Entergy Arkansas, LLC
White Bluff Steam Electric Station
Recycle Ponds

2024 Annual Groundwater Monitoring and Corrective Action Report

Prepared in Compliance with the EPA Final Rule for the Disposal of Coal Combustion Residuals Title 40 CFR Part 257

Prepared for:

PO Box 551
Little Rock, Arkansas 72203

Prepared by:

4545 Sherwood Common Blvd.
Building 3, Suite A
Baton Rouge, LA 70816

January 31, 2025

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EXECUTIVE SUMMARY

Entergy Arkansas, LLC (EAL), operated two recycle ponds as part of its process water system for bottom ash transport at the White Bluff Steam Electric Station (Plant) located near Redfield, Arkansas. The recycle ponds provided intermediate storage of waters used in the transport of coal combustion residuals (CCR) generated from the combustion of coal at the Plant. Pond A commenced closure as of October 2018 and Pond B commenced closure as of February 2021. Closure by removal was completed in the first half of 2022. The certified closure of the two recycle ponds was completed on October 2, 2023. Management of the CCR at the recycle ponds is performed pursuant to national criteria established in Title 40 of the Code of Federal Regulations (40 CFR), Part 257 (CCR Rule), effective April 19, 2015 and subsequent revisions to the CCR Rule.

The ponds remained in detection monitoring prior to closure. Because the unit completed closure by removal, further detection monitoring is not required. Two consecutive monitoring events of Appendix IV constituents were conducted in 2024, specifically to confirm that there were no Appendix IV constituents detected at statistically significant levels above the GWPS and demonstrate that the ponds were closed in accordance with 40 CFR 257.102. The plant initially identified the following potential SSLs: (*list per comment above*). Alternate source demonstrations ("ASDs") were performed for the potential SSLs and are attached to this report. Each of the ASDs performed were successful, and the Plant updated the closure certification in November 2024 to incorporate the 2024 monitoring results. The recycle ponds CCR Unit remained closed by removal for the duration of 2024

As indicated above, the potential SSLs identified during the monitoring events are detailed in the tables below.

Table 1 Potential SSLs July 2024 Monitoring Event

Well	Date	Analyte	Confirmed SSL? (Yes/No)
RP-4	07/2024	Barium	No
RP-4	7/2024	Molybdenum	No
RP-9	7/2024	Fluoride	No
RP-10	7/2024	Fluoride	No

Table 2 Potential SSLs October 2024 Monitoring Event			
Well	**Date**	**Analyte**	**Confirmed SSL? (Yes/No)**
RP-4	10/2024	Barium	No
RP-4	10/2024	Molybdenum	No
RP-9	10/2024	Fluoride	No
RP-10	10/2024	Fluoride	No

1. INTRODUCTION

Entergy Arkansas, LLC (EAL), operated two recycle ponds as part of its process water system for bottom ash transport at the Plant located near Redfield, Arkansas (Lat: 34.421658 / Long: -92.139455). The recycle ponds provided intermediate storage of waters used in the transport of CCR generated from the combustion of coal at the Plant. Pond A commenced closure as of October 2018 and the Pond B commenced closure as of February 2021. Closure by removal was completed in the first half of 2022. The certified closure of two recycle ponds was completed on October 2, 2023. The recycle ponds are managed in accordance with the national criteria established in the CCR Rule. EAL installed a groundwater monitoring system at the recycle ponds CCR Unit that is subject to the groundwater monitoring and corrective action requirements provided under §257.90 through §257.98 of the CCR rule. In accordance with §257.90(e) of the CCR rule, EAL must prepare an annual report that provides information regarding the groundwater monitoring and corrective action program at the recycle ponds CCR Unit.

2. GROUNDWATER MONITORING SYSTEM

The recycle ponds CCR unit groundwater monitoring system consists of 10 monitoring wells as shown on Figure 1 included in Appendix A. Pursuant to §257.91(f) of the CCR rule, a qualified Arkansas-registered professional engineer has certified the groundwater monitoring system, which was designed and constructed to meet the requirements of §257.91.

3. INSTALLED OR DECOMISSIONED WELLS DURING 2024

EAL did not install any new wells or decommission any existing wells in the certified groundwater monitoring system during 2024.

4. GROUNDWATER MONITORING DATA

In accordance with §257.90(e)(3), all monitoring data obtained under §257.90 through §257.98 during 2024 are provided in Appendix B and C. Monitoring data includes:

- Summary of the number of groundwater samples that were collected for analysis for each background and downgradient well;
- Dates the samples were collected;
- Whether the sample was collected as part of detection or assessment monitoring;
- Potentiometric maps showing groundwater flow direction for each monitoring event and table of groundwater level measurements; and
- Summary table of CCR Rule constituent results.

5. STATUS SUMMARY OF THE 2024 GROUNDWATER MONITORING PROGRAM

Groundwater monitoring was performed in accordance with the monitoring requirements of §257.95. A summary of activities related to groundwater monitoring performed during 2024 is provided in the list below:

- Two supplemental monitoring events were performed during July and October of 2024 for analysis of Appendix IV parameters.

- Statistical evaluation of the monitoring data was performed in accordance with the statistical method certified by a qualified Arkansas-registered professional engineer. The certified statistical method has been posted to EAL's CCR Rule Compliance Data and Information website.

- Statistical evaluation of the monitoring data identified eight SSLs during the July and October monitoring events.

- EAL completed a successful alternate source demonstration (ASD) per §257.95(g)(3)(ii) in response to potential statistically significant increases (SSLs) identified during the statistical evaluation of the data generated from the July and October 2024 supplemental monitoring events. As required by §257.95(g)(3)(ii), a copy of the ASD is included in Appendix D.

- The successful ASD provided in Appendix D demonstrates that none of the potential SSLs exceeded Groundwater Protection Standards (GWPS) at statistically significant level; in fact, the potential SSLs observed during the supplemental monitoring events were below the GWPS concentrations.

- No problems were encountered during 2024 with regard to the groundwater monitoring and corrective action system. Therefore, no actions were required to modify the system.

- The recycle ponds CCR Unit remained in closure with no requirement to initiate assessment of corrective measures for the duration of 2024.

6. PROJECTED ACTIVITIES FOR 2025

The certified closure of two recycle ponds was completed on October 2, 2023. No activities are planned for the program during 2025.

APPENDIX A
WELL LOCATIONS

LEGEND

- RECYCLING POND WELLS
- RECYCLING POND BOUNDARY

NOTES

1. BASE MAP IMAGERY FROM GOOGLE EARTH PRO, 2018 .

N

0 300 600 Feet

1 " = 300 '
1:3,600

PROJECT:
ENTERGY WHITE BLUFF PLANT
1100 WHITE BLUFF ROAD
REDFIELD, ARKANSAS

TITLE:
RECYCLING POND WELL LOCATIONS

DRAWN BY:	S. MAJOR	PROJ. NO.:	431458
CHECKED BY:	L. BURRIS		
APPROVED BY:	J. HOUSE		**FIGURE 1**
DATE:	JANUARY 2021		

TRC
Two United Plaza
8550 United Plaza Blvd., Suite 502
Baton Rouge, LA
Phone: 225.216.7483

FILE NO.: 431458-001.mxd

Plot Date: 1/25/2021, 15:44:54 PM by SMAJOR -- LAYOUT: ANSI B(11"x17")
Path: S:\1-PROJECTS\Entergy\MadisonLegacy\Projects\Arkansas\2018_302967\431458-001.mxd Coordinate System: NAD 1983 StatePlane Arkansas South FIPS 0302 Feet (Foot US)
Map Rotation: 0
TRC - GIS

APPENDIX B
GROUNDWATER LEVEL DATA

Water Level Measurements2024					
		July 08, 2024		October 02, 2024	
Well ID	TOC Elevation (ft NAVD88)	Depth to Groundwater (ft below MP)	Groundwater Elevation (ft NAVD88)	Depth to Groundwater (ft below MP)	Groundwater Elevation (ft NAVD88)
RP-1	285.72	8.17	277.55	10.55	275.17
RP-2	291.92	15.13	276.79	16.25	275.67
RP-3	284.15	8.56	275.59	9.89	274.26
RP-4	284.17	8.58	275.59	10.12	274.05
RP-5	284.57	9.01	275.56	10.62	273.95
RP-6	283.81	9.77	274.04	10.28	273.53
RP-7	284.46	11.12	273.34	11.65	272.81
RP-8	285.60	10.43	275.17	11.69	273.91
RP-9	284.68	9.35	275.33	10.79	273.89
RP-10	283.66	7.97	275.69	9.90	273.76

LEGEND

- RECYCLING POND WELLS
- RECYCLING POND BOUNDARY
- GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
- GROUNDWATER FLOW DIRECTION

NOTES

1. BASE MAP IMAGE RY FROM GOOGLE EARTH PRO, 2018 .
2. WATER LEVELS COLLECTED JULY 8, 2024.

0 300 600 Feet

1 " = 329 '

1:3,950

PROJECT:

ENTERGY WHITE BLUFF PLANT
1100 WHITE BLUFF ROAD
REDFIELD, ARKANSAS

TITLE:

3RD QUARTER 2024 POTENTIOMETRIC MAP

DRAWN BY:	B. TRACY	PROJ. NO.:	591488
CHECKED BY:	L. BURRIS		
APPROVED BY:	J. HOUSE		**FIGURE 2.1**
DATE:	JANUARY 2025		

TRC
4545 Sherwood Common Blvd.
Building 3 - Suite A
Baton Rouge, LA 70816
Phone: 225.216.7483

FILE NO.: 431458-001_July_2024.mxd

Plot Date: 1/31/2025, 15:19:16 PM by BTRACY -- LAYOUT: ANSI B (11"x17")
Path: T:\1-PROJECTS\ENTERGY\MadisonLegacyProjects\Arkansas\2018_302967\431458-001_July_2024.mxd
Coordinate System: NAD 1983 StatePlane Arkansas South FIPS 0302 Feet (Foot US)
Map Rotation: 0
TRC - GIS

LEGEND

- RECYCLING POND WELLS
- RECYCLING POND BOUNDARY
- GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
- GROUNDWATER FLOW DIRECTION

NOTES

1. BASE MAP IMAGE RY FROM GOOGLE EARTH PRO, 2018 .
2. WATER LEVELS COLLECTED OCTOBER 2, 2024.

0 300 600 Feet

1 " = 300 '

1:3,600

PROJECT:

ENTERGY WHITE BLUFF PLANT
1100 WHITE BLUFF ROAD
REDFIELD, ARKANSAS

TITLE:

4TH QUARTER 2024 POTENTIOMETRIC MAP

DRAWN BY:	B. TRACY	PROJ. NO.:	591488
CHECKED BY:	L. BURRIS		
APPROVED BY:	J. HOUSE		**FIGURE 2.2**
DATE:	JANUARY 2025		

TRC
4545 Sherwood Common Blvd.
Building 3 - Suite A
Baton Rouge, LA 70816
Phone: 225.216.7483

FILE NO.: 431458-001_Oct_2024.mxd

Plot Date: 1/31/2025, 15:18:09 PM by BTRACY -- LAYOUT: ANSI B(11"x17")
Path: T:\1-PROJECTS\ENTERGY\Madison\Legacy\Projects\Arkansas\2018_302967\431458-001_Oct_2024.mxd
Coordinate System: NAD 1983 StatePlane Arkansas South FIPS 0302 Feet (Foot US)
Map Rotation: 0
TRC - GIS

APPENDIX C
GROUNDWATER MONITORING DATA

Sampling Schedule, Entergy White Bluff Recycle Ponds Network			
	Supplemental Monitoring Sampling Dates and Wells Sampled		
Well ID	7/8-7/10/2024	10/2-10/3/2024	Number of Samples Collected
RP-1	X	X	2
RP-2	X	X	2
RP-3	X	X	2
RP-4	X	X	2
RP-5	X	X	2
RP-6	X	X	2
RP-7	X	X	2
RP-8	X	X	2
RP-9	X	X	2
RP-10	X	X	2

Summary of Analytical Results – Third Quarter 2024																
Well ID	**Date**	**Antimony (mg/L)**	**Arsenic (mg/L)**	**Barium (mg/L)**	**Beryllium (mg/L)**	**Cadmium (mg/L)**	**Chromium (mg/L)**	**Cobalt (mg/L)**	**Fluoride (mg/L)**	**Lead (mg/L)**	**Lithium (mg/L)**	**Mercury (mg/L)**	**Molybdenum (mg/L)**	**Selenium (mg/L)**	**Thallium (mg/L)**	**pH (s.u.)**
RP-1	7/8/2024	<0.00500	0.00398	0.0138	0.0175	<0.00100	<0.00300	0.147	1.58	<0.000500	0.337	0.000236	<0.00100	<0.00500	<0.000500	3.50
RP-2	7/8/2024	<0.00500	<0.000500	0.0286	0.00162	<0.00100	<0.00300	0.0065	<0.500	0.000675	0.0898	<0.000200	<0.00100	<0.00500	<0.000500	3.70
RP-3	7/10/2024	<0.00500	0.00213	0.0146	0.0105	<0.00100	<0.00300	0.0582	0.758	<0.000500	0.401	<0.000200	<0.00100	<0.00500	<0.000500	4.45
RP-4	7/8/2024	<0.00500	0.00261	0.165	<0.000500	<0.00100	<0.00300	0.00422	<0.500	<0.000500	<0.0150	<0.000200	0.0133	<0.00500	<0.000500	5.99
RP-5	7/10/2024	<0.00500	<0.000500	0.0166	0.00513	<0.00100	<0.00300	0.0385	<0.500	<0.000500	0.176	<0.000200	<0.00100	<0.00500	<0.000500	3.47
RP-6	7/10/2024	<0.00500	0.00104	0.0319	0.014	<0.00100	<0.00300	0.0267	0.868	<0.000500	0.765	<0.000200	<0.00100	<0.00500	<0.000500	3.98
RP-7	7/10/2024	<0.00500	<0.000500	0.0213	0.0121	<0.00100	<0.00300	0.00919	<0.500	0.000798	0.269	<0.000200	<0.00100	<0.00500	<0.000500	3.45
RP-8	7/10/2024	<0.00500	0.0016	0.0662	<0.000500	<0.00100	<0.00300	<0.000500	0.587	<0.000500	<0.0150	<0.000200	0.0321	<0.00500	<0.000500	7.2
RP-9	7/8/2024	<0.00500	0.000773	0.137	<0.000500	<0.00100	<0.00300	<0.000500	<0.500	0.000835	<0.0150	<0.000200	0.0114	<0.00500	<0.000500	6.42
RP-10	7/8/2024	<0.00500	0.000638	0.017	0.00696	<0.00100	<0.00300	0.0215	<0.500	0.000616	0.0344	<0.000200	<0.00100	<0.00500	<0.000500	3.43
DUPLICATE (RP-5)	7/10/2024	<0.00500	0.000511	0.0164	0.00482	<0.00100	<0.00300	0.0384	<0.500	<0.000500	0.171	<0.000200	<0.00100	<0.00500	<0.000500	-
FIELD BLANK	7/10/2024	<0.00500	<0.000500	<0.00300	<0.000500	<0.00100	<0.00300	<0.000500	<0.500	<0.000500	<0.0150	<0.000200	<0.00100	<0.00500	<0.000500	-

Summary of Analytical Results – Fourth Quarter 2024																
Well ID	**Date**	**Antimony (mg/L)**	**Arsenic (mg/L)**	**Barium (mg/L)**	**Beryllium (mg/L)**	**Cadmium (mg/L)**	**Chromium (mg/L)**	**Cobalt (mg/L)**	**Fluoride (mg/L)**	**Lead (mg/L)**	**Lithium (mg/L)**	**Mercury (mg/L)**	**Molybdenum (mg/L)**	**Selenium (mg/L)**	**Thallium (mg/L)**	**pH (s.u.)**
RP-1	10/3/2024	<0.00400	0.0145	0.0147	0.0209	<0.00100	<0.00200	0.204	2.06	<0.00200	0.387	0.000265	<0.00500	0.0105	<0.00200	3.71
RP-2	10/3/2024	<0.00400	<0.00200	0.0322	<0.00200	<0.00100	<0.00200	0.00864	<0.150	<0.00200	0.0882	<0.000200	<0.00500	<0.00200	<0.00200	3.65
RP-3	10/3/2024	<0.00400	0.00405	0.014	0.00845	<0.00100	<0.00200	0.059	<1.50	<0.00200	0.384	<0.000200	<0.00500	0.00283	<0.00200	4.67
RP-4	10/2/2024	<0.00400	0.0041	0.192	<0.00200	<0.00100	<0.00200	0.0169	0.335	<0.00200	0.0215	<0.000200	0.00969	<0.00200	<0.00200	5.86
RP-5	10/2/2024	<0.00400	<0.00200	0.0207	0.00457	<0.00100	<0.00200	0.0457	0.346	<0.00200	0.166	<0.000200	<0.00500	<0.00200	<0.00200	3.50
RP-6	10/2/2024	<0.00400	<0.00200	0.0631	0.00675	<0.00100	<0.00200	0.0225	<1.50	<0.00200	0.686	<0.000200	0.00545	<0.00200	<0.00200	4.86
RP-7	10/2/2024	<0.00400	<0.00200	0.0223	0.0094	<0.00100	<0.00200	0.0108	0.369	<0.00200	0.242	<0.000200	<0.00500	<0.00200	<0.00200	3.73
RP-8	10/2/2024	<0.00400	<0.00200	0.0637	<0.00200	<0.00100	<0.00200	0.0167	0.169	<0.00200	0.0878	<0.000200	<0.00500	<0.00200	<0.00200	5.76
RP-9	10/2/2024	<0.00400	<0.00200	0.104	<0.00200	<0.00100	<0.00200	0.00236	0.237	<0.00200	<0.0150	<0.000200	0.0104	<0.00200	<0.00200	6.18
RP-10	10/2/2024	<0.00400	<0.00200	0.0299	0.00551	<0.00100	<0.00200	0.0227	0.452	<0.00200	0.0314	<0.000200	<0.00500	<0.00200	<0.00200	3.72
DUPLICATE (RP-2)	10/3/2024	<0.00400	<0.00200	0.0323	<0.00200	<0.00100	<0.00200	0.00856	<0.150	<0.00200	0.0851	<0.000200	<0.00500	<0.00200	<0.00200	-
FIELD BLANK	10/3/2024	<0.00400	<0.00200	<0.00200	<0.00200	<0.00100	<0.00200	<0.00200	<0.150	<0.00200	<0.0150	<0.000200	<0.00500	<0.00200	<0.00200	-
TRIP BLANK	10/3/2024	<0.00400	<0.00200	<0.00200	<0.00200	<0.00100	0.00271	<0.00200	<0.150	<0.00200	<0.0150	<0.000200	<0.00500	<0.00200	<0.00200	-

ANALYTICAL REPORT

August 07, 2024

Alliance Technical Group - Bryant, AR

Sample Delivery Group:	L1755981
Samples Received:	07/12/2024
Project Number:	1145-21-080
Description:	Entergy - White Bluff

Report To: Jonathan Brown
219 Brown Lane
Little Rock, AR 72022

Entire Report Reviewed By: Myra Ingram

Katie Ingram
Project Manager

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

TABLE OF CONTENTS

RP-1 L1755981-01 GW

Collected by: JLC/KRS | Collected date/time: 07/08/24 12:25 | Received date/time: 07/12/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2325116	1	07/18/24 21:16	07/18/24 21:16	SMC	Allen, TX
Mercury by Method 7470A	WG2322270	1	07/13/24 12:10	07/14/24 02:54	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2323840	1	07/21/24 08:26	07/22/24 10:38	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2325886	1	07/20/24 08:12	07/23/24 14:55	NA	Allen, TX
Metals (ICPMS) by Method 6020	WG2325886	1	07/20/24 08:12	07/24/24 13:28	NA	Allen, TX

RP-2 L1755981-02 GW

Collected by: JLC/KRS | Collected date/time: 07/08/24 11:20 | Received date/time: 07/12/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2325116	1	07/18/24 21:28	07/18/24 21:28	SMC	Allen, TX
Mercury by Method 7470A	WG2322270	1	07/13/24 12:10	07/14/24 02:57	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2323840	1	07/21/24 08:26	07/22/24 10:40	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2325886	1	07/20/24 08:12	07/23/24 15:01	NA	Allen, TX
Metals (ICPMS) by Method 6020	WG2325886	1	07/20/24 08:12	07/24/24 13:34	NA	Allen, TX

RP-3 L1755981-03 GW

Collected by: JLC/KRS | Collected date/time: 07/10/24 10:25 | Received date/time: 07/12/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2325116	1	07/18/24 21:40	07/18/24 21:40	SMC	Allen, TX
Mercury by Method 7470A	WG2322270	1	07/13/24 12:10	07/14/24 02:59	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2323840	1	07/21/24 08:26	07/22/24 10:41	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2325886	1	07/20/24 08:12	07/23/24 15:20	NA	Allen, TX
Metals (ICPMS) by Method 6020	WG2325886	1	07/20/24 08:12	07/24/24 13:40	NA	Allen, TX

RP-4 L1755981-04 GW

Collected by: JLC/KRS | Collected date/time: 07/08/24 14:10 | Received date/time: 07/12/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2325116	1	07/18/24 21:52	07/18/24 21:52	SMC	Allen, TX
Mercury by Method 7470A	WG2322270	1	07/13/24 12:10	07/14/24 03:01	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2323840	1	07/21/24 08:26	07/22/24 10:43	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2325886	1	07/20/24 08:12	07/23/24 15:26	NA	Allen, TX
Metals (ICPMS) by Method 6020	WG2325886	1	07/20/24 08:12	07/24/24 13:48	NA	Allen, TX

RP-5 L1755981-05 GW

Collected by: JLC/KRS | Collected date/time: 07/10/24 13:40 | Received date/time: 07/12/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2325116	1	07/18/24 22:04	07/18/24 22:04	SMC	Allen, TX
Mercury by Method 7470A	WG2322270	1	07/13/24 12:10	07/14/24 03:08	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2323840	1	07/21/24 08:26	07/22/24 10:45	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2325886	1	07/20/24 08:12	07/23/24 15:32	NA	Allen, TX
Metals (ICPMS) by Method 6020	WG2325886	1	07/20/24 08:12	07/24/24 13:54	NA	Allen, TX

RP-6 L1755981-06 GW

Collected by: JLC/KRS | Collected date/time: 07/10/24 13:00 | Received date/time: 07/12/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2325116	1	07/18/24 22:16	07/18/24 22:16	SMC	Allen, TX
Mercury by Method 7470A	WG2322270	1	07/13/24 12:10	07/14/24 02:27	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2323840	1	07/21/24 08:26	07/22/24 10:46	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2325886	1	07/20/24 08:12	07/23/24 15:38	NA	Allen, TX
Metals (ICPMS) by Method 6020	WG2325886	1	07/20/24 08:12	07/24/24 14:00	NA	Allen, TX

RP-7 L1755981-07 GW

Collected by: JLC/KRS | Collected date/time: 07/10/24 12:15 | Received date/time: 07/12/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2325116	1	07/18/24 22:28	07/18/24 22:28	SMC	Allen, TX
Mercury by Method 7470A	WG2322270	1	07/13/24 12:10	07/14/24 03:11	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2323840	1	07/21/24 08:26	07/22/24 10:48	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2325886	1	07/20/24 08:12	07/23/24 15:44	NA	Allen, TX
Metals (ICPMS) by Method 6020	WG2325886	1	07/20/24 08:12	07/24/24 14:19	NA	Allen, TX

