

REPORT

2021 Annual Groundwater Monitoring & Corrective Action Report

RD Morrow Generating Station, Purvis, Lamar County, Mississippi, USA

Submitted to:



Cooperative Energy 7037 US Hwy 49, Hattiesburg, MS 39402

Submitted by:

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Golder Project No. 21453914

January 26, 2022

Executive Summary

This report presents the 2021 Annual Groundwater Monitoring & Corrective Action Report, R.D. Morrow, Sr. Generating Station, Purvis, Lamar County, Mississippi. Groundwater monitoring and reporting for the Morrow facility is performed in accordance with the United States Environmental Protection Agency (US EPA) Coal Combustion Residual (CCR) Rule published in the Code of Federal Regulations Title 40 Part 257 (40 CFR Part 257, Subpart D) dated April 17, 2015, 40 CFR § 257.50 through § 257.107. As required in 40 CFR § 257.90(e), this Annual Report describes the status of the groundwater monitoring program, summarizes key actions completed, describes any problems encountered, discusses actions to resolve the problems, and presents key activities for the upcoming year.

The R.D. Morrow, Sr. Generating Station (Morrow or the Plant) has one CCR unit:

- Landfill Unit The CCR landfill unit has continued Assessment Monitoring in accordance with § 257.95, filing the Notice of Establishment of Assessment Monitoring Program on May 16, 2018. Due to the constituent concentrations exceeding the statistical limits, as described more fully within this report, the site began the annual reporting period in assessment monitoring and will continue with assessment monitoring.
- Former Surface Impoundment The CCR Surface Impoundment Unit began the annual reporting period in detection monitoring. Cooperative Energy closed the surface impoundment by removal in 2021, as discussed in more detail herein. The former surface impoundment was in detection monitoring at the time of closure.

2021 Groundwater Monitoring Activities for the Landfill Unit

- The Assessment of Corrective Measures (ACM) began on May 15, 2019. The corrective measures assessment was ongoing in 2021. Semi-annual remedy progress reports in the spring and fall of 2021 discuss these efforts.
- Groundwater monitoring sampling events for the CCR landfill unit were conducted in February (Annual), and in April and September 2021 (Semi-annual). Groundwater samples were collected and analyzed for both Appendix III and Appendix IV constituents from each of the monitoring wells.
- Pursuant to 40 CFR § 257.90 (e)(6)(iii)-(iv), the following table presents the Appendix III and IV constituents with SSIs or SSLs, respectively, for the Landfill unit.



Statistically Significant Increases (SSIs)							
Appendix III Constituent	April 2021	September 2021					
Boron	MW-3, MW-4, MW-5	MW-3, MW-4, MW-5					
Calcium	MW-3, MW-4, MW-5	MW-3, MW-4, MW-5					
рН	MW-3, MW-5	MW-3, MW-5					
Sulfate	MW-3, MW-4, MW-5	MW-3, MW-4, MW-5					
TDS	MW-3, MW-4, MW-5	MW-3, MW-4, MW-5					
Statistically Significant Levels (SSLs)							
Appendix IV Constituent	April 2021	September 2021					
Lithium	MW-5	MW-5					
Molybdenum	MW-5	MW-5					

Table of Contents

EXE	CUTIV	E SUMMARY	.1
CER	TIFICA	TION	/I
1.0	INTRO	DDUCTION	1
	1.1	Purpose	1
	1.2	Site Description and Background	1
	1.3	Landfill Unit Groundwater Monitoring Well Network	2
2.0	LAND	FILL UNIT GROUNDWATER MONITORING ACTIVITIES	2
	2.1	Landfill CCR Unit Assessment Monitoring	2
	2.2	Groundwater Elevation Measurement	2
	2.3	Groundwater Sampling and Laboratory Analysis	2
3.0	COMF	PARATIVE STATISTICAL ANALYSES	3
	3.1.1	Landfill Unit Statistical Analyses	3
4.0	ASSE	SSMENT OF CORRECTIVE MEASURES	4
5.0	REME	DY SELECTION	4
6.0	PROG	RAM TRANSITIONS	4
7.0	PROB	BLEMS ENCOUNTERED AND ACTIONS TO RESOLVE IN 2021	4
8.0	CONC	CLUSIONS & FUTURE ACTIONS	5
9.0	REFE	RENCES	5

