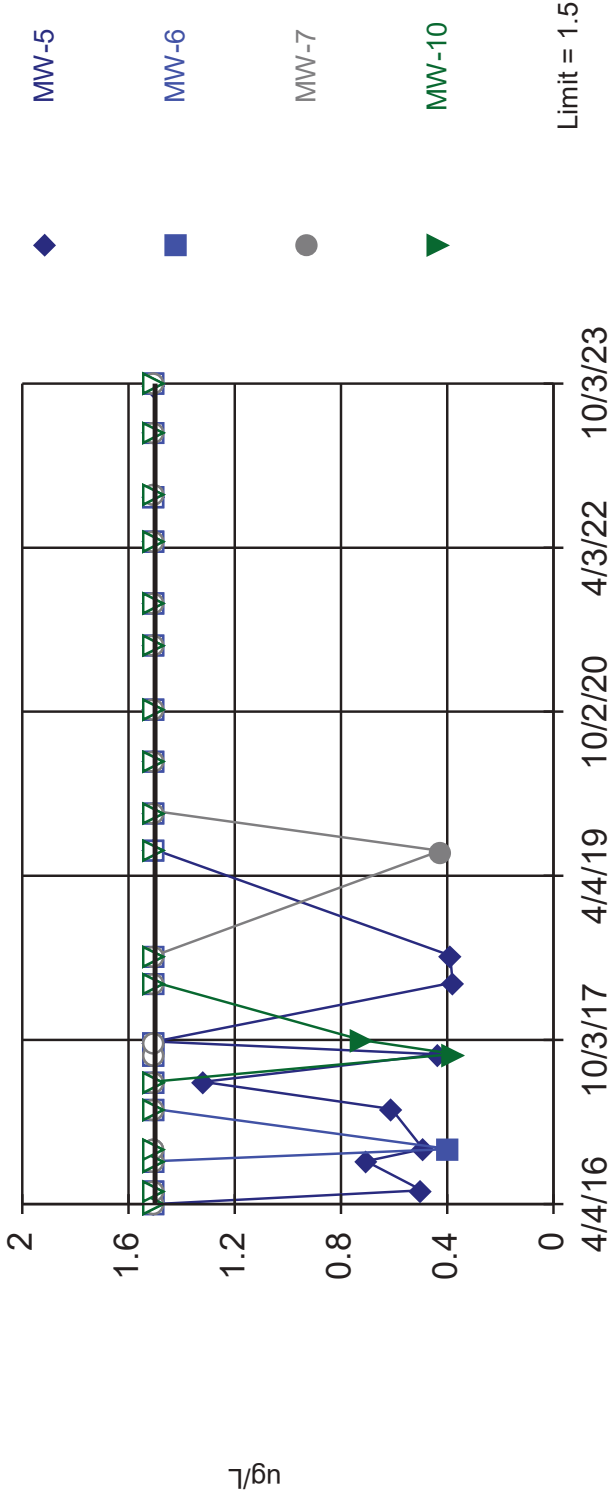


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 20 background values. Report alpha = 0.1667. Individual comparison alpha = 0.04456. Most recent point for each compliance well compared to limit. Distribution was found to be non-normal after removal of suspect values, so outliers could not be identified. Insufficient data to test for seasonality; data will not be deseasonalized.