RP-8 L1755981-08 GW

Collected by: JLC/KRS | Collected date/time: 07/10/24 11:40 | Received date/time: 07/12/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2325116	1	07/18/24 22:39	07/18/24 22:39	SMC	Allen, TX
Mercury by Method 7470A	WG2322270	1	07/13/24 12:10	07/14/24 03:13	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2323840	1	07/21/24 08:26	07/22/24 10:50	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2325886	1	07/20/24 08:12	07/23/24 15:50	NA	Allen, TX
Metals (ICPMS) by Method 6020	WG2325886	1	07/20/24 08:12	07/24/24 14:25	NA	Allen, TX

RP-9 L1755981-09 GW

Collected by: JLC/KRS | Collected date/time: 07/08/24 15:20 | Received date/time: 07/12/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2325116	1	07/18/24 22:51	07/18/24 22:51	SMC	Allen, TX
Mercury by Method 7470A	WG2322270	1	07/13/24 12:10	07/14/24 03:16	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2323840	1	07/21/24 08:26	07/22/24 10:55	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2325886	1	07/20/24 08:12	07/23/24 15:57	NA	Allen, TX
Metals (ICPMS) by Method 6020	WG2325886	1	07/20/24 08:12	07/24/24 14:31	NA	Allen, TX

RP-10 L1755981-10 GW

Collected by: JLC/KRS | Collected date/time: 07/08/24 13:20 | Received date/time: 07/12/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2325116	1	07/18/24 23:03	07/18/24 23:03	SMC	Allen, TX
Mercury by Method 7470A	WG2322270	1	07/13/24 12:10	07/14/24 03:18	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2323840	1	07/21/24 08:26	07/22/24 10:56	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2325886	1	07/20/24 08:12	07/23/24 16:03	NA	Allen, TX
Metals (ICPMS) by Method 6020	WG2325886	1	07/20/24 08:12	07/24/24 14:37	NA	Allen, TX

DUPLICATE (RP-5) L1755981-11 GW

Collected by: JLC/KRS
Collected date/time: 07/10/24 13:40
Received date/time: 07/12/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2325116	1	07/18/24 23:39	07/18/24 23:39	SMC	Allen, TX
Mercury by Method 7470A	WG2322270	1	07/13/24 12:10	07/14/24 03:20	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2323840	1	07/21/24 08:26	07/22/24 10:58	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2325886	1	07/20/24 08:12	07/23/24 16:29	NA	Allen, TX
Metals (ICPMS) by Method 6020	WG2325886	1	07/20/24 08:12	07/24/24 14:43	NA	Allen, TX

FIELD BLANK L1755981-12 GW

Collected by: JLC/KRS
Collected date/time: 07/10/24 15:15
Received date/time: 07/12/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2325116	1	07/18/24 23:51	07/18/24 23:51	SMC	Allen, TX
Mercury by Method 7470A	WG2323091	1	07/17/24 10:18	07/18/24 11:15	LAS	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2332125	1	07/31/24 08:57	07/31/24 13:24	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2325886	1	07/20/24 08:42	07/23/24 16:35	NA	Allen, TX
Metals (ICPMS) by Method 6020	WG2325886	1	07/20/24 08:42	07/24/24 14:50	NA	Allen, TX

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Katie Ingram
Project Manager

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Fluoride	1.58		0.500	1	07/18/2024 21:16	WG2325116

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	0.000236		0.000200	1	07/14/2024 02:54	WG2322270

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Lithium	0.337		0.0150	1	07/22/2024 10:38	WG2323840

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00500	1	07/23/2024 14:55	WG2325886
Arsenic	0.00398		0.000500	1	07/23/2024 14:55	WG2325886
Barium	0.0138		0.00300	1	07/23/2024 14:55	WG2325886
Beryllium	0.0175		0.000500	1	07/24/2024 13:28	WG2325886
Cadmium	ND		0.00100	1	07/23/2024 14:55	WG2325886
Chromium	ND		0.00300	1	07/23/2024 14:55	WG2325886
Cobalt	0.147		0.000500	1	07/23/2024 14:55	WG2325886
Lead	ND		0.000500	1	07/23/2024 14:55	WG2325886
Molybdenum	ND		0.00100	1	07/23/2024 14:55	WG2325886
Selenium	ND		0.00500	1	07/23/2024 14:55	WG2325886
Thallium	ND		0.000500	1	07/23/2024 14:55	WG2325886

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Fluoride	ND		0.500	1	07/18/2024 21:28	WG2325116

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.000200	1	07/14/2024 02:57	WG2322270

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Lithium	0.0898		0.0150	1	07/22/2024 10:40	WG2323840

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Antimony	ND		0.00500	1	07/23/2024 15:01	WG2325886
Arsenic	ND		0.000500	1	07/23/2024 15:01	WG2325886
Barium	0.0286		0.00300	1	07/23/2024 15:01	WG2325886
Beryllium	0.00162		0.000500	1	07/24/2024 13:34	WG2325886
Cadmium	ND		0.00100	1	07/23/2024 15:01	WG2325886
Chromium	ND		0.00300	1	07/23/2024 15:01	WG2325886
Cobalt	0.00650		0.000500	1	07/23/2024 15:01	WG2325886
Lead	0.000675		0.000500	1	07/23/2024 15:01	WG2325886
Molybdenum	ND		0.00100	1	07/23/2024 15:01	WG2325886
Selenium	ND		0.00500	1	07/23/2024 15:01	WG2325886
Thallium	ND		0.000500	1	07/23/2024 15:01	WG2325886

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Fluoride	0.758		0.500	1	07/18/2024 21:40	WG2325116

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.000200	1	07/14/2024 02:59	WG2322270

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Lithium	0.401		0.0150	1	07/22/2024 10:41	WG2323840

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Antimony	ND		0.00500	1	07/23/2024 15:20	WG2325886
Arsenic	0.00213	B	0.000500	1	07/23/2024 15:20	WG2325886
Barium	0.0146		0.00300	1	07/23/2024 15:20	WG2325886
Beryllium	0.0105		0.000500	1	07/24/2024 13:40	WG2325886
Cadmium	ND		0.00100	1	07/23/2024 15:20	WG2325886
Chromium	ND		0.00300	1	07/23/2024 15:20	WG2325886
Cobalt	0.0582		0.000500	1	07/23/2024 15:20	WG2325886
Lead	ND		0.000500	1	07/23/2024 15:20	WG2325886
Molybdenum	ND		0.00100	1	07/23/2024 15:20	WG2325886
Selenium	ND		0.00500	1	07/23/2024 15:20	WG2325886
Thallium	ND		0.000500	1	07/23/2024 15:20	WG2325886

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Fluoride	ND		0.500	1	07/18/2024 21:52	WG2325116

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.000200	1	07/14/2024 03:01	WG2322270

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Lithium	ND		0.0150	1	07/22/2024 10:43	WG2323840

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Antimony	ND		0.00500	1	07/23/2024 15:26	WG2325886
Arsenic	0.00261	B	0.000500	1	07/23/2024 15:26	WG2325886
Barium	0.165		0.00300	1	07/23/2024 15:26	WG2325886
Beryllium	ND		0.000500	1	07/24/2024 13:48	WG2325886
Cadmium	ND		0.00100	1	07/23/2024 15:26	WG2325886
Chromium	ND		0.00300	1	07/23/2024 15:26	WG2325886
Cobalt	0.00422		0.000500	1	07/23/2024 15:26	WG2325886
Lead	ND		0.000500	1	07/23/2024 15:26	WG2325886
Molybdenum	0.0133	B	0.00100	1	07/23/2024 15:26	WG2325886
Selenium	ND		0.00500	1	07/23/2024 15:26	WG2325886
Thallium	ND		0.000500	1	07/23/2024 15:26	WG2325886

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Fluoride	ND		0.500	1	07/18/2024 22:04	WG2325116

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	07/14/2024 03:08	WG2322270

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Lithium	0.176		0.0150	1	07/22/2024 10:45	WG2323840

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00500	1	07/23/2024 15:32	WG2325886
Arsenic	ND		0.000500	1	07/23/2024 15:32	WG2325886
Barium	0.0166		0.00300	1	07/23/2024 15:32	WG2325886
Beryllium	0.00513		0.000500	1	07/24/2024 13:54	WG2325886
Cadmium	ND		0.00100	1	07/23/2024 15:32	WG2325886
Chromium	ND		0.00300	1	07/23/2024 15:32	WG2325886
Cobalt	0.0385		0.000500	1	07/23/2024 15:32	WG2325886
Lead	ND		0.000500	1	07/23/2024 15:32	WG2325886
Molybdenum	ND		0.00100	1	07/23/2024 15:32	WG2325886
Selenium	ND		0.00500	1	07/23/2024 15:32	WG2325886
Thallium	ND		0.000500	1	07/23/2024 15:32	WG2325886

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Fluoride	0.868		0.500	1	07/18/2024 22:16	WG2325116

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.000200	1	07/14/2024 02:27	WG2322270

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Lithium	0.765		0.0150	1	07/22/2024 10:46	WG2323840

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Antimony	ND		0.00500	1	07/23/2024 15:38	WG2325886
Arsenic	0.00104	B	0.000500	1	07/23/2024 15:38	WG2325886
Barium	0.0319		0.00300	1	07/23/2024 15:38	WG2325886
Beryllium	0.0140		0.000500	1	07/24/2024 14:00	WG2325886
Cadmium	ND		0.00100	1	07/23/2024 15:38	WG2325886
Chromium	ND		0.00300	1	07/23/2024 15:38	WG2325886
Cobalt	0.0267		0.000500	1	07/23/2024 15:38	WG2325886
Lead	ND		0.000500	1	07/23/2024 15:38	WG2325886
Molybdenum	ND		0.00100	1	07/23/2024 15:38	WG2325886
Selenium	ND		0.00500	1	07/23/2024 15:38	WG2325886
Thallium	ND		0.000500	1	07/23/2024 15:38	WG2325886

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Fluoride	ND		0.500	1	07/18/2024 22:28	WG2325116

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.000200	1	07/14/2024 03:11	WG2322270

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Lithium	0.269		0.0150	1	07/22/2024 10:48	WG2323840

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Antimony	ND		0.00500	1	07/23/2024 15:44	WG2325886
Arsenic	ND		0.000500	1	07/23/2024 15:44	WG2325886
Barium	0.0213		0.00300	1	07/23/2024 15:44	WG2325886
Beryllium	0.0121		0.000500	1	07/24/2024 14:19	WG2325886
Cadmium	ND		0.00100	1	07/23/2024 15:44	WG2325886
Chromium	ND		0.00300	1	07/23/2024 15:44	WG2325886
Cobalt	0.00919		0.000500	1	07/23/2024 15:44	WG2325886
Lead	0.000798		0.000500	1	07/23/2024 15:44	WG2325886
Molybdenum	ND		0.00100	1	07/23/2024 15:44	WG2325886
Selenium	ND		0.00500	1	07/23/2024 15:44	WG2325886
Thallium	ND		0.000500	1	07/23/2024 15:44	WG2325886

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Fluoride	0.587		0.500	1	07/18/2024 22:39	WG2325116

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.000200	1	07/14/2024 03:13	WG2322270

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Lithium	ND		0.0150	1	07/22/2024 10:50	WG2323840

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Antimony	ND		0.00500	1	07/23/2024 15:50	WG2325886
Arsenic	0.00160	B	0.000500	1	07/23/2024 15:50	WG2325886
Barium	0.0662		0.00300	1	07/23/2024 15:50	WG2325886
Beryllium	ND		0.000500	1	07/24/2024 14:25	WG2325886
Cadmium	ND		0.00100	1	07/23/2024 15:50	WG2325886
Chromium	ND		0.00300	1	07/23/2024 15:50	WG2325886
Cobalt	ND		0.000500	1	07/23/2024 15:50	WG2325886
Lead	ND		0.000500	1	07/23/2024 15:50	WG2325886
Molybdenum	0.0321		0.00100	1	07/23/2024 15:50	WG2325886
Selenium	ND		0.00500	1	07/23/2024 15:50	WG2325886
Thallium	ND		0.000500	1	07/23/2024 15:50	WG2325886

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Fluoride	ND		0.500	1	07/18/2024 22:51	WG2325116

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.000200	1	07/14/2024 03:16	WG2322270

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Lithium	ND		0.0150	1	07/22/2024 10:55	WG2323840

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Antimony	ND		0.00500	1	07/23/2024 15:57	WG2325886
Arsenic	0.000773	B	0.000500	1	07/23/2024 15:57	WG2325886
Barium	0.137		0.00300	1	07/23/2024 15:57	WG2325886
Beryllium	ND		0.000500	1	07/24/2024 14:31	WG2325886
Cadmium	ND		0.00100	1	07/23/2024 15:57	WG2325886
Chromium	ND		0.00300	1	07/23/2024 15:57	WG2325886
Cobalt	ND		0.000500	1	07/23/2024 15:57	WG2325886
Lead	0.000835		0.000500	1	07/23/2024 15:57	WG2325886
Molybdenum	0.0114	B	0.00100	1	07/23/2024 15:57	WG2325886
Selenium	ND		0.00500	1	07/23/2024 15:57	WG2325886
Thallium	ND		0.000500	1	07/23/2024 15:57	WG2325886

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Fluoride	ND		0.500	1	07/18/2024 23:03	WG2325116

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.000200	1	07/14/2024 03:18	WG2322270

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Lithium	0.0344		0.0150	1	07/22/2024 10:56	WG2323840

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Antimony	ND		0.00500	1	07/23/2024 16:03	WG2325886
Arsenic	0.000638	B	0.000500	1	07/23/2024 16:03	WG2325886
Barium	0.0170		0.00300	1	07/23/2024 16:03	WG2325886
Beryllium	0.00696		0.000500	1	07/24/2024 14:37	WG2325886
Cadmium	ND		0.00100	1	07/23/2024 16:03	WG2325886
Chromium	ND		0.00300	1	07/23/2024 16:03	WG2325886
Cobalt	0.0215		0.000500	1	07/23/2024 16:03	WG2325886
Lead	0.000616		0.000500	1	07/23/2024 16:03	WG2325886
Molybdenum	ND		0.00100	1	07/23/2024 16:03	WG2325886
Selenium	ND		0.00500	1	07/23/2024 16:03	WG2325886
Thallium	ND		0.000500	1	07/23/2024 16:03	WG2325886

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Fluoride	ND		0.500	1	07/18/2024 23:39	WG2325116

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.000200	1	07/14/2024 03:20	WG2322270

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Lithium	0.171		0.0150	1	07/22/2024 10:58	WG2323840

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Antimony	ND		0.00500	1	07/23/2024 16:29	WG2325886
Arsenic	0.000511	B	0.000500	1	07/23/2024 16:29	WG2325886
Barium	0.0164		0.00300	1	07/23/2024 16:29	WG2325886
Beryllium	0.00482		0.000500	1	07/24/2024 14:43	WG2325886
Cadmium	ND		0.00100	1	07/23/2024 16:29	WG2325886
Chromium	ND		0.00300	1	07/23/2024 16:29	WG2325886
Cobalt	0.0384		0.000500	1	07/23/2024 16:29	WG2325886
Lead	ND		0.000500	1	07/23/2024 16:29	WG2325886
Molybdenum	ND		0.00100	1	07/23/2024 16:29	WG2325886
Selenium	ND		0.00500	1	07/23/2024 16:29	WG2325886
Thallium	ND		0.000500	1	07/23/2024 16:29	WG2325886

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Fluoride	ND		0.500	1	07/18/2024 23:51	WG2325116

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	07/18/2024 11:15	WG2323091

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Lithium	ND		0.0150	1	07/31/2024 13:24	WG2332125

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00500	1	07/23/2024 16:35	WG2325886
Arsenic	ND		0.000500	1	07/23/2024 16:35	WG2325886
Barium	ND		0.00300	1	07/23/2024 16:35	WG2325886
Beryllium	ND		0.000500	1	07/24/2024 14:50	WG2325886
Cadmium	ND		0.00100	1	07/23/2024 16:35	WG2325886
Chromium	ND		0.00300	1	07/23/2024 16:35	WG2325886
Cobalt	ND		0.000500	1	07/23/2024 16:35	WG2325886
Lead	ND		0.000500	1	07/23/2024 16:35	WG2325886
Molybdenum	ND		0.00100	1	07/23/2024 16:35	WG2325886
Selenium	ND		0.00500	1	07/23/2024 16:35	WG2325886
Thallium	ND		0.000500	1	07/23/2024 16:35	WG2325886

Method Blank (MB)

(MB) R4095841-1 07/18/24 18:54

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Fluoride	U		0.0947	0.500

Laboratory Control Sample (LCS)

(LCS) R4095841-2 07/18/24 19:06

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluoride	5.00	5.48	110	80.0-120	

L1752543-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1752543-01 07/18/24 19:17 • (MS) R4095841-3 07/19/24 09:01 • (MSD) R4095841-4 07/19/24 09:13

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Fluoride	5.00	ND	5.53	5.57	111	111	1	80.0-120			0.645	20

L1755981-11 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1755981-11 07/18/24 23:39 • (MS) R4095841-5 07/19/24 09:24 • (MSD) R4095841-6 07/19/24 09:36

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Fluoride	5.00	ND	5.75	5.83	109	111	1	80.0-120			1.42	20

QUALITY CONTROL SUMMARY

L1755981-01,02,03,04,05,06,07,08,09,10,11

Method Blank (MB)

(MB) R4093542-1 07/14/24 02:23

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Mercury	U		0.000100	0.000200

Laboratory Control Sample (LCS)

(LCS) R4093542-2 07/14/24 02:25

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	0.00300	0.00300	100	80.0-120	

L1755981-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1755981-06 07/14/24 02:27 • (MS) R4093542-4 07/14/24 02:32 • (MSD) R4093542-5 07/14/24 02:39

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.00300	ND	0.00296	0.00287	98.6	95.6	1	75.0-125			3.12	20

Method Blank (MB)

(MB) R4095469-1 07/18/24 10:49

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Mercury	U		0.000100	0.000200

Laboratory Control Sample (LCS)

(LCS) R4095469-2 07/18/24 10:52

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	0.00300	0.00302	101	80.0-120	

L1756531-15 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1756531-15 07/18/24 11:02 • (MS) R4095469-4 07/18/24 11:10 • (MSD) R4095469-5 07/18/24 11:12

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.00300	ND	0.00315	0.00313	105	104	1	75.0-125			0.746	20

QUALITY CONTROL SUMMARY

L1755981-01,02,03,04,05,06,07,08,09,10,11

Method Blank (MB)

(MB) R4096818-6 07/22/24 11:13

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Lithium	U		0.00485	0.0150

Laboratory Control Sample (LCS)

(LCS) R4096818-7 07/22/24 11:15

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Lithium	1.00	1.01	101	80.0-120	

L1755863-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1755863-05 07/22/24 10:18 • (MS) R4096818-4 07/22/24 10:21 • (MSD) R4096818-5 07/22/24 10:23

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Lithium	1.00	0.0793	1.09	1.10	101	102	1	75.0-125			0.604	20

Method Blank (MB)

(MB) R4100919-1 07/31/24 13:13

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Lithium	U		0.00485	0.0150

Laboratory Control Sample (LCS)

(LCS) R4100919-2 07/31/24 13:15

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Lithium	1.00	0.937	93.7	80.0-120	

L1759264-17 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1759264-17 07/31/24 13:17 • (MS) R4100919-4 07/31/24 13:20 • (MSD) R4100919-5 07/31/24 13:22

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Lithium	1.00	ND	0.949	0.940	94.9	94.0	1	75.0-125			0.891	20

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Method Blank (MB)

(MB) R4097425-1 07/23/24 14:17

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Antimony	U		0.00154	0.00500
Arsenic	0.000381	J	0.000140	0.000500
Barium	U		0.000340	0.00300
Cadmium	U		0.000220	0.00100
Chromium	U		0.000470	0.00300
Cobalt	U		0.0000480	0.000500
Lead	U		0.0000900	0.000500
Molybdenum	0.00185		0.000270	0.00100
Selenium	U		0.00152	0.00500
Thallium	0.000464	J	0.0000800	0.000500

Method Blank (MB)

(MB) R4097425-5 07/23/24 17:31

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Beryllium	U		0.000130	0.000500

Laboratory Control Sample (LCS)

(LCS) R4097425-2 07/23/24 14:24

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Antimony	0.100	0.0874	87.4	80.0-120	
Arsenic	0.100	0.0831	83.1	80.0-120	
Barium	0.100	0.0847	84.7	80.0-120	
Cadmium	0.100	0.0888	88.8	80.0-120	
Chromium	0.100	0.0873	87.3	80.0-120	
Cobalt	0.100	0.0845	84.5	80.0-120	
Lead	0.100	0.0875	87.5	80.0-120	
Molybdenum	0.100	0.0882	88.2	80.0-120	
Selenium	0.100	0.0844	84.4	80.0-120	
Thallium	0.100	0.0862	86.2	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R4097425-6 07/23/24 17:37

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Beryllium	0.100	0.0901	90.1	80.0-120	

L1757177-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1757177-01 07/23/24 17:00 • (MS) R4097425-3 07/23/24 17:06 • (MSD) R4097425-4 07/23/24 17:12

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Antimony	0.100	ND	0.0989	0.0932	98.9	93.2	1	75.0-125			5.96	20
Arsenic	0.100	0.00717	0.102	0.0958	94.7	88.6	1	75.0-125			6.19	20
Barium	0.100	0.101	0.202	0.188	101	87.2	1	75.0-125			7.25	20
Cadmium	0.100	0.00251	0.102	0.0947	99.5	92.2	1	75.0-125			7.45	20
Chromium	0.100	0.00376	0.104	0.0963	99.8	92.6	1	75.0-125			7.21	20
Cobalt	0.100	0.00215	0.0978	0.0909	95.6	88.8	1	75.0-125			7.29	20
Lead	0.100	0.244	0.346	0.317	102	73.8	1	75.0-125		J6	8.52	20
Molybdenum	0.100	0.145	0.208	0.190	63.2	45.2	1	75.0-125	J6	J6	9.03	20
Selenium	0.100	ND	0.0880	0.0887	88.0	88.7	1	75.0-125			0.709	20
Thallium	0.100	ND	0.0953	0.0901	95.3	90.1	1	75.0-125			5.57	20

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

Pace Analytical Services, LLC -Dallas 400 W. Bethany Drive Suite 190 Allen, TX 75013

Arkansas	88-0647	Kansas	E10388
Florida	E871118	Texas	T104704232-23-39
Iowa	408	Oklahoma	8727
Louisiana	30686		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
Alliance Technical Group - Bryant, AR