Table of Contents - continued

FIGURES

- Figure 1: Site Location Map
- Figure 2: Well Location Map
- Figure 3A: First Semi-Annual 2021 Potentiometric Surface Elevation Contour Map (April 27, 2021)
- Figure 3B: Second Semi-Annual 2021 Potentiometric Surface Elevation Contour Map (September 14, 2021)

TABLES

- Table 1: Analytical Data Summary CCR Landfill (February 2021)
- Table 2:
 Analytical Data Summary CCR Landfill (April 2021)
- Table 3:
 Analytical Data Summary CCR Landfill (September 2021)



iv

v

Certification

This 2021 Annual Groundwater Monitoring & Corrective Action Report, R.D. Morrow, Sr. Generating Station, Purvis, Lamar County, Mississippi, USA has been prepared to comply with the United States Environmental Protection Agency (EPA) Coal Combustion Residuals (CCR) rule (40 CFR Part 257 Subpart D, published in 80 FR 21302-21501 (April 17, 2015) under the direction of a licensed professional engineer, with Golder Associates Inc.

Golder Associates USA Inc.

Dam L Proll

Dawn L. Prell, CPG Senior Hydrogeologist

I hereby certify that this 2021 Annual Groundwater Monitoring & Corrective Action Report, R.D. Morrow, Sr. Generating Station, located at 304 Old Okahola School Road, Purvis, Lamar County, MS 39475 has been prepared to meet the requirements of 40 CFR § 257.90(e).



Jeffrey R. Piaskowski, PE Mississippi Registered Professional Engineer No.30525



1.0 INTRODUCTION

This 2021 Annual Groundwater Monitoring and Corrective Action Report (Annual Report) has been prepared by Golder Associates Inc. (Golder) for the RD Morrow Generating Station (Morrow or Site) operated by Cooperative Energy.

1.1 Purpose

The United States Environmental Protection Agency (US EPA) Coal Combustion Residual (CCR) Rule was published in the Code of Federal Regulations Title 40 Part 257 (40 CFR Part 257, Subpart D) on April 17, 2015. The Rule identifies an effective date of October 19, 2015. The CCR Rule regulates CCRs as non-hazardous waste under Subtitle D of the Resource Conservation and Recovery Act (RCRA) and applies to new and existing landfills and surface impoundments.

As required in 40 CFR § 257.90(e), this Annual Report describes the status of the groundwater monitoring program, summarizes key actions completed, describes any problems encountered, discusses actions to resolve the problems, and presents project key activities for the upcoming year. Groundwater monitoring and reporting for the Morrow facility are performed in accordance with the requirements of 40 CFR § 257.90 through § 257.98. This report documents the activities completed during the 2021 calendar year.

1.2 Site Description and Background

The Morrow facility is located in the community of Okahola, a rural area of Lamar County, approximately 4.5 miles north of the City of Purvis and 8 miles southwest of Hattiesburg. Old Okahola School Road bisects the property into a northern and southern parcel. The location of the Site property and surrounding area are shown on Figure 1, Site Location Map.

CCR materials at the Morrow facility were historically managed on-site in two CCR Units, a former surface impoundment closed by removal and a landfill. Both were subject to compliance with the CCR Rule.