Within Limit

## Prediction Limit

Interwell Non-parametric

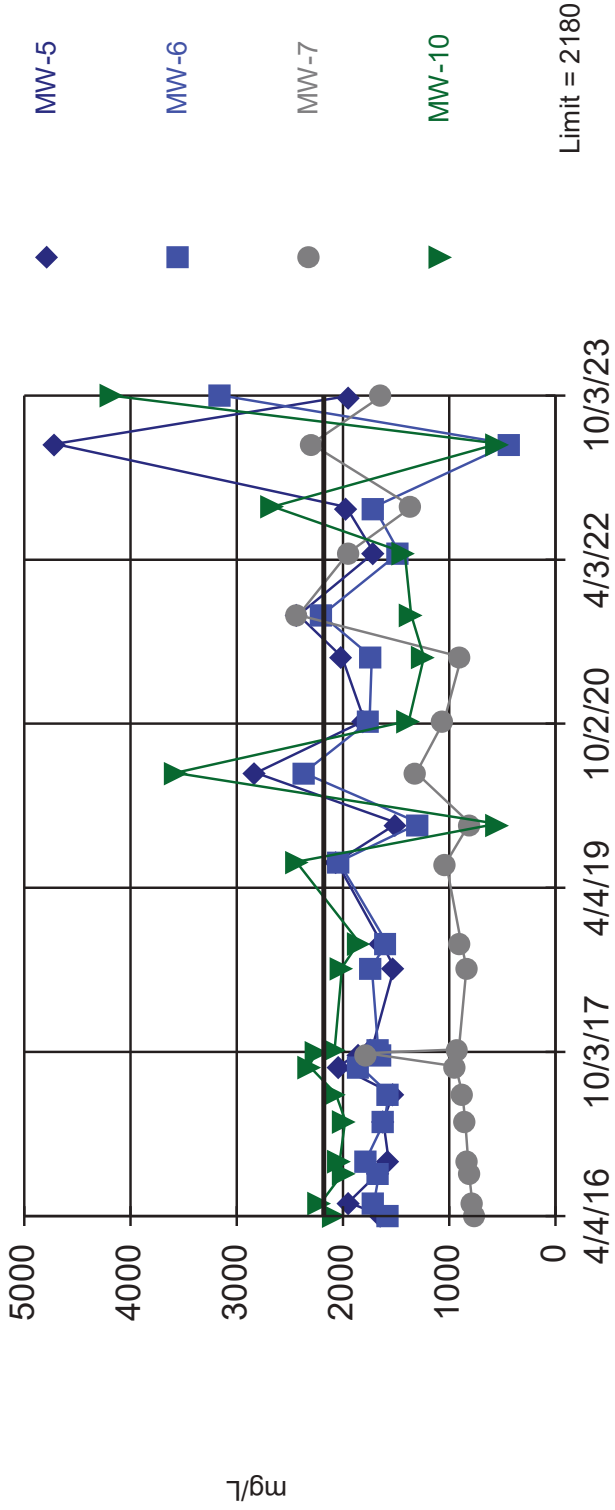


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 20 background values. 90% NDs. Report alpha = 0.1667. Individual comparison alpha = 0.04456. Most recent point for each compliance well compared to limit. After outlier removal distribution was non-normal, so outlier results were invalidated. Insufficient data to test for seasonality; data will not be deseasonalized.