219 Brown Lane
Little Rock, AR 72022

Billing Information:
Accounts Payable
219 Brown Ln.
Bryant, AR 72022

Pres Chk

Report to:
Jonathan Brown

Email To:
Jonathan.Brown@AllianceTG.com;Jhouse@trcc

Project Description:
Entergy - White Bluff

City/State Collected: Redfield AR

Please Circle: PT MT CT ET

Phone: **501-847-7077**

Client Project #
1145-21-080

Lab Project #
GBMCBAR-ENTERGYWB

Collected by (print):
JLC/KRS

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ___

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Fluoride 125mlHDPE-NoPres	Metals 250mlHDPE-HNO3	RA-226/228 1L-HDPE-Add HNO3	RA-226/228 1L-HDPE-Add-HNO3	Remarks	Sample # (lab only)
RP-1	G	GW		7-8-24	1225	4	X	X	X	X	pH	-01
RP-2		GW		7-8-24	1120	4	X	X	X	X	3.50	-02
RP-3		GW		7-10-24	1025	4	X	X	X	X	3.70	-03
RP-4		GW		7-8-24	1410	4	X	X	X	X	4.45	-04
RP-5		GW		7-10-24	1340	4	X	X	X	X	5.99	-05
RP-6		GW		7-10-24	1300	4	X	X	X	X	3.47	-06
RP-7		GW		7-10-24	1215	4	X	X	X	X	3.98	-07
RP-8		GW		7-10-24	1140	4	X	X	X	X	3.45	-08
RP-9		GW		7-9-24	1520	4	X	X	X	X	7.20	-09
RP-10		GW		7-8-24	1320	4	X	X	X	X	6.42	-10

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:Metals = As,Ba,Be,Cd,Co,Cr,Hg,Li,Mo,Pb,Sb,Se,Tl

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Chain of Custody Page ___ of ___

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # U755981

L-177

Template:**T224865**
Prelogin: **P1087081**
PM: **829 - Brittnie L Boyd**
PB: 7.1.24 BK

Shipped Via: **FedEX Ground**

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
Jacob Collect	7-11-24	1050			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 48	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Hailey R	Date: 7/12/24 Time: 0900	Hold: / Condition: NCF / OK

Company Name/Address:
Alliance Technical Group - Bryant, AR

219 Brown Lane
Little Rock, AR 72022

Billing Information:
Accounts Payable
219 Brown Ln.
Bryant, AR 72022

Pres Chk

Report to: Jonathan Brown

Email To: Jonathan.Brown@AllianceTG.com;Jhouse@trcc

Project Description: Entergy - White Bluff

City/State Collected: Redfield, AR

Please Circle: PT MT CT ET

Phone: 501-847-7077

Client Project # 1145-21-080

Lab Project # GBMCBAR-ENTERGYWB

Collected by (print): JLC/KRS

Site/Facility ID #

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Immediately Packed on Ice N ___ Y ✓

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

Pace PEOPLE ADVANCING SCIENCE

MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1756981

Table #

Acctnum: GBMCBAR
Template: T224865
Prelogin: P1087081
PM: 829 - Brittnie L Boyd
PB: 7-1-24 BK

Shipped Via: FedEX Ground

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Fluoride 125mlHDPE-NoPres	Metals 250mlHDPE-HNO3	RA-226/228 1L-HDPE-Add HNO3	RA-226/228 1L-HDPE-Add HNO3							Remarks	Sample # (lab only)
Pres Chk								<2	<2	<2								
DUPLICATE (RP-5)	G	GW		7-10-24	1340	4	X	X	X	X							pH 3.47	-11
FIELD BLANK	G	GW		7-10-24	1515	4	X	X	X	X							–	-12
		GW																
		GW																
		GW																

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other________

Remarks:Metals = As,Ba,Be,Cd,Co,Cr,Hg,Li,Mo,Pb,Sb,Se,Tl

pH ______ Temp ______

Flow ______ Other ______

Samples returned via:
__ UPS __ FedEx __ Courier ________

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP ✓Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: ✓Y __N
RAD Screen <0.5 mR/hr: ✓Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / (No) HCL / MeoH TBR	
Dodi Colbert	7/11/24	1050			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 48	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Hailey Botcher	Date: 7/12/24 Time: 0900	Hold: Condition: NCF / (OK)

L1755981

Tracking Numbers	Temperature
7315 3208 4364	4.1+0.3=4.4 ED AB
7315 3208 4353	3.8+0.3=4.1 ED AB

Name

Date

ANALYTICAL REPORT

July 29, 2024

Alliance Technical Group - Bryant, AR

Sample Delivery Group:	L1755983
Samples Received:	07/12/2024
Project Number:	1145-21-080
Description:	Entergy - White Bluff
Site:	WHITE BLUFF
Report To:	Jonathan Brown 219 Brown Lane Little Rock, AR 72022

Entire Report Reviewed By: Myra Ingram

Katie Ingram
Project Manager

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

TABLE OF CONTENTS

RP-1 L1755983-01 Non-Potable Water

Collected by: JLC/KRS | Collected date/time: 07/08/24 12:25 | Received date/time: 07/12/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2324660	1	07/18/24 14:26	07/24/24 14:08	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2323576	1	07/16/24 11:09	07/24/24 14:08	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2323576	1	07/16/24 11:09	07/17/24 15:26	ZRG	Mt. Juliet, TN

RP-2 L1755983-02 Non-Potable Water

Collected by: JLC/KRS | Collected date/time: 07/08/24 11:20 | Received date/time: 07/12/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2324660	1	07/18/24 14:26	07/24/24 14:08	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2323576	1	07/16/24 11:09	07/24/24 14:08	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2323576	1	07/16/24 11:09	07/17/24 15:26	ZRG	Mt. Juliet, TN

RP-3 L1755983-03 Non-Potable Water

Collected by: JLC/KRS | Collected date/time: 07/10/24 10:25 | Received date/time: 07/12/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2324660	1	07/18/24 14:26	07/24/24 14:08	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2323576	1	07/16/24 11:09	07/24/24 14:08	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2323576	1	07/16/24 11:09	07/17/24 15:26	ZRG	Mt. Juliet, TN

RP-4 L1755983-04 Non-Potable Water

Collected by: JLC/KRS | Collected date/time: 07/08/24 14:10 | Received date/time: 07/12/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2324660	1	07/18/24 14:26	07/24/24 14:08	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2323576	1	07/16/24 11:09	07/24/24 14:08	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2323576	1	07/16/24 11:09	07/17/24 15:26	ZRG	Mt. Juliet, TN

RP-5 L1755983-05 Non-Potable Water

Collected by: JLC/KRS | Collected date/time: 07/10/24 13:40 | Received date/time: 07/12/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2324660	1	07/18/24 14:26	07/24/24 14:08	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2323576	1	07/16/24 11:09	07/24/24 14:08	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2323576	1	07/16/24 11:09	07/17/24 15:26	ZRG	Mt. Juliet, TN

RP-6 L1755983-06 Non-Potable Water

Collected by: JLC/KRS | Collected date/time: 07/10/24 13:00 | Received date/time: 07/12/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2324660	1	07/18/24 14:26	07/24/24 14:08	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2323576	1	07/16/24 11:09	07/24/24 14:08	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2323576	1	07/16/24 11:09	07/17/24 15:26	ZRG	Mt. Juliet, TN

RP-7 L1755983-07 Non-Potable Water

Collected by: JLC/KRS | Collected date/time: 07/10/24 12:15 | Received date/time: 07/12/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2324660	1	07/18/24 14:26	07/24/24 14:08	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2323576	1	07/16/24 11:09	07/24/24 14:08	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2323576	1	07/16/24 11:09	07/17/24 15:26	ZRG	Mt. Juliet, TN

RP-8 L1755983-08 Non-Potable Water

Collected by: JLC/KRS | Collected date/time: 07/10/24 11:40 | Received date/time: 07/12/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2324660	1	07/18/24 14:26	07/24/24 14:08	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2323576	1	07/16/24 11:09	07/24/24 14:08	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2323576	1	07/16/24 11:09	07/17/24 15:26	ZRG	Mt. Juliet, TN

RP-9 L1755983-09 Non-Potable Water

Collected by: JLC/KRS | Collected date/time: 07/08/24 15:20 | Received date/time: 07/12/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2324660	1	07/18/24 14:26	07/24/24 14:08	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2323576	1	07/16/24 11:09	07/24/24 14:08	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2323576	1	07/16/24 11:09	07/17/24 15:26	ZRG	Mt. Juliet, TN

RP-10 L1755983-10 Non-Potable Water

Collected by: JLC/KRS | Collected date/time: 07/08/24 13:20 | Received date/time: 07/12/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2324660	1	07/18/24 14:26	07/24/24 14:08	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2323576	1	07/16/24 11:09	07/24/24 14:08	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2323576	1	07/16/24 11:09	07/17/24 15:26	ZRG	Mt. Juliet, TN

DUPLICATE (RP-5) L1755983-11 Non-Potable Water

Collected by: JLC/KRS | Collected date/time: 07/10/24 13:40 | Received date/time: 07/12/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2324660	1	07/18/24 14:26	07/24/24 14:08	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2323576	1	07/16/24 11:09	07/24/24 14:08	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2323576	1	07/16/24 11:09	07/17/24 15:26	ZRG	Mt. Juliet, TN

FIELD BLANK L1755983-12 Non-Potable Water

Collected by: JLC/KRS | Collected date/time: 07/10/24 15:15 | Received date/time: 07/12/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2324660	1	07/18/24 14:26	07/24/24 14:08	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2323576	1	07/16/24 11:09	07/24/24 14:08	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2323576	1	07/16/24 11:09	07/17/24 15:26	ZRG	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Katie Ingram
Project Manager

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	6.90		0.328	0.428	0.442	0.232	07/24/2024 14:08	WG2324660
(T) Barium	*97.0*					*30.0-143*	*07/24/2024 14:08*	WG2324660
(T) Yttrium	*101*					*30.0-136*	*07/24/2024 14:08*	WG2324660

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	8.49		0.614	0.576	07/24/2024 14:08	WG2323576

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	1.59		0.519	0.647	0.370	0.242	07/17/2024 15:26	WG2323576
(T) Barium-133	*90.4*					*30.0-143*	*07/17/2024 15:26*	WG2323576

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	1.31		0.228	0.331	0.398	0.210	07/24/2024 14:08	WG2324660
(T) Barium	*91.9*					*30.0-143*	*07/24/2024 14:08*	WG2324660
(T) Yttrium	*101*					*30.0-136*	*07/24/2024 14:08*	WG2324660

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.83		0.582	0.516	07/24/2024 14:08	WG2323576

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	1.52		0.535	0.695	0.328	0.232	07/17/2024 15:26	WG2323576
(T) Barium-133	*72.3*					*30.0-143*	*07/17/2024 15:26*	WG2323576

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	4.16		0.265	0.364	0.379	0.200	07/24/2024 14:08	WG2324660
(T) Barium	*114*					*30.0-143*	*07/24/2024 14:08*	WG2324660
(T) Yttrium	*104*					*30.0-136*	*07/24/2024 14:08*	WG2324660

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	6.19		0.669	0.486	07/24/2024 14:08	WG2323576

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	2.03		0.614	0.747	0.305	0.222	07/17/2024 15:26	WG2323576
(T) Barium-133	*82.6*					*30.0-143*	*07/17/2024 15:26*	WG2323576

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.766		0.213	0.315	0.389	0.206	07/24/2024 14:08	WG2324660
(T) Barium	*93.6*					*30.0-143*	*07/24/2024 14:08*	WG2324660
(T) Yttrium	*100*					*30.0-136*	*07/24/2024 14:08*	WG2324660

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.54		0.454	0.502	07/24/2024 14:08	WG2323576

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.772		0.401	0.565	0.318	0.232	07/17/2024 15:26	WG2323576
(T) Barium-133	*74.4*					*30.0-143*	*07/17/2024 15:26*	WG2323576

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	2.81		0.231	0.331	0.346	0.184	07/24/2024 14:08	WG2324660
(T) Barium	*98.5*					*30.0-143*	*07/24/2024 14:08*	WG2324660
(T) Yttrium	*104*					*30.0-136*	*07/24/2024 14:08*	WG2324660

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	3.25		0.382	0.470	07/24/2024 14:08	WG2323576

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.437		0.304	0.451	0.318	0.222	07/17/2024 15:26	WG2323576
(T) Barium-133	*76.8*					*30.0-143*	*07/17/2024 15:26*	WG2323576

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	5.83		0.517	0.617	0.456	0.239	07/24/2024 14:08	WG2324660
(T) Barium	*101*					*30.0-143*	*07/24/2024 14:08*	WG2324660
(T) Yttrium	*97.0*					*30.0-136*	*07/24/2024 14:08*	WG2324660

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	6.91		0.656	0.490	07/24/2024 14:08	WG2323576

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	1.08		0.403	0.538	0.178	0.147	07/17/2024 15:26	WG2323576
(T) Barium-133	*81.1*					*30.0-143*	*07/17/2024 15:26*	WG2323576

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	4.06		0.601	0.716	0.577	0.303	07/24/2024 14:08	WG2324660
(T) Barium	*81.9*					*30.0-143*	*07/24/2024 14:08*	WG2324660
(T) Yttrium	*90.7*					*30.0-136*	*07/24/2024 14:08*	WG2324660

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	5.53		0.846	0.644	07/24/2024 14:08	WG2323576

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	1.47		0.595	0.780	0.285	0.235	07/17/2024 15:26	WG2323576
(T) Barium-133	*57.5*					*30.0-143*	*07/17/2024 15:26*	WG2323576

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	-0.283	U	0.448	0.555	0.492	0.258	07/24/2024 14:08	WG2324660
(T) Barium	*88.7*					*30.0-143*	*07/24/2024 14:08*	WG2324660
(T) Yttrium	*98.3*					*30.0-136*	*07/24/2024 14:08*	WG2324660

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.189	J	0.478	0.523	07/24/2024 14:08	WG2323576

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.189		0.167	0.293	0.178	0.140	07/17/2024 15:26	WG2323576
(T) Barium-133	*85.9*					*30.0-143*	*07/17/2024 15:26*	WG2323576

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.205	J	0.361	0.464	0.390	0.206	07/24/2024 14:08	WG2324660
(T) Barium	*93.6*					*30.0-143*	*07/24/2024 14:08*	WG2324660
(T) Yttrium	*98.7*					*30.0-136*	*07/24/2024 14:08*	WG2324660

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.478	J	0.473	0.567	07/24/2024 14:08	WG2323576

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.273	J	0.305	0.474	0.411	0.285	07/17/2024 15:26	WG2323576
(T) Barium-133	*62.8*					*30.0-143*	*07/17/2024 15:26*	WG2323576

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	1.48		0.393	0.500	0.395	0.210	07/24/2024 14:08	WG2324660
(T) Barium	*86.4*					*30.0-143*	*07/24/2024 14:08*	WG2324660
(T) Yttrium	*113*					*30.0-136*	*07/24/2024 14:08*	WG2324660

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.60		0.442	0.506	07/24/2024 14:08	WG2323576

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.117	J	0.203	0.337	0.317	0.218	07/17/2024 15:26	WG2323576
(T) Barium-133	*86.5*					*30.0-143*	*07/17/2024 15:26*	WG2323576

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	4.41		0.447	0.553	0.390	0.207	07/24/2024 14:08	WG2324660
(T) Barium	*96.0*					*30.0-143*	*07/24/2024 14:08*	WG2324660
(T) Yttrium	*90.2*					*30.0-136*	*07/24/2024 14:08*	WG2324660

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	5.26		0.633	0.575	07/24/2024 14:08	WG2323576

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.853		0.448	0.581	0.423	0.282	07/17/2024 15:26	WG2323576
(T) Barium-133	*80.9*					*30.0-143*	*07/17/2024 15:26*	WG2323576

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	-0.280	U	0.508	0.615	0.553	0.289	07/24/2024 14:08	WG2324660
(T) Barium	*103*					*30.0-143*	*07/24/2024 14:08*	WG2324660
(T) Yttrium	*87.3*					*30.0-136*	*07/24/2024 14:08*	WG2324660

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.110	U	0.606	0.811	07/24/2024 14:08	WG2323576

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.110	U	0.330	0.549	0.593	0.415	07/17/2024 15:26	WG2323576
(T) Barium-133	*48.8*					*30.0-143*	*07/17/2024 15:26*	WG2323576

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Method Blank (MB)

(MB) R4098632-1 07/24/24 14:08

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-228	0.209	J	0.171	0.327	0.172
(T) Barium	*104*		*104*		
(T) Yttrium	*94.2*		*94.2*		

L1755983-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1755983-07 07/24/24 14:08 • (DUP) R4098632-5 07/24/24 14:08

Analyte	Original Result pCi/l	Original 2 sigma CE + / -	Original MDA pCi/l	Original Lc pCi/l	DUP Result pCi/l	DUP 2 sigma CE + / -	DUP MDA pCi/l	DUP Lc pCi/l	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-228	4.06	0.601	0.577	0.303	3.04	0.475	0.811	0.431	28.7	1.33		20	3
(T) Barium	*81.9*				*88.1*	*88.1*							
(T) Yttrium	*90.7*				*94.6*	*94.6*							

Laboratory Control Sample (LCS)

(LCS) R4098632-2 07/24/24 14:08

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.73	115	80.0-120	
(T) Barium			*115*		
(T) Yttrium			*93.4*		

L1755026-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1755026-01 07/24/24 14:08 • (MS) R4098632-3 07/24/24 14:08 • (MSD) R4098632-4 07/24/24 14:08

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-228	16.7	0.331	15.8	16.9	92.8	99.2	1	70.0-130			6.48		20
(T) Barium		*118*			*114*	*118*							
(T) Yttrium		*92.2*			*111*	*109*							

Method Blank (MB)

(MB) R4095438-1 07/17/24 15:19

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	0.0312	J	0.0393	0.0598	0.0384
(T) Barium-133	*68.5*		*68.5*		

L1756483-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1756483-04 07/17/24 15:26 • (DUP) R4095438-5 07/17/24 15:26

Analyte	Original Result pCi/l	Original 2 sigma CE + / -	Original MDA pCi/l	Original Lc pCi/l	DUP Result pCi/l	DUP 2 sigma CE + / -	DUP MDA pCi/l	DUP Lc pCi/l	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-226	0.312	0.233	0.246	0.177	0.193	0.281	0.414	0.276	47.3	0.327	J	20	3
(T) Barium-133	*92.0*				*79.2*	*79.2*							

Laboratory Control Sample (LCS)

(LCS) R4095438-2 07/17/24 15:26

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.00	5.16	103	75.0-125	
(T) Barium-133			*76.5*		

L1755983-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1755983-10 07/17/24 15:26 • (MS) R4095438-3 07/17/24 15:26 • (MSD) R4095438-4 07/17/24 15:26

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-226	20.0	0.117	19.4	17.8	96.3	88.6	1	75.0-125			8.28		20
(T) Barium-133		*86.5*			*90.2*	*82.1*							

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDA	Minimum Detectable Activity.
Rec.	Recovery.
RER	Replicate Error Ratio.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(T)	Tracer - A radioisotope of known concentration added to a solution of chemically equivalent radioisotopes at a known concentration to assist in monitoring the yield of the chemical separation.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
U	Below Detectable Limits: Indicates that the analyte was not detected.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
Alliance Technical Group - Bryant, AR

219 Brown Lane
Little Rock, AR 72022

Billing Information:
Accounts Payable
219 Brown Ln.
Bryant, AR 72022

Pres Chk

Report to:
Jonathan Brown

Email To:
Jonathan.Brown@AlliancеTG.com;Jhouse@trcc

Project Description:
Entergy - White Bluff

City/State Collected: Redfield AR

Please Circle: PT MT CT ET

Phone: **501-847-7077**

Client Project #
1145-21-080

Lab Project #
GBMCBAR-ENTERGYWB

Collected by (print):
JLC/KRS

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ___

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Date Results Needed

Quote #

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Fluoride 125mlHDPE-NoPres	Metals 250mlHDPE-HNO3	RA-226/228 1L-HDPE-Add HNO3	RA-226/228 1L-HDPE-Add HNO3							Remarks	Sample # (lab only)
								X2	X2	X2								
RP-1	G	GW		7-8-24	1225	H	X	X	X	X							pH	-01
RP-2		GW		7-8-24	1120	H	X	X	X	X							3.50	-02
RP-3		GW		7-10-24	1025	H	X	X	X	X							3.70	-03
RP-4		GW		7-8-24	1410	H	X	X	X	X							4.45	-04
RP-5		GW		7-10-24	1340	H	X	X	X	X							5.97	-05
RP-6		GW		7-10-24	1300	H	X	X	X	X							3.47	-06
RP-7		GW		7-10-24	1215	H	X	X	X	X							3.98	-07
RP-8		GW		7-10-24	1140	H	X	X	X	X							3.45	-08
RP-9		GW		7-9-24	1520	H	X	X	X	X							7.20	-09
RP-10		GW		7-8-24	1330	H	X	X	X	X							6.42	-10

Chain of Custody Page ___ of ___

Pace
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MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1755983

L-177

Account: GBMCBAR

Template: **T224865**

Prelogin: **P1087081**

PM: **829 - Brittnie L Boyd**

PB: 7.1.24 BK

Shipped Via: **FedEX Ground**

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:Metals = As,Ba,Be,Cd,Co,Cr,Hg,Li,Mo,Pb,Sb,Se,Tl

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

	Date:	Time:		
Relinquished by : (Signature) Jacob Collett	7-11-24	1050	Received by: (Signature)	Trip Blank Received: Yes (No) HCL / MeoH TBR
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 48
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Hailey Robertson	Date: 7/12/24 Time: 0900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / (OK)

Company Name/Address:
Alliance Technical Group - Bryant, AR

219 Brown Lane
Little Rock, AR 72022

Billing Information:
Accounts Payable
219 Brown Ln.
Bryant, AR 72022

Pres Chk

Report to: **Jonathan Brown**

Email To: Jonathan.Brown@AllianceTG.com;Jhouse@trcc

Project Description: **Entergy - White Bluff**

City/State Collected: Redfield, AR

Please Circle: PT MT CT ET

Phone: **501-847-7077**

Client Project # **1145-21-080**

Lab Project # **GBMCBAR-ENTERGYWB**

Collected by (print): SLC/KRS

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Fluoride 125mlHDPE-NoPres	Metals 250mlHDPE-HNO3	RA-226/228 1L-HDPE-Add HNO3	RA-226/228 1L-HDPE-Add HNO3	Remarks	Sample # (lab only)
DUPLICATE (RP-5)	G	GW		7-10-24	1340	4	X	X	X	X	pH 3.17	-11
FIELD BLANK	G	GW		7-10-24	1515	4	X	X	X	X	—	-12
		GW										
		GW										
		GW										

Chain of Custody Page ___ of ___

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12065 Lebanon Rd Mount Juliet, TN 37122
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SDG # L1755963

Table #

Acctnum: **GBMCBAR**
Template: **T224865**
Prelogin: **P1087081**
PM: 829 - Brittnie L Boyd
PB: 7.12.24 BK

Shipped Via: **FedEX Ground**

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:Metals = As,Ba,Be,Cd,Co,Cr,Hg,Li,Mo,Pb,Sb,Se,Tl

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP X Y __N
COC Signed/Accurate: X Y __N
Bottles arrive intact: X Y __N
Correct bottles used: X Y __N
Sufficient volume sent: X Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: X Y __N
RAD Screen <0.5 mR/hr: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / (No) HCL / MeoH TBR	If preservation required by Login: Date/Time
Dado Collect	7/11/24	1050			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 48	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Hailey Rotruck	Date: 7/12/24 Time: 0900	Hold: / Condition: NCF / (OK)

U755983

Tracking Numbers		Temperature
7315 3208 4324		4.1+0.3=4.4 ED AS
7315 3208 4353		3.8+0.3=4.1 ED AS