The generating plant and former CCR surface impoundment unit are located on the north parcel while the landfill unit is within the south parcel, as shown in Figure 2, Well Location Map. The current and former Morrow CCR Units include:

- Landfill The CCR landfill unit initiated Assessment Monitoring in accordance with § 257.95 and Assessment of Corrective Measures in accordance with § 257.96. The remedy selection evaluation was ongoing during 2021. Pursuant to 40 CFR § 257.102(h), Cooperative Energy filed a Notification of Completion for the CCR Landfill Unit, dated October 12, 2021, certified by a professional engineer licensed in the state of Mississippi in accordance with the Unit's Closure Plan and pursuant to 40 CFR § 257.102.
- Former Surface Impoundment Pursuant to 40 CFR 257.102(h), Cooperative Energy filed a Notification of Completion for the CCR Surface Impoundment Unit, dated March 23, 2021. Pursuant to 40 CFR § 257.102, a qualified professional engineer certified completion of closure by removal. This Unit has been in detection monitoring since before the time of closure and in accordance with the requirements of 40 CFR § 257.102, no further monitoring is required. Additionally, in accordance with the requirements of 40 CFR § 257.102, no further unit is not subject to post-closure care. The former impoundment network is no longer monitored as the Unit has been certified closed by removal. The wells will be decommissioned and abandoned in 2022.

1.3 Landfill Unit Groundwater Monitoring Well Network

The groundwater monitoring network for the CCR landfill unit consists of five (5) detection monitoring wells and one (1) assessment monitoring well, as shown on Figure 2. CCR monitoring wells are included in the monitoring network screened within the reworked Citronelle sequence to monitor the Citronelle aquifer underlying the landfill. The network for the events covered by this Annual Report include:

- One upgradient detection monitoring well: MW-2
- Four downgradient detection monitoring wells: MW-3, MW-4, MW-5, and MW-6
- One assessment monitoring well: MW-10.
- There were no changes to the landfill certified detection groundwater monitoring network for the 2021 sampling events.
- Additional monitoring well-related activities included a visual inspection of well conditions for the landfill network prior to sampling, recording the site conditions, and performing exterior maintenance to provide safe access for sampling.

2.0 LANDFILL UNIT GROUNDWATER MONITORING ACTIVITIES

In accordance with 40 CFR § 257.90(e), the following describes monitoring-related activities performed during the 2021 calendar year. Groundwater sampling was performed in accordance with 40 CFR § 257.93, as follows:

2.1 Landfill CCR Unit Assessment Monitoring

Cooperative Energy posted a Notice of Establishment of Assessment Monitoring Program for Morrow CCR landfill unit, dated May 16, 2018. Groundwater samples were collected for both Appendix III and Appendix IV constituents from each of the monitoring wells. In February 2021, Cooperative Energy conducted the annual Appendix IV monitoring event pursuant to § 257.95(b). The results were analyzed to determine which constituents were detected and required resampling, as required by § 257.95(d)(1). The 2021 semi-annual monitoring events were then conducted in April and September 2021.

2.2 Groundwater Elevation Measurement

Prior to each sampling event, groundwater elevations were recorded from the site monitoring wells. The April and September 2021 elevation data was used to develop potentiometric surface elevation contour maps to confirm the groundwater flow direction and to confirm that the groundwater monitoring well network for the CCR landfill unit remains sufficient to monitor groundwater downgradient of the unit. The direction of groundwater flow has not changed. Groundwater flows south, based on review of 2021 groundwater elevation contour maps, included as Figures 3A, First Semi-Annual 2021 Potentiometric Surface Elevation Contour Map (April 27, 2021) and 3B, Second Semi-Annual 2021 Potentiometric Surface Elevation Contour Map (September 14, 2021). No changes to the monitoring well network are necessary based on groundwater elevation data.

2.3 Groundwater Sampling and Laboratory Analysis

Groundwater samples were collected in accordance with 40 CFR § 257.93(a). Field sampling procedures included sample collection, field quality assurance/quality control (QA/QC), chain-of-custody controls, and field

documentation. The groundwater samples for the landfill unit for 2021 sampling events were analyzed for Appendix III and Appendix IV constituents and results are summarized in Table 1 - Analytical Data Summary – CCR Landfill (February 2021), Table 2 - Analytical Data Summary – CCR Landfill (April 2021), and Table 3 -Analytical Data Summary – CCR Landfill (September 2021). Analytical methods used for groundwater monitoring parameters are provided in laboratory reports. Laboratory analyses were performed by Micro Methods Laboratory, Inc.