Exceeds Limit: MW-6, MW-10

Prediction Limit

Interwell Non-parametric

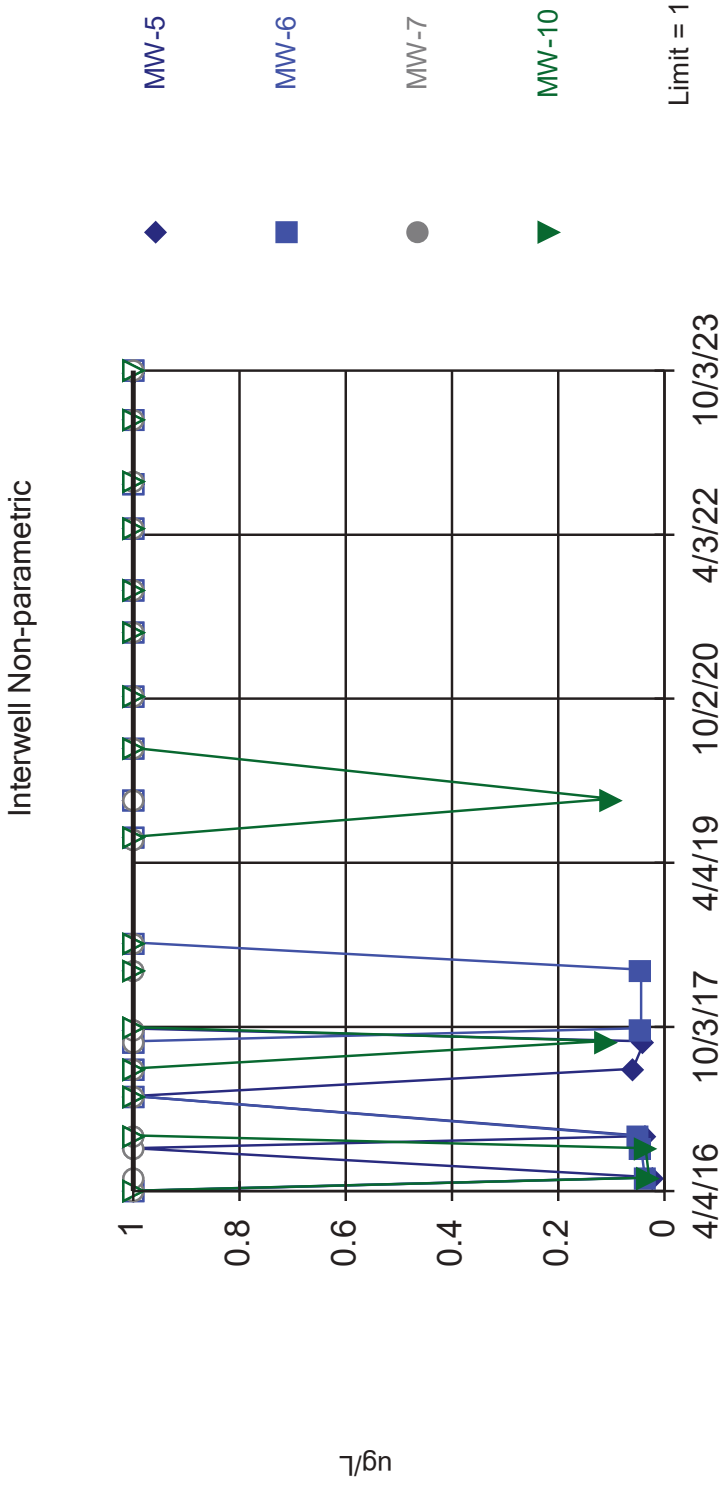


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 21 background values. Report alpha = 0.16. Individual comparison alpha = 0.04265. Most recent point for each compliance well compared to limit. Distribution was found to be non-normal after removal of suspect values, so outliers could not be identified. Insufficient data to test for seasonality; data will not be deseasonalized.

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 Hollow symbols indicate censored values.