Name

Date

Company Name/Address:
Alliance Technical Group - Bryant, AR
219 Brown Lane
Little Rock, AR 72022

Billing Information:
Accounts Payable
219 Brown Ln.
Bryant, AR 72022

Pres Chk

Report to: Jonathan Brown

Email To: Jonathan.Brown@AllianceTG.com;Jhouse@trcc

Project Description: Entergy - White Bluff

City/State Collected: Redfield AR

Please Circle: PT MT CT ET

Phone: 501-847-7077

Client Project # 1145-21-080

Lab Project # GBMCBAR-ENTERGYWB

Collected by (print): JLC / KRS

Site/Facility ID #

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Immediately Packed on Ice N ___ Y ✓

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

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MT JULIET, TN

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SDG # L1755983

L-177

Acctnum: GBMCBAR

Template: T224865

Prelogin: P1087081

PM: 829 - Brittnie L Boyd

PB: 7-1-24 BK

Shipped Via: FedEX Ground

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Fluoride 125mlHDPE-NoPres	Metals 250mlHDPE-HNO3	RA-226/228 1L-HDPE-Add HNO3	RA-226/228 1L-HDPE-Add+HNO3	Remarks	Sample # (lab only)
RP-1	G	GW		7-8-24	1225	4	X	X	X	X	pH	-01
RP-2		GW		7-8-24	1120	4	X	X	X	X	?.50	-02
RP-3		GW		7-10-24	1025	4	X	X	X	X	5.10	-03
RP-4		GW		7-8-24	1410	4	X	X	X	X	?.45	-04
RP-5		GW		7-10-24	1340	4	X	X	X	X	5.49	-05
RP-6		GW		7-10-24	1300	4	X	X	X	X	5.47	-06
RP-7		GW		7-10-24	1215	4	X	X	X	X	5.48	-07
RP-8		GW		7-10-24	1140	4	X	X	X	X	5.45	-08
RP-9		GW		7-9-24	1520	4	X	X	X	X	7.20	-09
RP-10		GW		7-8-24	1320	4	X	X	X	X	6.42	-10

Rel: and Alyson Ramos/PACE 7/12/24 1700
Rec. FedEx 7/12/24 1700
Rel. FedEx

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other ________

Remarks: Metals = As,Ba,Be,Cd,Co,Cr,Hg,Li,Mo,Pb,Sb,Se,Tl

AMJ Barth 07/13/2024 0900 EDA8 2040.3=2.3

pH ______ Temp ______
Flow ______ Other ______

Samples returned via: ___ UPS ___ FedEx ___ Courier ________

Tracking # 4006 7698 5900

Sample Receipt Checklist
COC Seal Present/Intact: ___NP ✓Y ___N
COC Signed/Accurate: ✓Y ___N
Bottles arrive intact: ✓Y ___N
Correct bottles used: ✓Y ___N
Sufficient volume sent: ✓Y ___N
If Applicable
VOA Zero Headspace: ___Y ___N
Preservation Correct/Checked: ✓Y ___N
RAD Screen <0.5 mR/hr: ✓Y ___N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)		
Jacob Collette	7-11-24	1050		Trip Blank Received: Yes / (No) HCL / MeoH TBR	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 48	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Hailey Roberts	Date: 7/12/24 Time: 0900	Hold: Condition: NCF / (OK)

Company Name/Address: Alliance Technical Group - Bryant, AR
219 Brown Lane
Little Rock, AR 72022

Billing Information: Accounts Payable
219 Brown Ln.
Bryant, AR 72022

Pres Chk

Report to: Jonathan Brown

Email To: Jonathan.Brown@AllianceTG.com;Jhouse@trcc

Project Description: Entergy - White Bluff

City/State Collected: [illegible], AR

Please Circle: PT MT CT ET

Phone: 501-847-7077

Client Project # 1145-21-080

Lab Project # GBMCBAR-ENTERGYWB

~~Collected by (print):~~ JLC/KRT

~~Site/Facility ID #~~

~~P.O. #~~

Collected by (signature):

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Immediately Packed on Ice N ___ Y ✓

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Fluoride 125mlHDPE-NoPres	Metals 250mlHDPE-HNO3	RA-226/228 1L-HDPE-Add HNO3	RA-226/228 1L-HDPE-Add HNO3	Remarks	Sample # (lab only)
Pres Chk								N ✓	N ✓	N ✓	pH	
DUPLICATE (RP-5)	G	GW		7-10-24	1340	4	X	X	X	X	3.47	-11
FIELD BLANK	(	GW		7-10-24	1515	4	X	X	X	X	—	-12
		GW										
		GW										
		GW										

Chain of Custody Page ___ of ___

Pace® PEOPLE ADVANCING SCIENCE

MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1755983

Table #

Acctnum: **GBMCBAR**
Template: **T224865**
Prelogin: **P1087081**
PM: 829 - Brittnie L Boyd
PB: 7-1-24 BK
Shipped Via: **FedEX Ground**

* Matrix:
SS - Soil **AIR** - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other ________

Remarks:Metals = As,Ba,Be,Cd,Co,Cr,Hg,Li,Mo,Pb,Sb,Se,Tl

Ashley Barth 07/13/2024 0900 E048 2.0+0.3=2.3

pH ______ Temp ______
Flow ______ Other ______

Samples returned via:
___ UPS ___ FedEx ___ Courier ________

Tracking # 4006 7698 5900

Sample Receipt Checklist
COC Seal Present/Intact: NP ✓ Y ___ N
COC Signed/Accurate: ✓ Y ___ N
Bottles arrive intact: ✓ Y ___ N
Correct bottles used: ✓ Y ___ N
Sufficient volume sent: ✓ Y ___ N
If Applicable
VOA Zero Headspace: ___ Y ___ N
Preservation Correct/Checked: ✓ Y ___ N
RAD Screen <0.5 mR/hr: ✓ Y ___ N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / (No) HCL / MeoH TBR	
Brooke Collett	7/11/24	1050			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 48	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Hailey Roberts	Date: 7/12/24 Time: 0900	Hold: / Condition: NCF / (OK)

LT559783

Tracking Numbers	[redacted]	Temperature
7315 3208 4364		4.1+0.3=4.4 ED AB
7315 3208 4353		3.8+0.3=4.1 ED AB

Name

Date

ANALYTICAL REPORT

October 25, 2024

Alliance Technical Group - Bryant, AR

Sample Delivery Group:	L1785834
Samples Received:	10/05/2024
Project Number:	1145-21-080
Description:	Entergy - White Bluff
Site:	WHITE BLUFF
Report To:	Jonathan Brown 219 Brown Lane Little Rock, AR 72022

Entire Report Reviewed By: Myra Ingram

Katie Ingram
Project Manager

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

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RP-1 L1785834-01 GW

Collected by: JLC/BLS | Collected date/time: 10/03/24 11:45 | Received date/time: 10/05/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2376891	10	10/08/24 01:27	10/08/24 01:27	DLH	Mt. Juliet, TN
Mercury by Method 7470A	WG2376960	1	10/08/24 14:09	10/10/24 12:55	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2379526	1	10/20/24 23:45	10/23/24 07:37	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2379598	1	10/20/24 23:44	10/21/24 18:32	LD	Mt. Juliet, TN

RP-2 L1785834-02 GW

Collected by: JLC/BLS | Collected date/time: 10/03/24 10:50 | Received date/time: 10/05/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2376891	1	10/08/24 01:40	10/08/24 01:40	DLH	Mt. Juliet, TN
Mercury by Method 7470A	WG2376960	1	10/08/24 14:09	10/10/24 12:57	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2379526	1	10/20/24 23:45	10/23/24 07:38	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2379598	1	10/20/24 23:44	10/21/24 18:41	LD	Mt. Juliet, TN

RP-3 L1785834-03 GW

Collected by: JLC/BLS | Collected date/time: 10/03/24 12:30 | Received date/time: 10/05/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2376891	10	10/08/24 01:54	10/08/24 01:54	DLH	Mt. Juliet, TN
Mercury by Method 7470A	WG2376960	1	10/08/24 14:09	10/10/24 12:59	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2379526	1	10/20/24 23:45	10/23/24 07:43	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2379598	1	10/20/24 23:44	10/21/24 18:44	LD	Mt. Juliet, TN

RP-4 L1785834-04 GW

Collected by: JLC/BLS | Collected date/time: 10/02/24 15:05 | Received date/time: 10/05/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2376891	1	10/08/24 02:07	10/08/24 02:07	DLH	Mt. Juliet, TN
Mercury by Method 7470A	WG2376960	1	10/08/24 14:09	10/10/24 13:02	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2379526	1	10/20/24 23:45	10/23/24 07:45	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2379598	1	10/20/24 23:44	10/21/24 19:47	LD	Mt. Juliet, TN

RP-5 L1785834-05 GW

Collected by: JLC/BLS | Collected date/time: 10/02/24 11:20 | Received date/time: 10/05/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2376891	1	10/08/24 02:21	10/08/24 02:21	DLH	Mt. Juliet, TN
Mercury by Method 7470A	WG2376960	1	10/08/24 14:09	10/10/24 13:04	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2379526	1	10/20/24 23:45	10/23/24 07:47	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2379598	1	10/20/24 23:44	10/21/24 18:51	LD	Mt. Juliet, TN

RP-6 L1785834-06 GW

Collected by: JLC/BLS | Collected date/time: 10/02/24 12:15 | Received date/time: 10/05/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2376891	10	10/08/24 02:34	10/08/24 02:34	DLH	Mt. Juliet, TN
Mercury by Method 7470A	WG2376960	1	10/08/24 14:09	10/10/24 13:07	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2379526	1	10/20/24 23:45	10/23/24 07:48	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2379598	1	10/20/24 23:44	10/21/24 18:54	LD	Mt. Juliet, TN

RP-7 L1785834-07 GW

Collected by: JLC/BLS | Collected date/time: 10/02/24 12:50 | Received date/time: 10/05/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2376891	1	10/08/24 02:48	10/08/24 02:48	DLH	Mt. Juliet, TN
Mercury by Method 7470A	WG2376960	1	10/08/24 14:09	10/10/24 13:09	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2379526	1	10/20/24 23:45	10/23/24 07:50	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2379598	1	10/20/24 23:44	10/21/24 18:57	LD	Mt. Juliet, TN

RP-8 L1785834-08 GW

Collected by: JLC/BLS | Collected date/time: 10/02/24 13:45 | Received date/time: 10/05/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2376891	1	10/08/24 03:01	10/08/24 03:01	DLH	Mt. Juliet, TN
Mercury by Method 7470A	WG2376960	1	10/08/24 14:09	10/10/24 13:11	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2379526	1	10/20/24 23:45	10/23/24 07:52	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2379598	1	10/20/24 23:44	10/21/24 19:00	LD	Mt. Juliet, TN

RP-9 L1785834-09 GW

Collected by: JLC/BLS | Collected date/time: 10/02/24 15:45 | Received date/time: 10/05/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2376891	1	10/08/24 03:15	10/08/24 03:15	DLH	Mt. Juliet, TN
Mercury by Method 7470A	WG2376961	1	10/08/24 14:06	10/10/24 13:33	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2379526	1	10/20/24 23:45	10/23/24 07:53	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2379598	1	10/20/24 23:44	10/21/24 19:03	LD	Mt. Juliet, TN

RP-10 L1785834-10 GW

Collected by: JLC/BLS | Collected date/time: 10/02/24 14:25 | Received date/time: 10/05/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2376894	1	10/07/24 21:31	10/07/24 21:31	DLH	Mt. Juliet, TN
Mercury by Method 7470A	WG2376961	1	10/08/24 14:06	10/10/24 13:36	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2379526	1	10/20/24 23:45	10/23/24 07:55	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2379598	1	10/20/24 23:44	10/21/24 19:06	LD	Mt. Juliet, TN

DUPLICATE (RP-2) L1785834-11 GW

Collected by: JLC/BLS | Collected date/time: 10/03/24 10:50 | Received date/time: 10/05/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2376894	1	10/07/24 22:12	10/07/24 22:12	DLH	Mt. Juliet, TN
Mercury by Method 7470A	WG2376961	1	10/08/24 14:06	10/10/24 13:52	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2379526	1	10/20/24 23:45	10/23/24 07:56	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2379598	1	10/20/24 23:44	10/21/24 19:09	LD	Mt. Juliet, TN

FIELD BLANK L1785834-12 GW

Collected by: JLC/BLS | Collected date/time: 10/03/24 14:30 | Received date/time: 10/05/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2376894	1	10/07/24 22:25	10/07/24 22:25	DLH	Mt. Juliet, TN
Mercury by Method 7470A	WG2376961	1	10/08/24 14:06	10/10/24 13:23	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2379526	1	10/20/24 23:45	10/23/24 07:58	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2379598	1	10/20/24 23:44	10/21/24 19:19	LD	Mt. Juliet, TN

TRIP BLANK L1785834-13 GW

Collected by	Collected date/time	Received date/time
JLC/BLS	10/03/24 14:30	10/05/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2376894	1	10/07/24 22:39	10/07/24 22:39	DLH	Mt. Juliet, TN
Mercury by Method 7470A	WG2376961	1	10/08/24 14:06	10/10/24 13:55	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG2379526	1	10/20/24 23:45	10/23/24 08:03	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2379598	1	10/20/24 23:44	10/21/24 19:22	LD	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Katie Ingram
Project Manager

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Fluoride	2.06		1.50	10	10/08/2024 01:27	WG2376891

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	0.000265		0.000200	1	10/10/2024 12:55	WG2376960

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Lithium	0.387		0.0150	1	10/23/2024 07:37	WG2379526

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	10/21/2024 18:32	WG2379598
Arsenic	0.0145		0.00200	1	10/21/2024 18:32	WG2379598
Barium	0.0147		0.00200	1	10/21/2024 18:32	WG2379598
Beryllium	0.0209		0.00200	1	10/21/2024 18:32	WG2379598
Cadmium	ND		0.00100	1	10/21/2024 18:32	WG2379598
Chromium	ND		0.00200	1	10/21/2024 18:32	WG2379598
Cobalt	0.204		0.00200	1	10/21/2024 18:32	WG2379598
Lead	ND		0.00200	1	10/21/2024 18:32	WG2379598
Molybdenum	ND		0.00500	1	10/21/2024 18:32	WG2379598
Selenium	0.0105		0.00200	1	10/21/2024 18:32	WG2379598
Thallium	ND		0.00200	1	10/21/2024 18:32	WG2379598

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Fluoride	ND		0.150	1	10/08/2024 01:40	WG2376891

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	10/10/2024 12:57	WG2376960

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Lithium	0.0882		0.0150	1	10/23/2024 07:38	WG2379526

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	10/21/2024 18:41	WG2379598
Arsenic	ND		0.00200	1	10/21/2024 18:41	WG2379598
Barium	0.0322		0.00200	1	10/21/2024 18:41	WG2379598
Beryllium	ND		0.00200	1	10/21/2024 18:41	WG2379598
Cadmium	ND		0.00100	1	10/21/2024 18:41	WG2379598
Chromium	ND		0.00200	1	10/21/2024 18:41	WG2379598
Cobalt	0.00864		0.00200	1	10/21/2024 18:41	WG2379598
Lead	ND		0.00200	1	10/21/2024 18:41	WG2379598
Molybdenum	ND		0.00500	1	10/21/2024 18:41	WG2379598
Selenium	ND		0.00200	1	10/21/2024 18:41	WG2379598
Thallium	ND		0.00200	1	10/21/2024 18:41	WG2379598

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Fluoride	ND		1.50	10	10/08/2024 01:54	WG2376891

Sample Narrative:
L1785834-03 WG2376891: Dilution due to matrix

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.000200	1	10/10/2024 12:59	WG2376960

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Lithium	0.384		0.0150	1	10/23/2024 07:43	WG2379526

Metals (ICPMS) by Method 6020B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Antimony	ND		0.00400	1	10/21/2024 18:44	WG2379598
Arsenic	0.00405		0.00200	1	10/21/2024 18:44	WG2379598
Barium	0.0140		0.00200	1	10/21/2024 18:44	WG2379598
Beryllium	0.00845		0.00200	1	10/21/2024 18:44	WG2379598
Cadmium	ND		0.00100	1	10/21/2024 18:44	WG2379598
Chromium	ND		0.00200	1	10/21/2024 18:44	WG2379598
Cobalt	0.0590		0.00200	1	10/21/2024 18:44	WG2379598
Lead	ND		0.00200	1	10/21/2024 18:44	WG2379598
Molybdenum	ND		0.00500	1	10/21/2024 18:44	WG2379598
Selenium	0.00283		0.00200	1	10/21/2024 18:44	WG2379598
Thallium	ND		0.00200	1	10/21/2024 18:44	WG2379598

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Fluoride	0.335		0.150	1	10/08/2024 02:07	WG2376891

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	10/10/2024 13:02	WG2376960

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Lithium	0.0215		0.0150	1	10/23/2024 07:45	WG2379526

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	10/21/2024 19:47	WG2379598
Arsenic	0.00410		0.00200	1	10/21/2024 19:47	WG2379598
Barium	0.192		0.00200	1	10/21/2024 19:47	WG2379598
Beryllium	ND		0.00200	1	10/21/2024 19:47	WG2379598
Cadmium	ND		0.00100	1	10/21/2024 19:47	WG2379598
Chromium	ND		0.00200	1	10/21/2024 19:47	WG2379598
Cobalt	0.0169		0.00200	1	10/21/2024 19:47	WG2379598
Lead	ND		0.00200	1	10/21/2024 19:47	WG2379598
Molybdenum	0.00969		0.00500	1	10/21/2024 19:47	WG2379598
Selenium	ND		0.00200	1	10/21/2024 19:47	WG2379598
Thallium	ND		0.00200	1	10/21/2024 19:47	WG2379598

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Fluoride	0.346		0.150	1	10/08/2024 02:21	WG2376891

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	10/10/2024 13:04	WG2376960

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Lithium	0.166		0.0150	1	10/23/2024 07:47	WG2379526

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	10/21/2024 18:51	WG2379598
Arsenic	ND		0.00200	1	10/21/2024 18:51	WG2379598
Barium	0.0207		0.00200	1	10/21/2024 18:51	WG2379598
Beryllium	0.00457		0.00200	1	10/21/2024 18:51	WG2379598
Cadmium	ND		0.00100	1	10/21/2024 18:51	WG2379598
Chromium	ND		0.00200	1	10/21/2024 18:51	WG2379598
Cobalt	0.0457		0.00200	1	10/21/2024 18:51	WG2379598
Lead	ND		0.00200	1	10/21/2024 18:51	WG2379598
Molybdenum	ND		0.00500	1	10/21/2024 18:51	WG2379598
Selenium	ND		0.00200	1	10/21/2024 18:51	WG2379598
Thallium	ND		0.00200	1	10/21/2024 18:51	WG2379598

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Fluoride	ND		1.50	10	10/08/2024 02:34	WG2376891

Sample Narrative:

L1785834-06 WG2376891: Dilution due to matrix

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.000200	1	10/10/2024 13:07	WG2376960

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Lithium	0.686		0.0150	1	10/23/2024 07:48	WG2379526

Metals (ICPMS) by Method 6020B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Antimony	ND		0.00400	1	10/21/2024 18:54	WG2379598
Arsenic	ND		0.00200	1	10/21/2024 18:54	WG2379598
Barium	0.0631		0.00200	1	10/21/2024 18:54	WG2379598
Beryllium	0.00675		0.00200	1	10/21/2024 18:54	WG2379598
Cadmium	ND		0.00100	1	10/21/2024 18:54	WG2379598
Chromium	ND		0.00200	1	10/21/2024 18:54	WG2379598
Cobalt	0.0225		0.00200	1	10/21/2024 18:54	WG2379598
Lead	ND		0.00200	1	10/21/2024 18:54	WG2379598
Molybdenum	0.00545		0.00500	1	10/21/2024 18:54	WG2379598
Selenium	ND		0.00200	1	10/21/2024 18:54	WG2379598
Thallium	ND		0.00200	1	10/21/2024 18:54	WG2379598

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Fluoride	0.369		0.150	1	10/08/2024 02:48	WG2376891

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	10/10/2024 13:09	WG2376960

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Lithium	0.242		0.0150	1	10/23/2024 07:50	WG2379526

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	10/21/2024 18:57	WG2379598
Arsenic	ND		0.00200	1	10/21/2024 18:57	WG2379598
Barium	0.0223		0.00200	1	10/21/2024 18:57	WG2379598
Beryllium	0.00940		0.00200	1	10/21/2024 18:57	WG2379598
Cadmium	ND		0.00100	1	10/21/2024 18:57	WG2379598
Chromium	ND		0.00200	1	10/21/2024 18:57	WG2379598
Cobalt	0.0108		0.00200	1	10/21/2024 18:57	WG2379598
Lead	ND		0.00200	1	10/21/2024 18:57	WG2379598
Molybdenum	ND		0.00500	1	10/21/2024 18:57	WG2379598
Selenium	ND		0.00200	1	10/21/2024 18:57	WG2379598
Thallium	ND		0.00200	1	10/21/2024 18:57	WG2379598

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Fluoride	0.169		0.150	1	10/08/2024 03:01	WG2376891

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.000200	1	10/10/2024 13:11	WG2376960

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Lithium	0.0878		0.0150	1	10/23/2024 07:52	WG2379526

Metals (ICPMS) by Method 6020B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Antimony	ND		0.00400	1	10/21/2024 19:00	WG2379598
Arsenic	ND		0.00200	1	10/21/2024 19:00	WG2379598
Barium	0.0637		0.00200	1	10/21/2024 19:00	WG2379598
Beryllium	ND		0.00200	1	10/21/2024 19:00	WG2379598
Cadmium	ND		0.00100	1	10/21/2024 19:00	WG2379598
Chromium	ND		0.00200	1	10/21/2024 19:00	WG2379598
Cobalt	0.0167		0.00200	1	10/21/2024 19:00	WG2379598
Lead	ND		0.00200	1	10/21/2024 19:00	WG2379598
Molybdenum	ND		0.00500	1	10/21/2024 19:00	WG2379598
Selenium	ND		0.00200	1	10/21/2024 19:00	WG2379598
Thallium	ND		0.00200	1	10/21/2024 19:00	WG2379598

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Fluoride	0.237		0.150	1	10/08/2024 03:15	WG2376891

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	10/10/2024 13:33	WG2376961

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Lithium	ND		0.0150	1	10/23/2024 07:53	WG2379526

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	10/21/2024 19:03	WG2379598
Arsenic	ND		0.00200	1	10/21/2024 19:03	WG2379598
Barium	0.104		0.00200	1	10/21/2024 19:03	WG2379598
Beryllium	ND		0.00200	1	10/21/2024 19:03	WG2379598
Cadmium	ND		0.00100	1	10/21/2024 19:03	WG2379598
Chromium	ND		0.00200	1	10/21/2024 19:03	WG2379598
Cobalt	0.00236		0.00200	1	10/21/2024 19:03	WG2379598
Lead	ND		0.00200	1	10/21/2024 19:03	WG2379598
Molybdenum	0.0104		0.00500	1	10/21/2024 19:03	WG2379598
Selenium	ND		0.00200	1	10/21/2024 19:03	WG2379598
Thallium	ND		0.00200	1	10/21/2024 19:03	WG2379598

Wet Chemistry by Method 9056A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Fluoride	0.452	P1	0.150	1	10/07/2024 21:31	WG2376894

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.000200	1	10/10/2024 13:36	WG2376961

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Lithium	0.0314		0.0150	1	10/23/2024 07:55	WG2379526

Metals (ICPMS) by Method 6020B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Antimony	ND		0.00400	1	10/21/2024 19:06	WG2379598
Arsenic	ND		0.00200	1	10/21/2024 19:06	WG2379598
Barium	0.0299		0.00200	1	10/21/2024 19:06	WG2379598
Beryllium	0.00551		0.00200	1	10/21/2024 19:06	WG2379598
Cadmium	ND		0.00100	1	10/21/2024 19:06	WG2379598
Chromium	ND		0.00200	1	10/21/2024 19:06	WG2379598
Cobalt	0.0227		0.00200	1	10/21/2024 19:06	WG2379598
Lead	ND		0.00200	1	10/21/2024 19:06	WG2379598
Molybdenum	ND		0.00500	1	10/21/2024 19:06	WG2379598
Selenium	ND		0.00200	1	10/21/2024 19:06	WG2379598
Thallium	ND		0.00200	1	10/21/2024 19:06	WG2379598

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Fluoride	ND		0.150	1	10/07/2024 22:12	WG2376894

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	10/10/2024 13:52	WG2376961

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Lithium	0.0851		0.0150	1	10/23/2024 07:56	WG2379526

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	10/21/2024 19:09	WG2379598
Arsenic	ND		0.00200	1	10/21/2024 19:09	WG2379598
Barium	0.0323		0.00200	1	10/21/2024 19:09	WG2379598
Beryllium	ND		0.00200	1	10/21/2024 19:09	WG2379598
Cadmium	ND		0.00100	1	10/21/2024 19:09	WG2379598
Chromium	ND		0.00200	1	10/21/2024 19:09	WG2379598
Cobalt	0.00856		0.00200	1	10/21/2024 19:09	WG2379598
Lead	ND		0.00200	1	10/21/2024 19:09	WG2379598
Molybdenum	ND		0.00500	1	10/21/2024 19:09	WG2379598
Selenium	ND		0.00200	1	10/21/2024 19:09	WG2379598
Thallium	ND		0.00200	1	10/21/2024 19:09	WG2379598

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Fluoride	ND		0.150	1	10/07/2024 22:25	WG2376894

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	10/10/2024 13:23	WG2376961

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Lithium	ND		0.0150	1	10/23/2024 07:58	WG2379526

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	10/21/2024 19:19	WG2379598
Arsenic	ND		0.00200	1	10/21/2024 19:19	WG2379598
Barium	ND		0.00200	1	10/21/2024 19:19	WG2379598
Beryllium	ND		0.00200	1	10/21/2024 19:19	WG2379598
Cadmium	ND		0.00100	1	10/21/2024 19:19	WG2379598
Chromium	ND		0.00200	1	10/21/2024 19:19	WG2379598
Cobalt	ND		0.00200	1	10/21/2024 19:19	WG2379598
Lead	ND		0.00200	1	10/21/2024 19:19	WG2379598
Molybdenum	ND		0.00500	1	10/21/2024 19:19	WG2379598
Selenium	ND		0.00200	1	10/21/2024 19:19	WG2379598
Thallium	ND		0.00200	1	10/21/2024 19:19	WG2379598

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Fluoride	ND		0.150	1	10/07/2024 22:39	WG2376894

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	10/10/2024 13:55	WG2376961

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Lithium	ND		0.0150	1	10/23/2024 08:03	WG2379526

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	10/21/2024 19:22	WG2379598
Arsenic	ND		0.00200	1	10/21/2024 19:22	WG2379598
Barium	ND		0.00200	1	10/21/2024 19:22	WG2379598
Beryllium	ND		0.00200	1	10/21/2024 19:22	WG2379598
Cadmium	ND		0.00100	1	10/21/2024 19:22	WG2379598
Chromium	0.00271		0.00200	1	10/21/2024 19:22	WG2379598
Cobalt	ND		0.00200	1	10/21/2024 19:22	WG2379598
Lead	ND		0.00200	1	10/21/2024 19:22	WG2379598
Molybdenum	ND		0.00500	1	10/21/2024 19:22	WG2379598
Selenium	ND		0.00200	1	10/21/2024 19:22	WG2379598
Thallium	ND		0.00200	1	10/21/2024 19:22	WG2379598

Method Blank (MB)

(MB) R4132364-1 10/07/24 20:58

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Fluoride	U		0.0761	0.150

L1785828-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1785828-01 10/07/24 21:25 • (DUP) R4132364-3 10/07/24 21:38

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Fluoride	ND	ND	1	200	P1	15

L1785828-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1785828-02 10/07/24 22:18 • (DUP) R4132364-6 10/07/24 22:32

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Fluoride	0.235	ND	1	200	P1	15

Laboratory Control Sample (LCS)

(LCS) R4132364-2 10/07/24 21:11

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluoride	8.00	8.68	109	80.0-120	

L1785828-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1785828-01 10/07/24 21:25 • (MS) R4132364-4 10/07/24 21:52 • (MSD) R4132364-5 10/07/24 22:05

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Fluoride	8.00	ND	8.17	8.55	100	105	1	80.0-120			4.48	15

L1785828-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1785828-02 10/07/24 22:18 • (MS) R4132364-7 10/07/24 22:45

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Fluoride	8.00	0.235	8.24	100	1	80.0-120	

Method Blank (MB)

(MB) R4132397-1 10/07/24 21:04

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Fluoride	U		0.0761	0.150

L1785834-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1785834-10 10/07/24 21:31 • (DUP) R4132397-3 10/07/24 21:45

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Fluoride	0.452	0.352	1	24.8	P1	15

L1785884-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1785884-02 10/08/24 01:21 • (DUP) R4132397-5 10/08/24 01:34

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Fluoride	ND	ND	1	0.000		15

Laboratory Control Sample (LCS)

(LCS) R4132397-2 10/07/24 21:18

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluoride	8.00	7.88	98.5	80.0-120	

L1785834-10 Original Sample (OS) • Matrix Spike (MS)

(OS) L1785834-10 10/07/24 21:31 • (MS) R4132397-4 10/07/24 21:58

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Fluoride	8.00	0.452	8.80	104	1	80.0-120	

L1785884-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1785884-02 10/08/24 01:21 • (MS) R4132397-6 10/08/24 01:48 • (MSD) R4132397-7 10/08/24 02:28

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Fluoride	8.00	ND	8.01	8.59	100	107	1	80.0-120			6.96	15

Method Blank (MB)

(MB) R4130993-1 10/10/24 12:04

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Mercury	U		0.0000700	0.000200

Laboratory Control Sample (LCS)

(LCS) R4130993-2 10/10/24 12:06

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	0.00300	0.00286	95.2	80.0-120	

L1785828-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1785828-10 10/10/24 12:09 • (MS) R4130993-4 10/10/24 12:13 • (MSD) R4130993-5 10/10/24 12:21

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.00300	ND	0.00297	0.00296	99.0	98.5	1	75.0-125			0.482	20

Method Blank (MB)

(MB) R4131057-1 10/10/24 13:19

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Mercury	U		0.0000700	0.000200

Laboratory Control Sample (LCS)

(LCS) R4131057-2 10/10/24 13:21

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	0.00300	0.00296	98.8	80.0-120	

L1785834-12 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1785834-12 10/10/24 13:23 • (MS) R4131057-4 10/10/24 13:28 • (MSD) R4131057-5 10/10/24 13:31

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.00300	ND	0.00294	0.00293	98.1	97.6	1	75.0-125			0.463	20

Method Blank (MB)

(MB) R4136460-1 10/23/24 07:23

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Lithium	U		0.00485	0.0150

Laboratory Control Sample (LCS)

(LCS) R4136460-2 10/23/24 07:25

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Lithium	1.00	1.01	101	80.0-120	

L1785861-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1785861-02 10/23/24 07:27 • (MS) R4136460-4 10/23/24 07:30 • (MSD) R4136460-5 10/23/24 07:32

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Lithium	1.00	0.0297	1.02	1.06	99.5	103	1	75.0-125			3.05	20

Method Blank (MB)

(MB) R4135564-1 10/21/24 18:04

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Antimony	U		0.000310	0.00400
Arsenic	U		0.000120	0.00200
Barium	U		0.000500	0.00200
Beryllium	U		0.000200	0.00200
Cadmium	U		0.000120	0.00100
Chromium	U		0.000900	0.00200
Cobalt	U		0.000100	0.00200
Lead	U		0.000500	0.00200
Molybdenum	U		0.000500	0.00500
Selenium	U		0.000250	0.00200
Thallium	U		0.000130	0.00200

Laboratory Control Sample (LCS)

(LCS) R4135564-2 10/21/24 18:07

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Antimony	0.0500	0.0500	100	80.0-120	
Arsenic	0.0500	0.0494	98.8	80.0-120	
Barium	0.0500	0.0477	95.3	80.0-120	
Beryllium	0.0500	0.0485	97.0	80.0-120	
Cadmium	0.0500	0.0510	102	80.0-120	
Chromium	0.0500	0.0506	101	80.0-120	
Cobalt	0.0500	0.0510	102	80.0-120	
Lead	0.0500	0.0475	95.0	80.0-120	
Molybdenum	0.0500	0.0485	96.9	80.0-120	
Selenium	0.0500	0.0478	95.6	80.0-120	
Thallium	0.0500	0.0482	96.5	80.0-120	

L1785861-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1785861-01 10/21/24 18:10 • (MS) R4135564-4 10/21/24 18:16 • (MSD) R4135564-5 10/21/24 18:20

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Antimony	0.0500	ND	0.0522	0.0516	104	103	1	75.0-125			1.26	20
Arsenic	0.0500	0.00340	0.0525	0.0520	98.2	97.3	1	75.0-125			0.870	20
Barium	0.0500	0.116	0.163	0.165	94.4	98.3	1	75.0-125			1.20	20
Beryllium	0.0500	ND	0.0479	0.0475	95.1	94.3	1	75.0-125			0.794	20
Cadmium	0.0500	ND	0.0524	0.0520	103	102	1	75.0-125			0.836	20

L1785861-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1785861-01 10/21/24 18:10 • (MS) R4135564-4 10/21/24 18:16 • (MSD) R4135564-5 10/21/24 18:20

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chromium	0.0500	ND	0.0519	0.0513	100	99.0	1	75.0-125			1.22	20
Cobalt	0.0500	0.00756	0.0576	0.0572	100	99.4	1	75.0-125			0.701	20
Lead	0.0500	ND	0.0471	0.0473	94.1	94.6	1	75.0-125			0.520	20
Molybdenum	0.0500	ND	0.0496	0.0494	98.1	97.8	1	75.0-125			0.328	20
Selenium	0.0500	ND	0.0506	0.0485	101	97.0	1	75.0-125			4.26	20
Thallium	0.0500	ND	0.0483	0.0490	95.5	96.9	1	75.0-125			1.41	20

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
Alliance Technical Group - Bryant, AR

219 Brown Lane
Little Rock, AR 72022

Billing Information:
Accounts Payable
219 Brown Ln.
Bryant, AR 72022

Pres Chk

Report to:
Jonathan Brown

Email To:
Jonathan.Brown@AllianceTG.com;Jhouse@trcc

Project Description:
Entergy - White Bluff

City/State Collected: Redfield, AR

Please Circle: PT MT (CT) ET

Phone: 501-847-7077

Client Project #
1145-21-080

Lab Project #
GBMCBAR-ENTERGYWB

Collected by (print):
JLC / BLS

Site/Facility ID #
WHITE BLUFF

P.O. #

Collected by (signature):
Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	*Metals 250mlHDPE-HNO3	FLUORIDE 125mlHDPE-NoPres	RA-226/RA-228 1L-HDPE-Add HNO3	RA-226/RA-228 1L-HDPE-Add-HNO3	Remarks	Sample # (lab only)
							<2		<2	<2	pH	
RP-1	G	GW		10-3-24	1145	4	X	X	X	X	3.71	-01
RP-2	G	GW		10-3-24	1050	4	X	X	X	X	3.65	-02
RP-3	G	GW		10-3-24	1230	4	X	X	X	X	4.67	-03
RP-4	G	GW		10-2-24	1505	4	X	X	X	X	5.86	-04
RP-5	G	GW		10-2-24	1120	4	X	X	X	X	3.50	-05
RP-6	G	GW		10-2-24	1215	4	X	X	X	X	4.86	-06
RP-7	G	GW		10-2-24	1350	4	X	X	X	X	3.73	-07
RP-8	G	GW		10-2-24	1345	4	X	X	X	X	5.76	-08
RP-9	G	GW		10-2-24	1545	4	X	X	X	X	6.18	-09
RP-10	G	GW		10-2-24	1425	4	X	X	X	X	3.72	-10

Chain of Custody Page ___ of ___

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PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1755834
K065

Acctnum: GBMCBAR
Template: T231256
Prelogin: P1104842
PM: 829 - Brittnie L Boyd
PB: LM 9/25/24

Shipped Via: FedEX Priority

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:*Metals = ASG,BAG,BEG,CDG,COG,CRG,HG,LIICP,MOG,PBG,SBG,SEG,TLG

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD Screen <0.5 mR/hr: Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / (No) HCL / MeoH TBR
Jacob Colbert	10-4-24	1405		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 52
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10-5-24 Time: 0900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / (OK)

Company Name/Address:
Alliance Technical Group - Bryant, AR

219 Brown Lane
Little Rock, AR 72022

Billing Information:
Accounts Payable
219 Brown Ln.
Bryant, AR 72022

Pres Chk

Report to:
Jonathan Brown

Email To:
Jonathan.Brown@AllianceTG.com;Jhouse@trcc

Project Description:
Entergy - White Bluff

City/State Collected: Redfield, AR

Please Circle: PT MT (CT) ET

Phone: **501-847-7077**

Client Project #
1145-21-080

Lab Project #
GBMCBAR-ENTERGYWB

Collected by (print):
SLC / BLS

Site/Facility ID #
WHITE BLUFF

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ___

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

No. of Cntrs

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	*Metals 250mlHDPE-HNO3	FLUORIDE 125mlHDPE-NoPres	RA-226/RA-228 1L-HDPE-Add HNO3	RA-226/RA-228 1L-HDPE-Add-HNO3	Remarks	Sample # (lab only)
		GW									pH	
		GW										
DUPLICATE (RIP-2)	G	GW		10-3-24	1050	4	X	X	X	X	3.65	-11
FIELD BLANK	G	GW		10-3-24	1430	4	X	X	X	X		-12
TRIP BLANK	G	GW		10-3-24	1430	4	X	X	X	X		-13

Chain of Custody Page ___ of ___

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1785634

Table #

Acctnum: **GBMCBAR**
Template: **T231256**
Prelogin: **P1104842**
PM: **829 - Brittnie L Boyd**
PB: LvL 9/25/24
Shipped Via: **FedEX Priority**

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:*Metals = ASG,BAG,BEG,CDG,COG,CRG,HG,LIICP,MOG,PBG,SBG,SEG,TLG

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD Screen <0.5 mR/hr: Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
Jacob Colbert	10-4-24	1405			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10-5-24 Time: 0900	Hold: / Condition: NCF / OK

4785884

Fed Ex tracking #	Gun ID	Temperature
4041 0487 2820	TLA9	3.1 + 0.3 = 3.4
4041 0487 2738	↓	4.6 + 0.3 = 4.9
4041 0487 2727		0.9 + 0.3 = 1.2
4041 0487 2808		1.3 + 0.3 = 1.6

Name

Date

ANALYTICAL REPORT

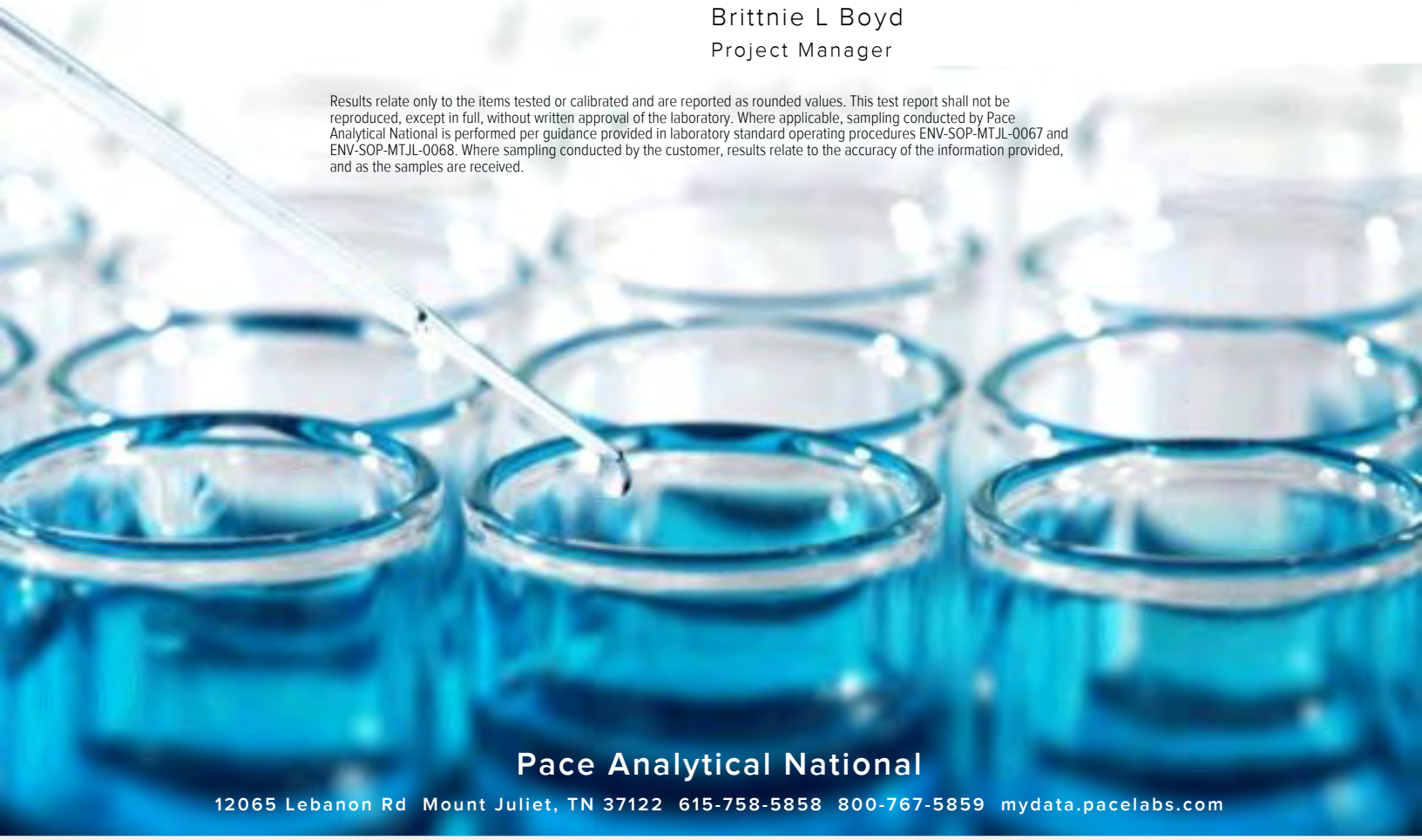
November 01, 2024

Alliance Technical Group - Bryant, AR

Sample Delivery Group:	L1785836
Samples Received:	10/05/2024
Project Number:	1145-21-080
Description:	Entergy - White Bluff
Site:	WHITE BLUFF
Report To:	Jonathan Brown 219 Brown Lane Little Rock, AR 72022

Entire Report Reviewed By:

Brittnie L Boyd
Project Manager



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

TABLE OF CONTENTS

RP-1 L1785836-01 Non-Potable Water

Collected by: JLC/BLS | Collected date/time: 10/03/24 11:45 | Received date/time: 10/05/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2376896	1	10/07/24 14:41	10/31/24 15:33	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2388900	1	10/25/24 13:34	10/31/24 15:33	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2388900	1	10/25/24 13:34	10/30/24 10:41	ZRG	Mt. Juliet, TN

RP-2 L1785836-02 Non-Potable Water

Collected by: JLC/BLS | Collected date/time: 10/03/24 10:50 | Received date/time: 10/05/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2376898	1	10/08/24 20:44	10/16/24 22:00	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2388900	1	10/25/24 13:34	10/30/24 10:41	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2388900	1	10/25/24 13:34	10/30/24 10:41	ZRG	Mt. Juliet, TN

RP-3 L1785836-03 Non-Potable Water

Collected by: JLC/BLS | Collected date/time: 10/03/24 12:30 | Received date/time: 10/05/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2376898	1	10/08/24 20:44	10/16/24 22:00	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2388900	1	10/25/24 13:34	10/30/24 10:41	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2388900	1	10/25/24 13:34	10/30/24 10:41	ZRG	Mt. Juliet, TN

RP-4 L1785836-04 Non-Potable Water

Collected by: JLC/BLS | Collected date/time: 10/02/24 15:05 | Received date/time: 10/05/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2376898	1	10/08/24 20:44	10/16/24 22:00	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2388900	1	10/25/24 13:34	10/30/24 10:41	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2388900	1	10/25/24 13:34	10/30/24 10:41	ZRG	Mt. Juliet, TN

RP-5 L1785836-05 Non-Potable Water

Collected by: JLC/BLS | Collected date/time: 10/02/24 11:20 | Received date/time: 10/05/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2376898	1	10/08/24 20:44	10/16/24 22:00	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2388900	1	10/25/24 13:34	10/30/24 10:41	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2388900	1	10/25/24 13:34	10/30/24 10:41	ZRG	Mt. Juliet, TN

RP-6 L1785836-06 Non-Potable Water

Collected by: JLC/BLS | Collected date/time: 10/02/24 12:15 | Received date/time: 10/05/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2376898	1	10/08/24 20:44	10/16/24 22:00	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2388900	1	10/25/24 13:34	10/30/24 10:41	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2388900	1	10/25/24 13:34	10/30/24 10:41	ZRG	Mt. Juliet, TN

RP-7 L1785836-07 Non-Potable Water

Collected by: JLC/BLS | Collected date/time: 10/02/24 12:50 | Received date/time: 10/05/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2376898	1	10/08/24 20:44	10/16/24 22:00	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2388900	1	10/25/24 13:34	10/30/24 10:41	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2388900	1	10/25/24 13:34	10/30/24 10:41	ZRG	Mt. Juliet, TN

RP-8 L1785836-08 Non-Potable Water

Collected by: JLC/BLS | Collected date/time: 10/02/24 13:45 | Received date/time: 10/05/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2376898	1	10/08/24 20:44	10/16/24 22:00	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2388900	1	10/25/24 13:34	10/30/24 10:41	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2388900	1	10/25/24 13:34	10/30/24 10:41	ZRG	Mt. Juliet, TN

RP-9 L1785836-09 Non-Potable Water

Collected by: JLC/BLS | Collected date/time: 10/02/24 15:45 | Received date/time: 10/05/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2376898	1	10/08/24 20:44	10/16/24 22:00	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2388900	1	10/25/24 13:34	10/30/24 10:41	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2388900	1	10/25/24 13:34	10/30/24 10:41	ZRG	Mt. Juliet, TN