Within Limit

### Prediction Limit

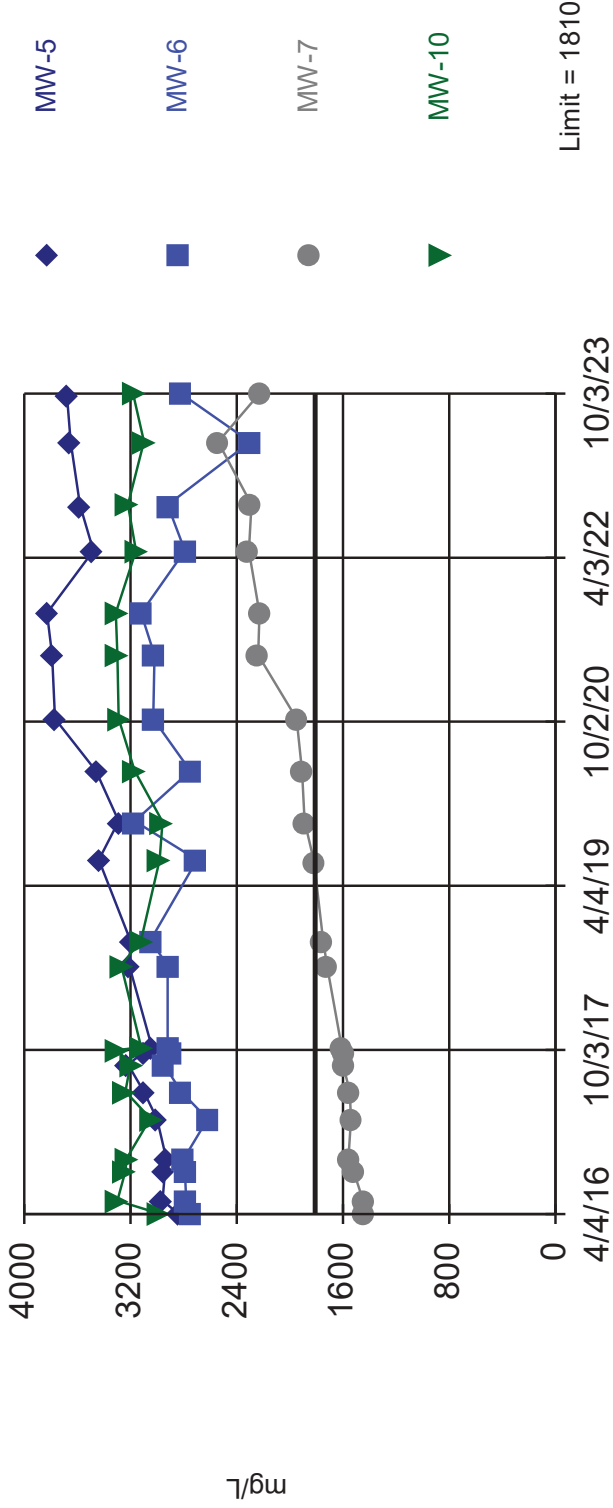


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 20 background values. 85% NDs. Report alpha = 0.1667. Individual comparison alpha = 0.04456. Most recent point for each compliance well compared to limit. After outlier removal distribution was non-normal, so outlier results were invalidated. Insufficient data to test for seasonality; data will not be deseasonalized.

Exceeds Limit: MW-5, MW-6, MW-7, MW-10

Prediction Limit

Interwell Parametric



Background Data Summary (based on cube transformation): Mean=3.8e9, Std. Dev.=8.3e8, n=21. Insufficient data to test for seasonality; not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9337, critical = 0.908. Report alpha = 0.0394. Individual comparison alpha = 0.01. Most recent point for each compliance well compared to limit. Distribution was found to be non-normal after removal of suspect values, so outliers could not be identified.

Constituent: Total Dissolved Solids Analysis Run 1/12/2024 11:54 AM View: Original Wells

Big Rivers Electric Corp. Data: BREC\_GW\_v2

# Confidence Interval

Big Rivers Electric Corp. Data: BREC\_GW\_v2 Printed 1/10/2024, 11:32 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Cobalt (ug/L)	MW-5	7.771	6.658	9	No	21	0	No	0.05	Param.
Cobalt (ug/L)	MW-6	7.663	6.95	9	No	21	0	No	0.05	Param.
Cobalt (ug/L)	MW-7	4.68	2	9	No	21	38.1	No	0.05	NP (normality)
Cobalt (ug/L)	MW-8 (bg)	2	1.13	9	No	21	42.86	No	0.05	NP (normality)
<b>Cobalt (ug/L)</b>	<b>MW-10</b>	<b>106.7</b>	<b>81.74</b>	<b>9</b>	<b>Yes</b>	<b>21</b>	<b>0</b>	<b>No</b>	<b>0.05</b>	<b>Param.</b>
Lithium (ug/L)	MW-5	36.62	31.99	40	No	21	0	No	0.05	Param.
<b>Lithium (ug/L)</b>	<b>MW-6</b>	<b>45.45</b>	<b>41.76</b>	<b>40</b>	<b>Yes</b>	<b>21</b>	<b>0</b>	<b>No</b>	<b>0.05</b>	<b>Param.</b>
Lithium (ug/L)	MW-7	30	27.1	40	No	21	0	No	0.05	NP (normality)
Lithium (ug/L)	MW-8 (bg)	12.27	9.316	40	No	21	19.05	No	0.05	Param.
Lithium (ug/L)	MW-10	10.63	8.115	40	No	21	14.29	No	0.05	Param.