RP-10 L1785836-10 Non-Potable Water

Collected by: JLC/BLS | Collected date/time: 10/02/24 14:25 | Received date/time: 10/05/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2376898	1	10/08/24 20:44	10/21/24 18:18	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2388900	1	10/25/24 13:34	10/30/24 10:41	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2388900	1	10/25/24 13:34	10/30/24 10:41	ZRG	Mt. Juliet, TN

DUPLICATE (RP-2) L1785836-11 Non-Potable Water

Collected by: JLC/BLS | Collected date/time: 10/03/24 10:50 | Received date/time: 10/05/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2376898	1	10/08/24 20:44	10/21/24 18:18	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2388900	1	10/25/24 13:34	10/30/24 10:41	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2388900	1	10/25/24 13:34	10/30/24 10:41	ZRG	Mt. Juliet, TN

FIELD BLANK L1785836-12 Non-Potable Water

Collected by: JLC/BLS | Collected date/time: 10/03/24 14:30 | Received date/time: 10/05/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2376898	1	10/08/24 20:44	10/16/24 22:00	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2388900	1	10/25/24 13:34	10/30/24 10:41	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2388900	1	10/25/24 13:34	10/30/24 10:41	ZRG	Mt. Juliet, TN

SAMPLE SUMMARY

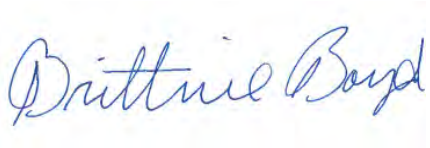
TRIP BLANK L1785836-13 Non-Potable Water

Collected by: JLC/BLS
Collected date/time: 10/03/24 14:30
Received date/time: 10/05/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2376898	1	10/08/24 20:44	10/16/24 22:00	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2388900	1	10/25/24 13:34	10/30/24 10:41	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2388900	1	10/25/24 13:34	10/30/24 10:41	ZRG	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Brittnie L Boyd
Project Manager

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	9.93		0.439	0.717	0.505	0.267	10/31/2024 15:33	WG2376896
(T) Barium	*116*					*30.0-143*	*10/31/2024 15:33*	WG2376896
(T) Yttrium	*114*					*30.0-136*	*10/31/2024 15:33*	WG2376896

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	11.5		0.671	0.589	10/31/2024 15:33	WG2388900

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	1.59		0.507	1.27	0.303	0.210	10/30/2024 10:41	WG2388900
(T) Barium-133	*97.9*					*30.0-143*	*10/30/2024 10:41*	WG2388900

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	2.01		0.323	0.610	0.539	0.284	10/16/2024 22:00	WG2376898
(T) Barium	*111*					*30.0-143*	*10/16/2024 22:00*	WG2376898
(T) Yttrium	*93.5*					*30.0-136*	*10/16/2024 22:00*	WG2376898

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	2.52		0.493	0.681	10/30/2024 10:41	WG2388900

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.514		0.373	0.730	0.416	0.281	10/30/2024 10:41	WG2388900
(T) Barium-133	*78.5*					*30.0-143*	*10/30/2024 10:41*	WG2388900

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	5.49		0.527	0.856	0.832	0.435	10/16/2024 22:00	WG2376898
(T) Barium	*105*					*30.0-143*	*10/16/2024 22:00*	WG2376898
(T) Yttrium	*74.0*					*30.0-136*	*10/16/2024 22:00*	WG2376898

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	6.60		0.689	0.891	10/30/2024 10:41	WG2388900

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	1.11		0.444	1.06	0.320	0.221	10/30/2024 10:41	WG2388900
(T) Barium-133	*84.2*					*30.0-143*	*10/30/2024 10:41*	WG2388900

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	2.60		0.579	0.984	1.00	0.528	10/16/2024 22:00	WG2376898
(T) Barium	*91.7*					*30.0-143*	*10/16/2024 22:00*	WG2376898
(T) Yttrium	*57.0*					*30.0-136*	*10/16/2024 22:00*	WG2376898

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	3.15		0.665	1.05	10/30/2024 10:41	WG2388900

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.549		0.327	0.658	0.310	0.217	10/30/2024 10:41	WG2388900
(T) Barium-133	*90.3*					*30.0-143*	*10/30/2024 10:41*	WG2388900

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	4.38		0.461	0.782	0.734	0.384	10/16/2024 22:00	WG2376898
(T) Barium	*97.1*					*30.0-143*	*10/16/2024 22:00*	WG2376898
(T) Yttrium	*78.8*					*30.0-136*	*10/16/2024 22:00*	WG2376898

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	4.91		0.552	0.785	10/30/2024 10:41	WG2388900

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.530		0.303	0.675	0.278	0.195	10/30/2024 10:41	WG2388900
(T) Barium-133	*86.2*					*30.0-143*	*10/30/2024 10:41*	WG2388900

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.700	J	0.389	0.670	0.708	0.368	10/16/2024 22:00	WG2376898
(T) Barium	*101*					*30.0-143*	*10/16/2024 22:00*	WG2376898
(T) Yttrium	*97.3*					*30.0-136*	*10/16/2024 22:00*	WG2376898

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.18		0.470	0.753	10/30/2024 10:41	WG2388900

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.475		0.264	0.650	0.255	0.171	10/30/2024 10:41	WG2388900
(T) Barium-133	*101*					*30.0-143*	*10/30/2024 10:41*	WG2388900

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	4.84		0.456	0.764	0.713	0.373	10/16/2024 22:00	WG2376898
(T) Barium	*96.0*					*30.0-143*	*10/16/2024 22:00*	WG2376898
(T) Yttrium	*84.6*					*30.0-136*	*10/16/2024 22:00*	WG2376898

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	5.93		0.624	0.774	10/30/2024 10:41	WG2388900

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	1.09		0.426	1.07	0.302	0.209	10/30/2024 10:41	WG2388900
(T) Barium-133	*82.4*					*30.0-143*	*10/30/2024 10:41*	WG2388900

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.54		0.470	0.792	0.837	0.437	10/16/2024 22:00	WG2376898
(T) Barium	*84.5*					*30.0-143*	*10/16/2024 22:00*	WG2376898
(T) Yttrium	*88.3*					*30.0-136*	*10/16/2024 22:00*	WG2376898

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.99		0.604	0.958	10/30/2024 10:41	WG2388900

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.446	J	0.379	0.669	0.467	0.305	10/30/2024 10:41	WG2388900
(T) Barium-133	*82.1*					*30.0-143*	*10/30/2024 10:41*	WG2388900

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.283	U	0.553	0.886	1.02	0.532	10/16/2024 22:00	WG2376898
(T) Barium	*86.4*					*30.0-143*	*10/16/2024 22:00*	WG2376898
(T) Yttrium	*80.2*					*30.0-136*	*10/16/2024 22:00*	WG2376898

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.545	J	0.608	1.07	10/30/2024 10:41	WG2388900

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.262	J	0.253	0.459	0.322	0.219	10/30/2024 10:41	WG2388900
(T) Barium-133	*107*					*30.0-143*	*10/30/2024 10:41*	WG2388900

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.0366	U	0.413	0.742	0.815	0.426	10/21/2024 18:18	WG2376898
(T) Barium	*74.2*					*30.0-143*	*10/21/2024 18:18*	WG2376898
(T) Yttrium	*105*					*30.0-136*	*10/21/2024 18:18*	WG2376898

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.190	U	0.471	0.882	10/30/2024 10:41	WG2388900

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.153	J	0.227	0.340	0.337	0.229	10/30/2024 10:41	WG2388900
(T) Barium-133	*95.8*					*30.0-143*	*10/30/2024 10:41*	WG2388900

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	1.14		0.496	0.845	0.943	0.494	10/21/2024 18:18	WG2376898
(T) Barium	*74.8*					*30.0-143*	*10/21/2024 18:18*	WG2376898
(T) Yttrium	*85.6*					*30.0-136*	*10/21/2024 18:18*	WG2376898

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.88		0.622	1.00	10/30/2024 10:41	WG2388900

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.738		0.375	0.737	0.347	0.232	10/30/2024 10:41	WG2388900
(T) Barium-133	*106*					*30.0-143*	*10/30/2024 10:41*	WG2388900

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	1.56		0.419	0.721	0.739	0.386	10/16/2024 22:00	WG2376898
(T) Barium	*100*					*30.0-143*	*10/16/2024 22:00*	WG2376898
(T) Yttrium	*85.0*					*30.0-136*	*10/16/2024 22:00*	WG2376898

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.75		0.485	0.817	10/30/2024 10:41	WG2388900

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.187	J	0.245	0.390	0.349	0.236	10/30/2024 10:41	WG2388900
(T) Barium-133	*94.9*					*30.0-143*	*10/30/2024 10:41*	WG2388900

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.505	J	0.381	0.672	0.699	0.365	10/16/2024 22:00	WG2376898
(T) Barium	*109*					*30.0-143*	*10/16/2024 22:00*	WG2376898
(T) Yttrium	*91.2*					*30.0-136*	*10/16/2024 22:00*	WG2376898

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.698	J	0.456	0.785	10/30/2024 10:41	WG2388900

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.193	J	0.251	0.411	0.357	0.237	10/30/2024 10:41	WG2388900
(T) Barium-133	*110*					*30.0-143*	*10/30/2024 10:41*	WG2388900

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Method Blank (MB)

(MB) R4140550-1 10/31/24 15:33

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-228	-0.312	U	0.159	0.305	0.160
(T) Barium	*123*		*123*		
(T) Yttrium	*87.9*		*87.9*		

L1785836-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1785836-01 10/31/24 15:33 • (DUP) R4140550-5 10/31/24 15:33

Analyte	Original Result pCi/l	Original 2 sigma CE + / -	Original MDA pCi/l	Original Lc pCi/l	DUP Result pCi/l	DUP 2 sigma CE + / -	DUP MDA pCi/l	DUP Lc pCi/l	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-228	9.93	0.439	0.505	0.267	9.25	0.465	0.621	0.324	7.07	1.06		20	3
(T) Barium	*116*				*122*	*122*							
(T) Yttrium	*114*				*110*	*110*							

Laboratory Control Sample (LCS)

(LCS) R4140550-2 10/31/24 15:33

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	4.54	90.7	80.0-120	
(T) Barium			*135*		
(T) Yttrium			*107*		

L1785635-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1785635-03 10/31/24 15:33 • (MS) R4140550-3 10/31/24 15:33

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Radium-228	16.7	0.191	16.3	96.4	1	70.0-130	
(T) Barium		*111*		*123*			
(T) Yttrium		*101*		*105*			

Method Blank (MB)

(MB) R4137299-1 10/16/24 14:45

Analyte	MB Result	MB Qualifier	MB 2 sigma CE	MB MDA	MB Lc
	pCi/l		+ / -	pCi/l	pCi/l
Radium-228	0.187	J	0.139	0.256	0.135
(T) Barium	*112*		*112*		
(T) Yttrium	*98.5*		*98.5*		

L1785836-13 Original Sample (OS) • Duplicate (DUP)

(OS) L1785836-13 10/16/24 22:00 • (DUP) R4137299-3 10/16/24 14:45

Analyte	Original Result	Original 2 sigma CE	Original MDA	Original Lc	DUP Result	DUP 2 sigma CE	DUP MDA	DUP Lc	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
	pCi/l	+ / -	pCi/l	pCi/l	pCi/l	+ / -	pCi/l	pCi/l	%			%	
Radium-228	0.505	0.381	0.699	0.365	-0.403	0.363	0.686	0.357	200	1.72	U	20	3
(T) Barium	*109*				*138*	*138*							
(T) Yttrium	*91.2*				*113*	*113*							

Laboratory Control Sample (LCS)

(LCS) R4137299-2 10/16/24 14:45

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
Radium-228	5.00	5.51	110	80.0-120	
(T) Barium			*112*		
(T) Yttrium			*92.4*		

L1781116-26 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1781116-26 10/23/24 23:23 • (MS) R4137299-6 10/23/24 23:23 • (MSD) R4137299-7 10/23/24 23:23

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits
	pCi/l	pCi/l	pCi/l	pCi/l	%	%		%			%		%
Radium-228	16.7	0.0764	13.9	12.8	82.8	76.0	1	70.0-130			8.55		20
(T) Barium		*93.8*			*109*	*92.0*							
(T) Yttrium		*108*			*106*	*104*							

Method Blank (MB)

(MB) R4139728-1 10/30/24 10:41

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	0.00245	U	0.0671	0.123	0.0799
(T) Barium-133	*69.3*		*69.3*		

L1785836-13 Original Sample (OS) • Duplicate (DUP)

(OS) L1785836-13 10/30/24 10:41 • (DUP) R4139728-5 10/30/24 10:41

Analyte	Original Result pCi/l	Original 2 sigma CE + / -	Original MDA pCi/l	Original Lc pCi/l	DUP Result pCi/l	DUP 2 sigma CE + / -	DUP MDA pCi/l	DUP Lc pCi/l	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-226	0.193	0.251	0.357	0.237	-0.129	0.198	0.462	0.301	200	1.01	U	20	3
(T) Barium-133	*110*				*73.6*	*73.6*							

Laboratory Control Sample (LCS)

(LCS) R4139728-2 10/30/24 10:41

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.00	4.70	94.0	80.0-120	
(T) Barium-133			*85.1*		

L1785836-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1785836-01 10/30/24 10:41 • (MS) R4139728-3 10/30/24 10:41 • (MSD) R4139728-4 10/30/24 10:41

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-226	20.0	1.59	20.4	17.3	94.0	78.6	1	75.0-125			16.3		20
(T) Barium-133		*97.9*			*96.4*	*92.3*							

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDA	Minimum Detectable Activity.
Rec.	Recovery.
RER	Replicate Error Ratio.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(T)	Tracer - A radioisotope of known concentration added to a solution of chemically equivalent radioisotopes at a known concentration to assist in monitoring the yield of the chemical separation.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
U	Below Detectable Limits: Indicates that the analyte was not detected.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
Alliance Technical Group - Bryant, AR

219 Brown Lane
Little Rock, AR 72022

Billing Information:
Accounts Payable
219 Brown Ln.
Bryant, AR 72022

Pres Chk

Report to: **Jonathan Brown**

Email To: Jonathan.Brown@AllianceTG.com;Jhouse@trcc

Project Description: **Entergy - White Bluff**

City/State Collected: Redfield, AR

Please Circle: PT MT (CT) ET

Phone: **501-847-7077**

Client Project # **1145-21-080**

Lab Project # **GBMCBAR-ENTERGYWB**

Collected by (print): JLC / BLS

Site/Facility ID # **WHITE BLUFF**

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	*Metals 250mlHDPE-HNO3	FLUORIDE 125mlHDPE-NoPres	RA-226/RA-228 1L-HDPE-Add HNO3	RA-226/RA-228 1L-HDPE-Add-HNO3	pH Remarks	Sample # (lab only)
RP-1	G	GW		10-3-24	1145	4	X	X	X	X	3.71	-01
RP-2	G	GW		10-3-24	1050	4	X	X	X	X	3.65	-02
RP-3	G	GW		10-3-24	1230	4	X	X	X	X	4.67	-03
RP-4	G	GW		10-2-24	1505	4	X	X	X	X	5.86	-04
RP-5	G	GW		10-2-24	1120	4	X	X	X	X	3.50	-05
RP-6	G	GW		10-2-24	1215	4	X	X	X	X	4.86	-06
RP-7	G	GW		10-2-24	1250	4	X	X	X	X	3.73	-07
RP-8	G	GW		10-2-24	1345	4	X	X	X	X	5.76	-08
RP-9	G	GW		10-2-24	1545	4	X	X	X	X	6.18	-09
RP-10	G	GW		10-2-24	1425	4	X	X	X	X	3.72	-10

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:*Metals = ASG,BAG,BEG,CDG,COG,CRG,HG,LIICP,MOG,PBG,SBG,SEG,TLG

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Chain of Custody Page ___ of ___

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1785836
K065

Acctnum: GBMCBAR
Template: T231256
Prelogin: P1104842
PM: 829 - Brittnie L Boyd
PB: LM 9/25/24
Shipped Via: FedEX Priority

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / (No) HCL / MeoH TBR	If preservation required by Login: Date/Time
Jacob Colbert	10-4-24	1405			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 52	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10-5-24 Time: 0900	Hold: Condition: NCF / (OK)

Company Name/Address:
Alliance Technical Group - Bryant, AR

219 Brown Lane
Little Rock, AR 72022

Billing Information:
Accounts Payable
219 Brown Ln.
Bryant, AR 72022

Pres Chk

Report to:
Jonathan Brown

Email To:
Jonathan.Brown@AllianceTG.com;Jhouse@trcc

Project Description:
Entergy - White Bluff

City/State Collected: Redfield, AR

Please Circle: PT MT (CT) ET

Phone: **501-847-7077**

Client Project #
1145-21-080

Lab Project #
GBMCBAR-ENTERGYWB

Collected by (print):
SLC / BLS

Site/Facility ID #
WHITE BLUFF

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y \

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	*Metals 250mlHDPE-HNO3	FLUORIDE 125mlHDPE-NoPres	RA-226/RA-228 1L-HDPE-Add HNO3	RA-226/RA-228 1L-HDPE-Add-HNO3	Remarks	Sample # (lab only)
		GW									pH	
		GW										
DUPLICATE (RP-2)	G	GW		10-3-24	1050	4	X	X	X	X	3.5	-11
FIELD BLANK	G	GW		10-3-24	1430	4	X	X	X	X		-12
TRIP BLANK	G	GW		10-3-24	1430	4	X	X	X	X		-13

Chain of Custody Page ___ of ___

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1765836

Table #

Acctnum: **GBMCBAR**
Template: **T231256**
Prelogin: **P1104842**
PM: **829 - Brittnie L Boyd**
PB: LL 9/25/24
Shipped Via: **FedEX Priority**

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:*Metals = ASG,BAG,BEG,CDG,COG,CRG,HG,LIICP,MOG,PBG,SBG,SEG,TLG

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
Jacob Colbert	10-4-24	1405			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10-5-24 Time: 0900	Hold: Condition: NCF / OK

LI7858836

Fed Ex tracking #	Gun ID	Temperature
4041 0487 2820	TLA9	3.1 + 0.3 = 3.4
4041 0487 2738	↓	4.6 + 0.3 = 4.9
4041 0487 2727		0.9 + 0.3 = 1.2
4041 0487 2808		1.3 + 0.3 = 1.6

Name

Date

APPENDIX D
FIELD SAMPLING FORMS

GROUNDWATER SAMPLING LOG

SITE NAME: White Bluff	SITE LOCATION:	
WELL NO: RP-1	SAMPLE ID:	DATE: 7-8-24

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	TOTAL WATER DEPTH (feet):	STATIC DEPTH TO WATER (feet): 9.17	PURGE PUMP TYPE OR BAILER:

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

PUMP OR TUBING DEPTH IN WELL (feet):	WELL SCREEN INTERVAL DEPTH: feet to feet	PURGING INITIATED AT: 1154	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	Turbidity (NTU)	COLOR / ODOR (describe)
1215					3.50	23.62	3.590	0.35	410	3.2	Clear
1220					3.51	23.86	3.590	0.37	407	1.91	"
1225					3.50	23.70	3.680	0.32	402	1.0	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1225	SAMPLING ENDED AT: 1245
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y N	TUBING Y N (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Final pH/ Temp			

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME: White Bluff	SITE LOCATION:	
WELL NO: RP-2	SAMPLE ID:	DATE: 7-8-24

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	TOTAL WATER DEPTH (feet):	STATIC DEPTH TO WATER (feet): 15.13	PURGE PUMP TYPE OR BAILER:

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

PUMP OR TUBING DEPTH IN WELL (feet):	WELL SCREEN INTERVAL DEPTH: feet to feet	PURGING INITIATED AT: 1052	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	Turbidity (NTU)	COLOR / ODOR (describe)
1100					3.76	22.70	331	2.17	491	4.9	Clear
1105					3.73	22.05	325	2.22	503	6.0	"
1110					3.71	21.76	324	2.12	513	3.2	"
1115					3.70	21.66	323	2.08	519	1.0	"
1120					3.70	21.57	320	2.13	522	0.3	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1120	SAMPLING ENDED AT: 1137
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y N	TUBING Y N (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Final pH/ Temp			

REMARKS: Horiba / Hach recalibrated prior to purging

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME: White Bluff	SITE LOCATION:	
WELL NO: RP-3	SAMPLE ID:	DATE: 7-10-24

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	TOTAL WATER DEPTH (feet):	STATIC DEPTH TO WATER (feet): 8.47	PURGE PUMP TYPE OR BAILER:

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

PUMP OR TUBING DEPTH IN WELL (feet):	WELL SCREEN INTERVAL DEPTH: feet to feet	PURGING INITIATED AT: 1001	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	Turbidity (NTU)	COLOR / ODOR (describe)
1015					4.46	25.27	2,410	0.26	172	3.8	Clear
1020					4.46	25.18	2,420	0.21	170	3.5	
1025					4.45	25.19	2,410	0.22	169	3.3	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1025	SAMPLING ENDED AT: 1039
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y N	TUBING Y N (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Final pH/ Temp	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)

REMARKS: Horiba / HACH calibrated prior to purging

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME: White Bluff	SITE LOCATION:	
WELL NO: RP - 4	SAMPLE ID:	DATE: 7-8-24

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	TOTAL WATER DEPTH (feet):	STATIC DEPTH TO WATER (feet): 8.58	PURGE PUMP TYPE OR BAILER:

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

PUMP OR TUBING DEPTH IN WELL (feet):	WELL SCREEN INTERVAL DEPTH: feet to feet	PURGING INITIATED AT: 1350	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	Turbidity (NTU)	COLOR / ODOR (describe)
1400					5.96	25.82	696	0.34	-13	24.2	Clear
1405					5.98	25.67	700	0.27	-14	24.0	}
1410					5.99	25.45	695	0.22	-13	25.4	}

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1410	SAMPLING ENDED AT: 1430
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y N	TUBING Y N (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Final pH/ Temp			

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME: White Bluffs	SITE LOCATION:	
WELL NO: RP-5	SAMPLE ID:	DATE: 7-10-24

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	TOTAL WATER DEPTH (feet):	STATIC DEPTH TO WATER (feet): 8.86	PURGE PUMP TYPE OR BAILER:

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

PUMP OR TUBING DEPTH IN WELL (feet):	WELL SCREEN INTERVAL DEPTH: feet to feet	PURGING INITIATED AT: 1317	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	Turbidity (NTU)	COLOR / ODOR (describe)
1330					3.50	24.17	639	3.36	526	1.7	Clear
1335					3.50	24.28	639	3.22	529	0.3	"
1340					3.47	23.69	639	3.30	533	1.9	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1340	SAMPLING ENDED AT: 1401
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y N	TUBING Y N (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Final pH/ Temp			

REMARKS: Duplicate taken

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME: White Bluff	SITE LOCATION:	
WELL NO: RP-6	SAMPLE ID:	DATE: 7-10-24

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	TOTAL WATER DEPTH (feet):	STATIC DEPTH TO WATER (feet): 9.71	PURGE PUMP TYPE OR BAILER:

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

PUMP OR TUBING DEPTH IN WELL (feet):	WELL SCREEN INTERVAL DEPTH: feet to feet	PURGING INITIATED AT: 1230	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP (°C)	COND. (circle units) µmhos/cm or mS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	Turbidity (NTU)	COLOR / ODOR (describe)
1240					4.00	24.70	1,940	0.78	331	3.1	Clear
1245					4.00	24.62	1,940	0.67	329	2.9	"
1250					4.00	25.00	1,940	0.49	329	3.1	"
1255					3.99	25.24	1,940	0.46	330	2.8	"
1306					3.98	24.74	1,920	0.38	329	4.2	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1360	SAMPLING ENDED AT: 1312
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y N	TUBING Y N (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Final pH/ Temp	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME: White Bluffs	SITE LOCATION:	
WELL NO: RP-7	SAMPLE ID:	DATE: 7-10-24

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	TOTAL WATER DEPTH (feet):	STATIC DEPTH TO WATER (feet): 11.09	PURGE PUMP TYPE OR BAILER:

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

PUMP OR TUBING DEPTH IN WELL (feet):	WELL SCREEN INTERVAL DEPTH: feet to feet	PURGING INITIATED AT: 1155	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	Turbidity (NTU)	COLOR / ODOR (describe)
1205					3.51	23.62	463	0.74	518	1.5	clear
1210					3.48	23.35	463	0.72	516	1.5	"
1215					3.45	23.59	462	0.68	513	2.0	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1215	SAMPLING ENDED AT: 1225
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y N	TUBING Y N (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Final pH/ Temp	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME: White Bluff	SITE LOCATION:	
WELL NO: RP-8	SAMPLE ID:	DATE: 7-10-24

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	TOTAL WATER DEPTH (feet):	STATIC DEPTH TO WATER (feet): 10.20	PURGE PUMP TYPE OR BAILER:

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

PUMP OR TUBING DEPTH IN WELL (feet):	WELL SCREEN INTERVAL DEPTH: feet to feet	PURGING INITIATED AT: 1053	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	Turbidity (NTU)	COLOR / ODOR (describe)
1105					6.95	23.58	281	3.64	10	4.8	Clear
1110					7.06	23.70	281	3.55	39	3.0	
1115					7.13	24.21	280	3.45	66	1.6	
1120					7.16	24.41	280	3.46	83	1.0	
1125					7.19	24.58	280	3.48	96	0.7	
1130					7.20	24.44	280	3.47	109	0.8	
1135					7.20	24.51	280	3.55	115	0.9	
1140					7.20	24.57	280	3.48	118	1.1	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1140	SAMPLING ENDED AT:
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y N	TUBING Y N (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Final pH/ Temp	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME: White Bluff	SITE LOCATION:	
WELL NO: RP-9	SAMPLE ID:	DATE: 7-8-24

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	TOTAL WATER DEPTH (feet):	STATIC DEPTH TO WATER (feet): 9.35	PURGE PUMP TYPE OR BAILER:

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

PUMP OR TUBING DEPTH IN WELL (feet):	WELL SCREEN INTERVAL DEPTH: feet to feet	PURGING INITIATED AT: 1439	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	Turbidity (NTU)	COLOR / ODOR (describe)
1450					6.37	26.25	179	3.01	154	29.8	clear
1455					6.40	26.01	180	3.13	182	29.7	
1500					6.41	25.96	181	3.19	193	29.7	
1505					6.42	25.89	181	3.16	203	30.8	
1510					6.42	25.90	181	3.23	211	30.2	
1515					6.42	25.92	181	3.20	216	29.7	
1520					6.42	25.86	181	3.25	221	29.4	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1520	SAMPLING ENDED AT: 1535
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y N	TUBING Y N (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Final pH/ Temp	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME: White Bluff	SITE LOCATION:	
WELL NO: RP-10	SAMPLE ID:	DATE: 7-8-24

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	TOTAL WATER DEPTH (feet):	STATIC DEPTH TO WATER (feet): 7.97	PURGE PUMP TYPE OR BAILER:

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

PUMP OR TUBING DEPTH IN WELL (feet):	WELL SCREEN INTERVAL DEPTH: feet to feet	PURGING INITIATED AT: 1258	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or mS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	Turbidity (NTU)	COLOR / ODOR (describe)
1310					3.42	25.74	662	0.28	408	9.9	Clear
1315					3.42	25.54	660	0.22	408	9.6	"
1320					3.43	25.51	655	0.21	408	9.1	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1320	SAMPLING ENDED AT: 1334
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: _____ µm
FIELD DECONTAMINATION: PUMP Y N	TUBING Y N (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Final pH/ Temp			

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME: White Bluff	SITE LOCATION: Redfield, AR	
WELL NO: RP-7	SAMPLE ID:	DATE: 10-3-24

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	TOTAL WATER DEPTH (feet):	STATIC DEPTH TO WATER (feet): 10.54	PURGE PUMP TYPE OR BAILER:

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

PUMP OR TUBING DEPTH IN WELL (feet):	WELL SCREEN INTERVAL DEPTH: feet to feet	PURGING INITIATED AT: 1118	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	Turbidity (NTU)	COLOR / ODOR (describe)
1135					3.69	20.85	5,210	0.02	735	1.9	Clear
1140					3.70	20.96	5,200	0.01	731	1.5	"
1145					3.71	20.94	5,180	0.00	729	1.5	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1145	SAMPLING ENDED AT: 1155
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y N	TUBING Y N (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Final pH/ Temp	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential**: ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME: White Bluff	SITE LOCATION: Redfield, AR	
WELL NO: RF-2	SAMPLE ID:	DATE: 10-3-24

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	TOTAL WATER DEPTH (feet):	STATIC DEPTH TO WATER (feet): 16.24	PURGE PUMP TYPE OR BAILER:

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

PUMP OR TUBING DEPTH IN WELL (feet):	WELL SCREEN INTERVAL DEPTH: feet to feet	PURGING INITIATED AT: 1019	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	Turbidity (NTU)	COLOR / ODOR (describe)
1040					3.65	17.71	296	0.07	464	3.4	Clear
1045					3.65	17.82	295	0.05	462	4.2	"
1050					3.65	17.88	295	0.33	459	4.2	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1050	SAMPLING ENDED AT: 1110
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y N	TUBING Y N (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Final pH/ Temp	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)

REMARKS: Horiba / U-22XD recalibrated prior to purging.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

- Duplicate taken

GROUNDWATER SAMPLING LOG

SITE NAME: White Bluff	SITE LOCATION: Redfield, AR	
WELL NO: RP-3	SAMPLE ID:	DATE: 10-3-24

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	TOTAL WATER DEPTH (feet):	STATIC DEPTH TO WATER (feet): 9.88	PURGE PUMP TYPE OR BAILER:

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

PUMP OR TUBING DEPTH IN WELL (feet):	WELL SCREEN INTERVAL DEPTH: feet to feet	PURGING INITIATED AT: 1203	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP (°C)	COND. (circle units) µmhos/cm or mS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	Turbidity (NTU)	COLOR / ODOR (describe)
1220					4.66	21.75	2,350	0.04	120	2.9	clear
1225					4.66	21.72	2,350	0.01	119	4.2	"
1230					4.67	22.12	2,326	0.00	118	3.6	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1230	SAMPLING ENDED AT: 1240
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y N	TUBING Y N (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Final pH/ Temp	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME: White Bluff	SITE LOCATION: Redfield, AR	
WELL NO: RD-4	SAMPLE ID:	DATE: 10-2-24

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	TOTAL WATER DEPTH (feet):	STATIC DEPTH TO WATER (feet): 10.12	PURGE PUMP TYPE OR BAILER:

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

PUMP OR TUBING DEPTH IN WELL (feet):	WELL SCREEN INTERVAL DEPTH: feet to feet	PURGING INITIATED AT: 1440	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	Turbidity (NTU)	COLOR / ODOR (describe)
1455					5.86	22.54	721	0.05	-29	383	turbid
1500					5.86	22.65	721	0.04	-28	381	"
					5.86	22.52	725	0.01	-28	376	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1505	SAMPLING ENDED AT: 1513
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y N	TUBING Y N (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Final pH/ Temp	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME: White Bluff	SITE LOCATION: Redfield, AR	
WELL NO: RP-5	SAMPLE ID:	DATE: 10-2-24

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	TOTAL WATER DEPTH (feet):	STATIC DEPTH TO WATER (feet): 10.62	PURGE PUMP TYPE OR BAILER:

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

PUMP OR TUBING DEPTH IN WELL (feet):	WELL SCREEN INTERVAL DEPTH: feet to feet	PURGING INITIATED AT: 1058	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	Turbidity (NTU)	COLOR / ODOR (describe)
1110					3.43	19.08	608	1.67	522	1.1	Clear
1115					3.48	19.33	604	1.61	524	0.8	"
1120					3.50	19.50	601	1.66	526	0.9	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1120	SAMPLING ENDED AT: 1130
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y N	TUBING Y N (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Final pH/ Temp			

REMARKS: Horiba / HACH recalibrated prior to purging.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME: White Bluff	SITE LOCATION: Redfield, AR	
WELL NO: RP-6	SAMPLE ID:	DATE: 10-2-24

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	TOTAL WATER DEPTH (feet):	STATIC DEPTH TO WATER (feet): 10.28	PURGE PUMP TYPE OR BAILER:

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

PUMP OR TUBING DEPTH IN WELL (feet):	WELL SCREEN INTERVAL DEPTH: feet to feet	PURGING INITIATED AT: 1137	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	Turbidity (NTU)	COLOR / ODOR (describe)
1145					4.29	20.51	1,840	0.02	253	2.7	clear
1150					4.45	21.00	1,820	0.01	232	3.2	
1155					4.60	21.44	1,800	0.06	218	0.7	
1200					4.70	21.97	1,790	0.01	208	0.5	
1205					4.77	22.58	1,770	0.01	201	0.2	
1210					4.82	22.84	1,760	0.00	196	0.2	
1215					4.86	23.16	1,730	0.00	191	0.1	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1215	SAMPLING ENDED AT: 1223
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y N	TUBING Y N (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Final pH/ Temp			

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME: White Bluffs	SITE LOCATION: Redfield, AR	
WELL NO: RP-7	SAMPLE ID:	DATE: 10-2-24

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	TOTAL WATER DEPTH (feet):	STATIC DEPTH TO WATER (feet): 11.65	PURGE PUMP TYPE OR BAILER:

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

PUMP OR TUBING DEPTH IN WELL (feet):	WELL SCREEN INTERVAL DEPTH: feet to feet	PURGING INITIATED AT: 1228	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or (mS/cm)	DISSOLVED OXYGEN (circle units) (mg/L) or % saturation	Redox (mV)	Turbidity (NTU)	COLOR / ODOR (describe)
1240					3.78	22.26	378	0.03	338	2.3	Clear
1245					3.76	22.36	380	0.03	340	2.4	"
1250					3.73	22.29	382	0.02	344	0.8	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1250	SAMPLING ENDED AT: 1301
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y N	TUBING Y N (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Final pH/ Temp			

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME: White Bluff	SITE LOCATION: Redfield, AR	
WELL NO: RP-8	SAMPLE ID:	DATE: 10-2-24

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	TOTAL WATER DEPTH (feet):	STATIC DEPTH TO WATER (feet): 11.69	PURGE PUMP TYPE OR BAILER:

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

PUMP OR TUBING DEPTH IN WELL (feet):	WELL SCREEN INTERVAL DEPTH: feet to feet	PURGING INITIATED AT: 1307	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	Turbidity (NTU)	COLOR / ODOR (describe)
1320					5.73	24.04	402	0.20	57	12.8	Clear
1325					5.73	24.14	400	0.07	58	9.2	"
1330					5.75	24.27	399	0.03	59	6.7	"
1335					5.74	24.24	399	0.00	59	4.7	"
1340					5.75	24.35	396	0.00	58	4.4	"
1345					5.76	24.26	395	0.00	57	3.1	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1345	SAMPLING ENDED AT: 1353
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y N	TUBING Y N (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Final pH/ Temp			

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME: White Bluff	SITE LOCATION: Redfield, AR	
WELL NO: RP-9	SAMPLE ID:	DATE: 10-2-24

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	TOTAL WATER DEPTH (feet):	STATIC DEPTH TO WATER (feet): 10.79	PURGE PUMP TYPE OR BAILER:

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

PUMP OR TUBING DEPTH IN WELL (feet):	WELL SCREEN INTERVAL DEPTH: feet to feet	PURGING INITIATED AT: 1520	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or mS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	Turbidity (NTU)	COLOR / ODOR (describe)
1535					6.12	22.85	131	0.01	125	57.4	Slightly turbid
1540					6.17	23.05	128	0.00	127	54.6	"
1545					6.18	23.10	124	0.00	132	53.6	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1545	SAMPLING ENDED AT: 1555
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y N	TUBING Y N (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Final pH/ Temp.	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

GROUNDWATER SAMPLING LOG

SITE NAME: White Bluff	SITE LOCATION: Redfield, AR	
WELL NO: RP-10	SAMPLE ID:	DATE: 10-2-24

PURGING DATA

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	TOTAL WATER DEPTH (feet):	STATIC DEPTH TO WATER (feet): 9.90	PURGE PUMP TYPE OR BAILER:

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

PUMP OR TUBING DEPTH IN WELL (feet):	WELL SCREEN INTERVAL DEPTH: feet to feet	PURGING INITIATED AT: 1400	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	Redox (mV)	Turbidity (NTU)	COLOR / ODOR (describe)
1415					3.72	27.58	466	0.47	336	4.4	Clear
1420					3.73	27.64	466	0.12	335	2.0	}
1425					3.72	28.00	466	0.02	333	2.2	}

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1425	SAMPLING ENDED AT: 1433
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE:	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y N	TUBING Y N (replaced)	DUPLICATE: Y N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	Final pH/ Temp	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

pH: ± 0.1 units **Temperature:** ± 3% **Specific Conductance:** ± 3% **Dissolved Oxygen:** (10% for values greater than 0.5 mg/L, if three dissolved oxygen values are less than 0.5 mg/L, consider the values as stabilized) **Turbidity:** (10% for values greater than 5 NTU; if three Turbidity values are less than 5 NTU, consider the values as stabilized) **Oxidation/Reduction Potential:** ± 10 millivolts

APPENDIX E
ALTERNATE SOURCE DEMONSTRATION

Alternate Source Demonstration

Entergy White Bluff Plant
Recycle Ponds A & B
Redfield, Jefferson County, Arkansas

January 2025

Prepared For

Entergy Arkansas, LLC
White Bluff Plant
1100 White Bluff Road
Redfield, Arkansas 72132

Submitted By

TRC Environmental Corporation
4545 Sherwood Common Blvd.
Building 3, Suite A
Baton Rouge, LA 70816

Jason S. House
Senior Project Manager

Nakia W. Addison, P.E.
Operations Manager

Executive Summary

Entergy Arkansas, LLC (EAL) performed the detection monitoring sampling in July and October 2024 for Recycle Ponds A & B (Ponds) pursuant to the *Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule,* 40 CFR Part 257 (CCR Rule). The Ponds constitute a coal combustion residuals (CCR) Unit (CCR Unit) under the CCR Rule. Per 40 CFR 257.95, the samples were analyzed for the Appendix IV detection monitoring parameters. Upon receipt of the laboratory analytical results, statistical analysis was performed.

EAL performed the two consecutive monitoring events in July 2024 and October 2024. Based on statistical analyses of the analytical results, potential statistically significant levels (SSLs) were initially identified for the following three Appendix IV assessment monitoring constituents based on exceedances of intrawell prediction limits:

Barium and molybdenum (RP-4);

Fluoride (RP-9); and

Fluoride (RP-10).

Groundwater Protection Standards (GWPS) for the Ponds were established per 40 CFR 257.95(2). In addition, this ASD was prepared per 40 CFR 257.95(g)(3)(ii). Based on the ASD evaluations, none of the potential statistically significant levels (SSLs) were confirmed based on the following lines of reasoning:

- The USEPA primary maximum contaminant levels (MCLs) for barium and fluoride under the Clean Water Act are significantly greater than the maximum concentrations for barium at RP-4, and fluoride observed at RP-9 and RP-10; and

- The background groundwater quality concentrations for fluoride for the Ponds (RP-1 through RP-3) are equivalent to or greater than the highest concentrations detected for RP-9 and RP-10.

The slightly elevated concentrations for barium, molybdenum and fluoride observed in the July and October 2024 monitoring events are likely related to the following causes:

- Natural variations in groundwater quality, which may be related to fluctuations in seasonal geochemistry conditions in the uppermost aquifer system associated with electrical conductivity (EC), ion strength, oxidation-reduction potential (ORP), pH, and total dissolved solids (TDS).

Based on this ASD successfully documenting that natural variation in groundwater quality is the cause for the exceedances of intrawell prediction limits, the requirements of 40 CFR Part 257.102(c) have been satisfied for closure by removal of CCR for the Ponds.

Based on this successful ASD, the original certification of closure by removal per 40 CFR 257.102(c) was updated and recertified. The updated notification of closure was certified by a Registered Arkansas P.E. and a Registered Arkansas P.G. on November 7, 2024 per 40 CFR 257.102(f)(3). The updated certified notification of closure was placed into the Plant's Facility Operating Record FOR per 40 CFR 257.105(i)(8) and was posted to the Plant's publicly accessible CCR internet site per 40 CFR 257.107(i)(8).

Table of Contents

Section 1
Introduction

1.1 Background

Entergy Arkansas, LLC (EAL) owns and operates the Entergy White Bluff Steam Electric Station (Plant), a coal-fired power plant, to generate electricity. The Plant is located at 1100 White Bluff Road in Redfield, Jefferson County, Arkansas (**Figure 1**). The Plant is located at approximate latitude 34.421658 N, longitude -92.139455 W.

The Plant has been generating electricity since 1981. As a byproduct of electrical generation, coal combustion residuals (CCRs) historically generated at the Plant have been managed at the Plant at the:

- On-Site Coal Ash Disposal Landfill (CADL); and
- Water Recycle Ponds – Pond A and Pond B (Ponds).

The *Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule,* 40 CFR Part 257 (CCR Rule) became effective on October 19, 2015, and established national criteria for the management of CCR at electrical generating facilities. EAL initially identified the CADL as a CCR Unit when the CCR Rule became effective on October 19, 2015.

The Ponds encompass approximately 13 acres and are operated as part of the Plant's process water system for bottom ash transport. The Ponds provided intermediate storage of waters used in the transport of CCR generated from the combustion of coal at the Plant. After CCR was identified in the Ponds in 2018, EAL determined the Ponds were also a CCR Unit under the CCR Rule. EAL designed and installed a groundwater monitoring system consisting of 10 wells per 40 CFR Part 257.91. Three of the wells were installed as background wells and the other seven wells were installed around the immediate perimeter of the Ponds. The groundwater monitoring system and statistical methods were certified by a Registered Arkansas Professional Engineer (P.E.). EAL implemented a Detection Monitoring Program per 40 CFR Part 257.94.

A quarterly Detection Monitoring Program for the Appendix III and Appendix IV CCR constituents for the Ponds was implemented in 2018 per 40 CFR Part 257.94. After completion of eight background monitoring events, a semi-annual Detection Monitoring Program was implemented in 2020. Statistically significant increases (SSIs) of Appendix III detection monitoring constituents were never documented; therefore, assessment monitoring was never initiated for the Ponds and groundwater protection standards (GWPS) were not established pursuant to 40 CFR 257.95.

Pond A, Pond B, and the locations of the 10 wells making up the certified groundwater monitoring system are shown on (**Figure 2)**.

1.1.1 Closure By Removal Certification (October 2, 2023)

After installation of a dry bottom ash handling system at the Plant, EAL commenced closure of Pond A on October 5, 2018, and Pond B on February 26, 2021, per 40 CFR Part 257.102(c). Closure consisted of removal of CCR and decontamination of affected soils (beyond visible CCR) in accordance with the following:

- 40 CFR 257.102(c) of the CCR Rule;
- *Amendment No. 1* - Closure Plan for Water Recycle Ponds (August 2020) as approved by the Arkansas Energy and Environment Department, Division of Environmental Quality (DEQ) on December 11, 2020; and
- National Pollutant Discharge Elimination System (NPDES) Permit Number AR0037451.

All CCR was removed from the Ponds and disposed in the on-site CADL. The on-Site CADL is permitted under DEQ Permit No. 0199-S3N-R3. Pursuant to Amendment No. 1 - Closure Plan for Water Recycle Ponds, CCR removal was confirmed through visual observations of both Ponds.

Per Amendment No. 1 - Closure Plan for Water Recycle Ponds, both Ponds were decontaminated through excavation of a minimum of 6 inches of the underlying pond liner material (beyond visible CCR) to ensure removal of potential CCR-affected materials. This material was also disposed in the on-Site CADL. Pursuant to Amendment No. 1 - Closure Plan for Water Recycle Ponds, CCR decontamination was confirmed through visual observations of both Ponds after excavation.

After closure was successfully completed, the notification of closure was prepared per 40 CFR 257.102(h). The notification of closure was certified by a Registered Arkansas P.E. and a

Registered Arkansas Professional Geologist (P.G.) on October 2, 2023, per 40 CFR 257.102(f)(3). The certified notification of closure was placed into the Plants's facility operating record (FOR) per 40 CFR 257.105(i)(8) and was posted to the Plant's publicly accessible CCR internet site per 40 CFR 257.107(i)(8).

1.1.2 Closure By Removal Recertification (November 7, 2024)

The *Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals From Electric Utilities; Legacy CCR Surface Impoundments* was published by the USEPA on May 8, 2024 (Legacy Impoundment/CCRMU Rule). Based on the revised requirements for the closure by removal of CCR provided in the Legacy Impoundment/CCRMU Rule, EAL determined it would perform additional activities to update the original certification for the closure by removal of CCR for the Ponds by the effective date of the Legacy Impoundment/CCRMU Rule on November 8, 2024. The following additional activities were performed:

- Perform two additional quarterly groundwater monitoring events at the Ponds during the third and fourth quarters 2024 and analyze the samples for the Appendix IV assessment monitoring constituents;
- Establish GWPS;
- Perform statistical analyses of the Appendix IV assessment monitoring analytical data, identify potential statistically significant levels (SSLs), and prepare an Alternative Source Demonstration (ASD) if appropriate;
- Document that the Appendix IV assessment monitoring groundwater analytical results for the consecutive monitoring events during the third and fourth quarters 2024 are less than GWPS; and
- Prepare an updated certification for the closure by removal of CCR for the Ponds.

EAL performed the two consecutive monitoring events in July 2024 and October 2024. Based on statistical analyses of the analytical results, potential SSLs were initially identified for the following four Appendix IV assessment monitoring constituents based on exceedances of intrawell prediction limits:

- Barium and Molybdenum (RP-4);
- Floride (RP-9); and
- Floride (RP-10).

GWPS were established per 40 CFR 257.95(2). In addition, this ASD was prepared per 40 CFR 257.95(g)(3)(ii), which demonstrated that natural variation in groundwater quality was the source for the exceedances observed of the intrawell prediction limits. Based on the ASD evaluations, none of the potential SSLs were confirmed based on the following lines of reasoning:

- The USEPA primary maximum contaminant levels (MCLs) for barium under the Clean Water Act are significantly greater than the maximum concentrations for barium observed at RP-4; and
- The USEPA primary maximum contaminant levels (MCLs) for fluoride under the Clean Water Act are significantly greater than the maximum concentrations for fluoride observed at RP-9 and RP-10.