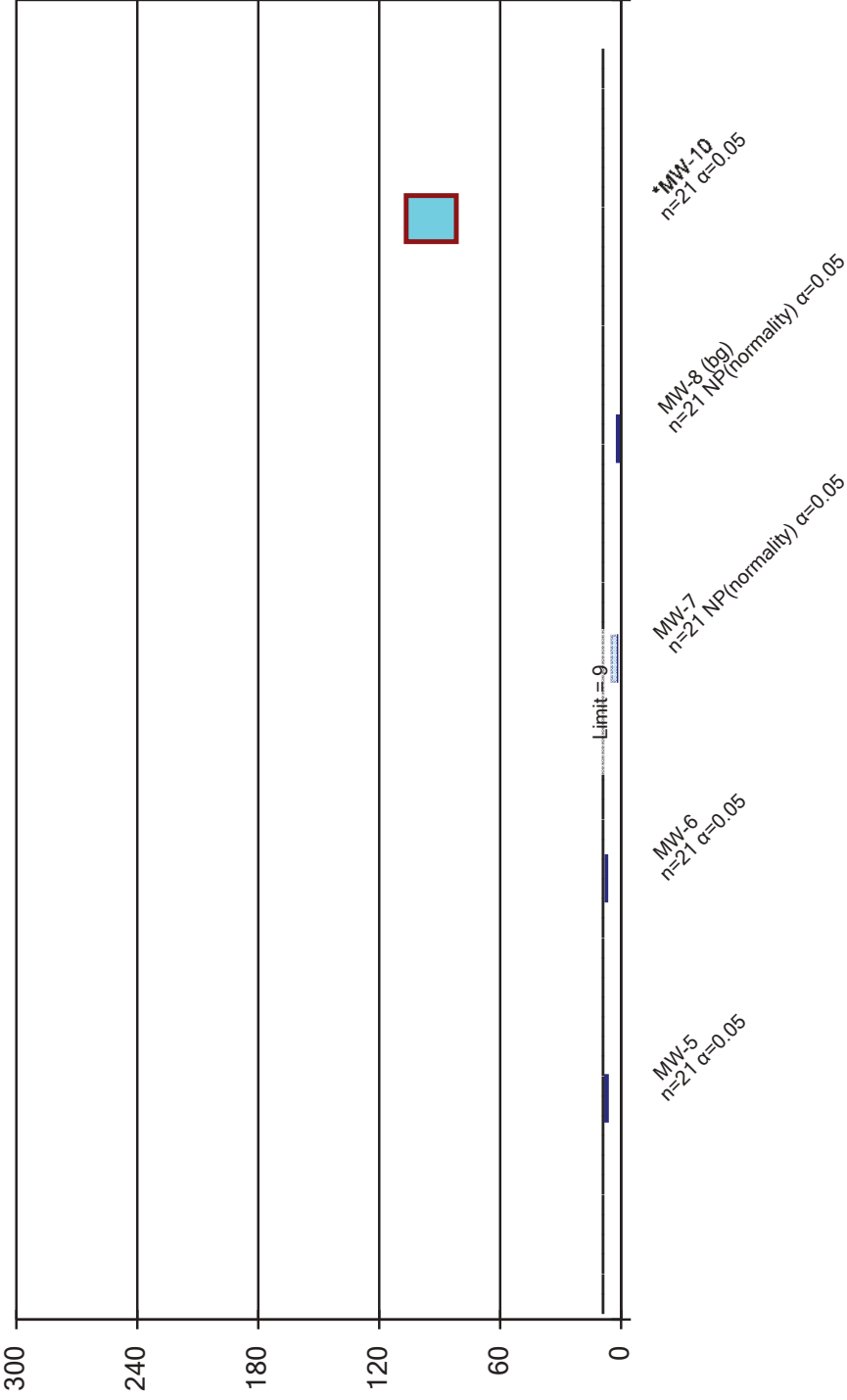
# Confidence Interval

Big Rivers Electric Corp. Data: BREC\_GW\_v2 Printed 1/10/2024, 11:10 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Cobalt (ug/L)	MW-10	106.7	81.74	9	Yes	21	0	No	0.05	Param.
Lithium (ug/L)	MW-6	45.45	41.76	40	Yes	21	0	No	0.05	Param.

## Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.\* Normality Test: Shapiro Wilk, alpha based on n.



## Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.\* Normality Test: Shapiro Wilk, alpha based on n.