The slightly elevated concentrations for barium, molybdenum, and fluoride observed in the July and October 2024 monitoring events are likely related to the following causes:

- Natural variations in groundwater quality, which may be related to fluctuations in seasonal geochemistry conditions in the uppermost aquifer system associated with electrical conductivity (EC), ion strength, oxidation-reduction potential (ORP), pH, and total dissolved solids (TDS).

Based on this ASD successfully documenting that natural variation in groundwater quality is the cause for the exceedances of intrawell prediction limits, the requirements of 40 CFR Part 257.102(c) have been satisfied for closure by removal of CCR for the Ponds.

1.2 Groundwater Monitoring and Statistical Analysis

Based on this successful ASD, the original certification of closure by removal per 40 CFR 257.102(c) was updated and recertified. The updated notification of closure was certified by a Registered Arkansas P.E. and a Registered Arkansas P.G. on November 7, 2024, as required by 40 CFR 257.102(f)(3). The updated certified notification of closure was placed into the Plant's FOR per 40 CFR 257.105(i)(8) and was posted to the Plant's publicly accessible CCR internet site per 40 CFR 257.107(i)(8).

1.2.1 Groundwater Monitoring System

In accordance with the requirements of 40 CFR 257.91, EAL installed a groundwater monitoring system at the Ponds and collected groundwater samples from the CCR groundwater monitoring

system wells for laboratory analysis for both Appendix III and Appendix IV CCR constituents and performed statistical analysis of the analytical results. The groundwater monitoring network consists of 10 wells installed in the underlying stratigraphic unit (Stratum III). Three of the wells are background wells for the Ponds (RP-1 through RP-3), and the remaining seven wells are located around the immediate perimeter of the Ponds (RP-4 through RP-10).

Pursuant to 40 CFR 257.91(f), the groundwater monitoring system was certified by a Registered Arkansas P.E. that stated that the network was designed and constructed to meet the requirements of 40 CFR 257.91 (see Groundwater Monitoring System Certification, (TRC, 2019b)).

A groundwater sampling and analysis program including selection of statistical procedures to evaluate groundwater analytical data was prepared per the CCR Rule (see Groundwater Sampling and Analysis Plan (FTN, 2019)). Eight quarterly background CCR detection monitoring events were initially performed from July 2018 through June 2020 in accordance with 40 CFR 257.93(d) and 257.94(b). The eight quarterly detection monitoring background samples were analyzed for the Appendix III to Part 257 – Constituents for Detection Monitoring and the Appendix IV to Part 257 – Constituents for Assessment Monitoring per 40 CFR 257.94(b). After completion of the initial eight background monitoring events and establishment of background groundwater quality, EAL implemented a semi-annual Detection Monitoring Program with laboratory analysis for the Appendix III to Part 257 – Constituents for Detection Monitoring per the requirements of 40 CFR 257.94.

1.2.2 Statistical Analytical Method

Statistical analysis of the semi-annual detection monitoring analytical data was performed per 40 CFR Part 297.93(f). As described in the Statistical Methods Certification (TRC, October 16, 2017), intrawell statistical evaluation was performed due to the low groundwater velocities and seasonal variability in groundwater flow direction for the uppermost aquifer system. As described in the certification:

- "Intrawell statistical evaluations are within well comparisons. In the case of intrawell prediction limits, historical data from within a given well for a given parameter will be used to construct a limit. Compliance points will be compared to the limit to determine whether a change is occurring on a per-well/per-parameter basis. If the assumption of normality is not rejected for the background data set, then a parametric prediction limit will be calculated. If the assumption of normality is rejected for the background data set, then a non-parametric prediction limit will be calculated, in which case, the prediction limit will be based on the

highest value in the background data set. For pH, both upper and lower prediction limits will be used for intrawell evaluations."

The final detection monitoring event was performed during November 2023. The statistical analyses completed for the first and second semi-annual 2023 sampling events analytical data did not identify SSIs, and the Ponds remained in the Detection Monitoring Program.

Section 2
Objectives and Purpose

Pursuant to 40 CFR 257.95(g)(3)(ii), EAL may demonstrate that a source other than the Ponds caused the potential SSLs or that the SSLs resulted from errors in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Therefore, EAL elected to perform an ASD to evaluate the potential SSLs identified for the third and fourth quarters 2024 Appendix IV assessment monitoring constituents. The objectives and purpose of this ASD are:

- Develop GWPS per 40 CFR 257.95(h), based on the Appendix IV assessment monitoring constituent's analytical data for the third and fourth quarters 2024.

- Using the certified statistical method, identify potential SSLs for the analytical data per 40 CFR 257.93(f);

- Perform an alternative source demonstration (ASD) per 40 CFR 257.95(g)(3)(ii); and

- Prepare written documentation of the successful ASD for the potential SSLs identified for the third and fourth quarters 2024 groundwater monitoring events, per 40 CFR 257.95(g)(3)(ii).

Section 3
Hydrogeology and Background Groundwater Quality

3.1 Site Hydrogeology

Historical subsurface investigations have identified the following three stratigraphic horizons of the Jackson Group (Kresse, et. al., 2014) and their associated hydrogeology for the CCR Unit:

- **Stratum II** is generally composed of stiff to very stiff fat and lean clay that ranges from 4 feet (ft) to 28 ft in thickness with elevations from 280 feet above mean sea level (ft amsl) to 261 ft amsl. Flex-wall permeability testing performed on the on-site clay soils shows hydraulic conductivities ranging from 4.7×10^{-6} to 1.4×10^{-8} centimeters per second (cm/s) (FTN 2014).

- **Stratum III** is heterogeneous in composition and generally exhibits an increase in coarse fraction compared to Stratum II. Stratum III is composed of medium dense to dense clays sand with alternating layers of silty sand, sand, and/or clay. Stratum III ranges in thickness from 9 ft to 30 ft with typical elevations ranging from 272 to 252 feet below ground surface (ft bgs). In-situ hydraulic conductivities in Stratum III range from 2.53×10^{-4} cm/s to 4.18×10^{-7} cm/s (TRC, 2018).

- **Lower Confining Unit below Stratum III** is a very dark grey, fat clay that is highly laminated with light grey silt and very fine-grained sand. In-situ permeability testing of this unit determined a vertical hydraulic conductivity of 3.7×10^{-8} cm/s. This Lower Confining Unit was encountered during aquifer characterization efforts around the recycle ponds conducted in 2018.

3.2 Background Groundwater Quality

Background groundwater quality for the Ponds for the Appendix IV assessment monitoring constituents is monitored by background wells (RP-1, RP-2 and PR-3). A measure of background groundwater quality for the Ponds is represented by a comparison of the laboratory analytical results for the Appendix IV assessment monitoring constituents that have primary maximum contaminant levels (MCLs) established by the United States Environmental Protection Agency

(USEPA) under the Clean Water Act. USEPA has established primary MCLs for 12 of the 15 Appendix IV assessment monitoring constituents.

A comparison of the Appendix IV laboratory analytical results for the 12 Appendix IV constituents that have primary MCLs for the third and fourth quarters of 2024 to the USEPA primary MCLs is provided in the table below.

Background Groundwater Water Quality

Constituent	Concentration Range		USEPA Primary MCL
	Low	High	
Antimony (mg/L)			0.006
Arsenic (mg/L)			0.010
Barium (mg/L)	0.0138	0.0322	2
Beryllium (mg/L)			0.004
Cadmium (mg/L)			0.005
Chromium (mg/L)			0.1
Fluoride (mg/L)	<0.150	2.06	4
Lead (mg/L)			0.010
Mercury (mg/L)			0.002
Selenium (mg/L)			0.05
Thallium (mg/L)			0.002
Radium 226/228 (pCi/L)			5

It should be noted that the USEPA has not established primary drinking water MCLs for cobalt, lithium, and molybdenum; therefore, these Appendix IV CCR constituents were not included in the table above.

As shown in the table above, the natural range of groundwater quality within the background wells is consistently less than the USEPA primary drinking water MCLs established by the USEPA under the Clean Water Act.

In addition to the primary MCLs, USEPA has established a secondary MCL under the Clean Water Act for pH of 6.5 to 8.5 standard units (s.u.). pH measurements for the background wells ranged from 3.50 to 4.70 s.u. for the third and fourth quarter 2024 monitoring events, which is slightly less than the secondary MCL range. Finally, it should be noted that USEPA has established both primary and secondary MCLs of 4.0 mg/L for fluoride.

Section 4
Alternate Source Demonstration

EAL performed two groundwater monitoring events in July 2024 and October 2024 (third and fourth quarters 2024) for the Ponds and the samples were analyzed for the Appendix IV assessment monitoring constituents. Based on statistical evaluation of the analytical results, potential SSLs were identified for the following three Appendix IV assessment monitoring constituents based on exceedances of intrawell prediction limits:

- Barium and molybdenum (RP-4);
- Fluoride (RP-9); and
- Fluoride (RP-10).

The laboratory analytical results for both monitoring events and intrawell prediction limits for each of the potential SSLs are summarized in the table below.

Table 1 SSLs – Groundwater Monitoring Event 3Q24 and 4Q24

Well	Parameter	3Q24 Value (mg/L)	4Q24 Value (mg/L)	Intrawell Prediction Limit (mg/L)	Confirmed SSL? (Yes/No)
RP-4	Barium	0.165	0.192	0.1344	No
RP-4	Molybdenum	0.0133	0.00969	0.00517	No
RP-9	Fluoride	<0.5	0.237	0.1528	No
RP-10	Fluoride	<0.5	0.452	0.3856	No

Likely causes for the potential SSLs and associated lines of reasoning demonstrating that the four SSLs were not caused by a release of CCR constituents from the Ponds to groundwater are provided in the subsections below.

4.1 Barium at RP-4

Barium at RP-4 was detected at a concentration of 0.165 mg/L in the July 2024 sample, and 0.192 mg/L in the October 2024 sample. Both analytical results exceeded the intrawell prediction limit for barium at RP-4 of 0.1344 mg/L. These slightly elevated concentrations are not SSLs based on the following reason:

- The USEPA primary MCL for barium in drinking water is 2 mg/L; therefore, the concentrations for barium at RP-4 were significantly less than USEPA primary MCL.

Therefore, based on the reason identified above, the potential SSL for barium at RP-4 was not confirmed. The slightly elevated concentrations for barium for RP-4 observed in July and October 2024 are likely related to the following causes:

- Natural variation in groundwater quality.

- Seasonal geochemistry condition changes in groundwater. pH and EC could affect barium concentrations in groundwater. The acidic condition favors the dissolution of calcium from soil and mineral surfaces to water phase. The relatively high EC in groundwater (high chloride concentration and high TDS) could increase the barium concentration. The seasonal increasing of barium could be a result of the natural geochemistry conditions with low pH and high EC.

4.2 Molybdenum at RP-4

Molybdenum at RP-4 was detected at a concentration of 0.0133 mg/L in the July 2024 sample, and 0.00969 mg/L in the October 2024 sample, while the intrawell prediction limit for molybdenum at RP-4 was 0.00517 mg/L based on the background data collected from 2018 and 2020. USEPA determined that the "Lifetime Advisory Level" for molybdenum is 0.04 mg/L in drinking water, and the World Health Organization (WHO) recommended molybdenum concentration in drinking water should not exceed 0.07 mg/L. Since the molybdenum concentration at RP-4 didn't exceed 0.04 mg/L, the molybdenum SSL at RP-4 was not confirmed. The potential reasons include:

- Natural variation in groundwater quality.

- Molybdenum is naturally present in certain geological formations and rocks as a native element and bound to other elements in minerals. Seasonal geochemistry condition changes

in groundwater such as low pH groundwater, can enhance the solubility of molybdenum-baring minerals in the surrounding rocks and soils. This can lead to increased concentrations of molybdenum in groundwater.

4.3 Fluoride at RP-9

Fluoride at RP-9 was detected at a concentration of 0.237 mg/L in the October 2024 sample, while the intrawell prediction limit for fluoride at RP-9 was 0.1528 mg/L based on the background data collected from 2018 and 2020. These slightly elevated concentrations are not SSLs based on the following lines of reasoning:

- The USEPA primary MCL for fluoride in drinking water is 4 mg/L; therefore, the concentrations for fluoride at RP-9 were significantly less than USEPA primary MCL.

- The background concentrations for fluoride for the Ponds (RP-1 through RP-3) range from <0.15 to 2.06 mg/L. The highest background fluoride concentration of 2.06 mg/L is greater than the highest concentration for fluoride of 0.237 mg/L for RP-9; therefore, the highest concentrations for RP-9 are less than the highest background concentrations identified for the Ponds.

Therefore, the potential SSL for fluoride at RP-9 was not confirmed. The slightly elevated concentrations of fluoride observed in July and October 2024 could likely be related to the following causes:

- Natural variation in groundwater quality.

- Geochemistry condition changes in groundwater. Fluoride has positive correlation with both bicarbonate and sodium, and an inverse relation with calcium. A relatively low calcium concentration (10.9 mg/L) was detected in November 2023. The geochemistry condition could be one of the potential factors resulting in the fluoride exceedance.

4.4 Fluoride at RP-10

Fluoride at RP-10 was detected at a concentration of 0.452 mg/L in the October 2024 sample. The intrawell prediction limit for fluoride at RP-10 was 0.3856 mg/L based on the background data collected from 2018 and 2020. These slightly elevated concentrations are not SSLs based on the following lines of reasoning:

- The USEPA primary MCL for fluoride in drinking water is 4 mg/L; therefore, the concentrations for fluoride at RP-9 were significantly less than USEPA primary MCL;

- The background concentrations for fluoride for the Ponds (RP-1 through RP-3) range from <0.15 to 2.06 mg/L. The highest background fluoride concentration of 2.06 mg/L is greater than the highest concentration for fluoride of 0.452 mg/L for RP-10; therefore, the highest concentrations for RP-10 are less than the highest background concentrations identified for the Ponds.

Therefore, the potential SSL for fluoride at RP-10 was not confirmed. The slightly elevated concentrations of fluoride observed in July and October 2024 could likely be related to the following causes:

- Natural variation in groundwater quality.

- Geochemistry condition changes in groundwater. Fluoride has positive correlation with both bicarbonate and sodium, and an inverse relation with calcium. The pH at RP-10 was around 3.72 and a relatively low calcium concentration (18.7 mg/L) was detected in November 2023. Therefore, the geochemistry condition is one of the potential factors resulting in the fluoride exceedance.

- The fluoride exceedance could be related to the elevated TDS from the minerals and soils in the area of Pond B (both RP-8 and RP-10), which can be caused by geochemistry condition changes and/or the closure activities during 2021.

Section 5
Conclusions

The information provided in this ASD was prepared in accordance with 40 CFR 257.95(g)(3)(ii) of the CCR Rule. None of the potential SSLs were confirmed for the two consecutive monitoring events (third and fourth quarters 2024), based on the following lines of reasoning:

- The USEPA primary MCLs for barium and fluoride under the Clean Water Act are significantly greater than the maximum concentrations for barium and fluoride observed at RP-4, RP-9 and RP-10;

- USEPA determined that the "Lifetime Advisory Level" for molybdenum is 0.04 mg/L in drinking water, and the WHO recommended molybdenum concentration in drinking water should not exceed 0.07 mg/L. These standards are significantly greater than the maximum concentration for molybdenum at RP-4; and

- The background groundwater quality concentrations for fluoride for the Ponds (RP-1 through RP-3) are greater than the highest concentrations detected for RP-9 and RP-10.

The slightly elevated concentrations for barium, molybdenum and fluoride observed in July and October 2024 are likely related to the following causes:

- Natural variations in groundwater quality, which may be related to fluctuations in seasonal geochemistry conditions in the uppermost aquifer system associated with EC, ion strength, ORP, pH, and TDS.

Based on this ASD successfully documenting that natural variation in groundwater quality is the cause for the exceedances of intrawell prediction limits, the requirements of 40 CFR Part 257.102(c) have been satisfied for closure by removal of CCR for the Ponds.

Based on this successful ASD, the original certification of closure by removal per 40 CFR 257.102(c) was updated and recertified. The updated notification of closure was certified by a Registered Arkansas P.E. and a Registered Arkansas P.G. on November 7, 2024, per 40 CFR 257.102(f)(3). The updated certified notification of closure was placed into the Station's FOR per

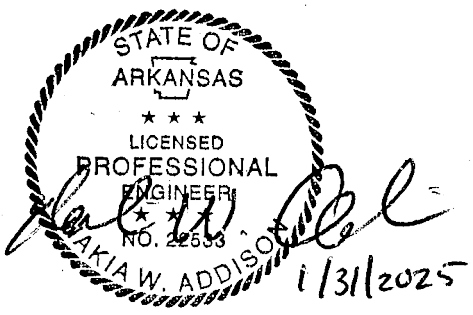
40 CFR 257.105(i)(8) and was posted to the Plant's publicly accessible CCR internet site per 40 CFR 257.107(i)(8).

Section 6
Certification

I hereby certify that the alternative source demonstration presented within this document for the Entergy White Bluff Plant Water Recycle Ponds CCR Unit has been prepared to meet the requirements of Title 40 CFR §257.94(e) 2 of the Federal CCR Rule. This document is accurate and has been prepared in accordance with good engineering practices, including the consideration of applicable industry standards, and with the requirements of Title 40 CFR §257.94(e) 2.

Name: Nakia W. Addison P.E. **Expiration Date:** 12/31/2025

Company: TRC Environmental Corporation **Date:** 1/31/2025



Section 7
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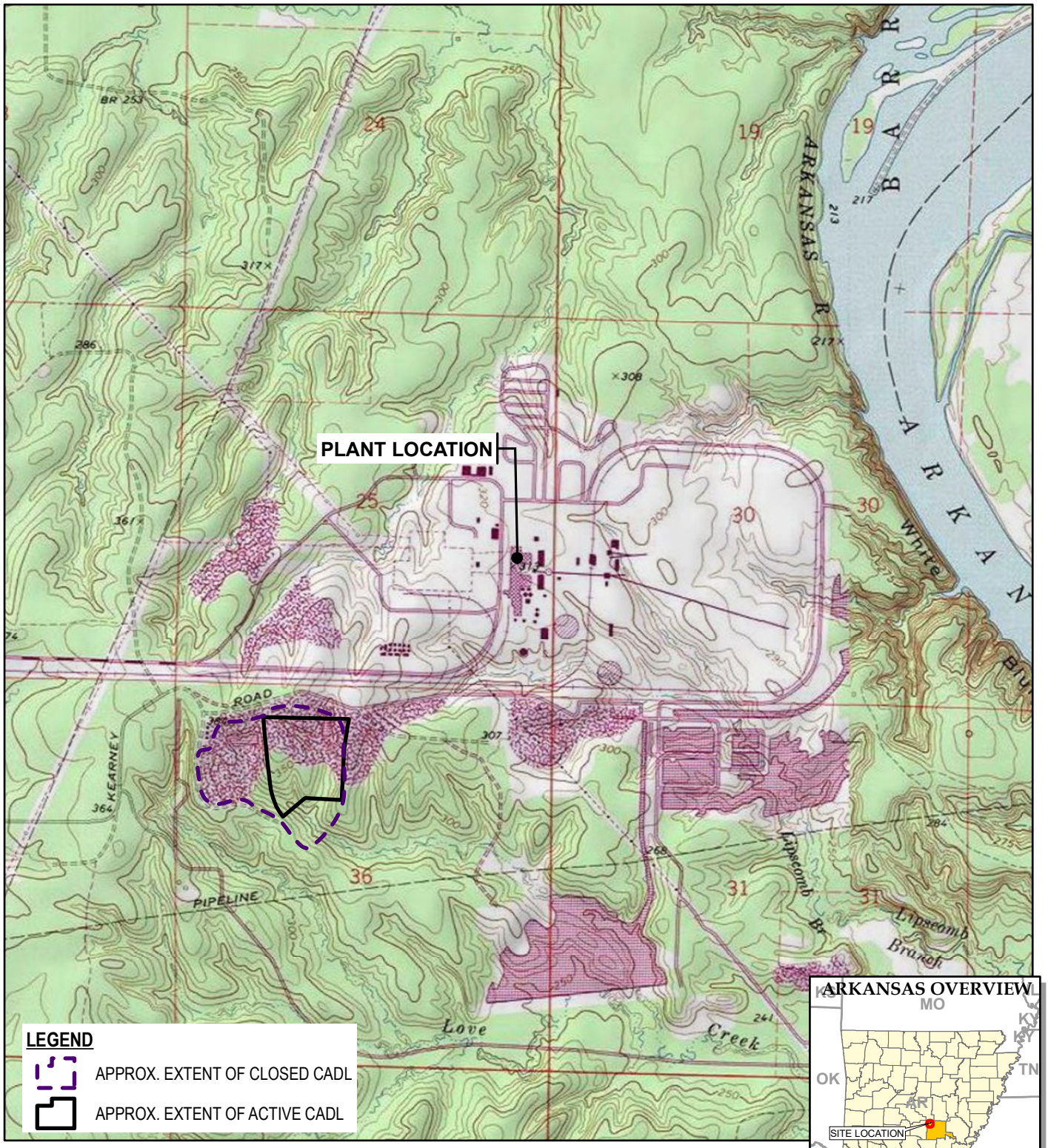

BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES.

N

1 " = 2,000 '
1:24,000

0 2,000 4,000 FEET

TRC
Two United Plaza
8550 United Plaza Blvd., Suite 502
Baton Rouge, LA
Phone: 225.270.6321
TRC - GIS

PROJECT:

ENTERGY WHITE BLUFF PLANT
1100 WHITE BLUFF ROAD
REDFIELD, ARKANSAS

TITLE:

ENTERGY WHITE BLUFF PLANT LOCATION MAP

DRAWN BY:	S. MAJOR
CHECKED BY:	J. HOUSE
APPROVED BY:	Z. SABATKA
DATE:	DECEMBER 2021
PROJ. NO.:	402355
FILE:	341458-001slm1.mxd

FIGURE 1

S:\1-PROJECTS\Entergy\MadisonLegacyProjects\Arkansas\2018_302967\341458-001slm1.mxd -- Saved By: LBOCHKIS on 12/8/2021, 13:02:15 PM

LEGEND

- RECYCLING POND WELLS
- RECYCLING POND BOUNDARY

NOTES

1. BASE MAP IMAGERY FROM GOOGLE EARTH PRO, 2018 .

0 300 600 Feet

1 " = 300 '

1:3,600

PROJECT:

ENTERGY WHITE BLUFF PLANT
1100 WHITE BLUFF ROAD
REDFIELD, ARKANSAS

TITLE:

RECYCLING POND WELL LOCATIONS

DRAWN BY:	S. MAJOR	PROJ. NO.:	431458
CHECKED BY:	L. BURRIS		
APPROVED BY:	J. HOUSE		**FIGURE 2**
DATE:	JANUARY 2022		

TRC

Two United Plaza
8550 United Plaza Blvd., Suite 502
Baton Rouge, LA
Phone: 225.216.7483

FILE NO.: 431458-001.mxd

Plot Date: 1/25/2021, 15:44:54 PM by SMAJOR -- LAYOUT: ANSI B(11"x17")
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Coordinate System: NAD 1983 StatePlane Arkansas South FIPS 0302 Feet (Foot US)
Map Rotation: 0
TRC - GIS