3.0 COMPARATIVE STATISTICAL ANALYSES

Pursuant to 40 CFR § 257.93(f), the statistical methodology selected for the Morrow Facility meets the criteria referenced in the CCR Rule and the 2009 EPA Statistical Analysis of Groundwater Monitoring Data at Resource Conservation and Recovery Act (RCRA) Facilities Unified Guidance (EPA, 2009) and is consistent with the *Statistical Analysis Plan* (EMS, 2017).

Statistical analyses of Appendix III constituents were completed for the CCR landfill unit. In the sections below, Cooperative Energy provides a summary of the comparative statistical analyses completed in 2021, which includes the analyses for both semi-annual monitoring events conducted in 2021 for the CCR landfill unit.

3.1.1 Landfill Unit Statistical Analyses

Analytical data from the 2021 monitoring events for the CCR landfill unit monitoring well network have been statistically analyzed in accordance with the site's certified statistical analysis method. Results are summarized below.

Groundwater Protection Standards (GWPS)

Interwell tolerance limits were used to calculate background limits from pooled upgradient well data for Appendix IV parameters with a target of 95% confidence and 95% coverage in accordance with the *Statistical Analysis Plan* (EMS, 2017).

A GWPS has been established for statistical comparison of each Appendix IV constituent for the landfill unit. The Summary of Background Levels and GWPS table presented below, summarizes the site-specific background concentration for each monitoring event and the GWPS established under Federal rules. Where the background concentration is higher than the federal MCL, the background concentration is utilized as the GWPS for that constituent.

Table 3.1.2 Summary of Background Levels and GWPS								
		Site Specific	Background	Endored	GWPS			
Analyte ^[1]	Units	April 2021	September 2021	MCL	April 2021	September 2021		
Barium	mg/L	0.026	0.026	2	2	2		
Beryllium	mg/L	0.00983	0.00984	0.004	0.00983	0.00984		
Cobalt	mg/L	0.1671	0.1671	0.006	0.1671	0.1671		
Fluoride	mg/L	1.20	1.166	4	4	4		
Lead	mg/L	0.01022	0.0101	0.015	0.015	0.015		
Lithium	mg/L	1.42 ^[2]	1.42 ^[2]	0.04	1.42	1.42		
Molybdenum	mg/L	0.0025	0.0025	0.1	0.1	0.1		



Radium (226 + 228)	pCi/L	2.722	2.836	5	5	5
Thallium	mg/L	0.0005	0.001	0.002	0.002	0.002

If the comparison of the constituent's lower confidence interval is greater than the GWPS, a statistically significant level (SSL) is identified for that well.

Notes:

mg/L - milligrams per liter

pCi/L - picocuries per liter

[1] Analytes not detected during the annual scan are not presented.

[2] The lithium GWPS was calculated using data from MW-02, MW-03 and MW-04 because naturally-occurring lithium is present in soils and bedrock at the site. Therefore, it was necessary to adjust the lithium GWPS for the site accordingly. . See Golder, 2020., Alternate Source Demonstration RD Morrow Generating Station – Landfill CCR Unit, Purvis, Mississippi. Golder Prepared for Cooperative Energy, Inc. September 11, 2020.

Statistical Analysis

Analytical data from the April 2021 and September 2021 monitoring events for the CCR landfill unit monitoring network have been statistically analyzed in accordance with the site's certified statistical analysis method. Review of the Sanitas[™] results indicates that verified exceedances of the established prediction limits for Appendix III constituents continue to be observed. Using the GWPS established according to 40 CFR § 257.95(h), SSLs were identified at MW-05 for lithium and molybdenum following the 2021 monitoring events.

4.0 ASSESSMENT OF CORRECTIVE MEASURES

Following the requirements of 40 CFR § 257.96, RD Morrow has initiated an Assessment of Corrective Measures (ACM). Notification of this action was placed in the operating record on September 12, 2019 (Golder, 2019).

5.0 REMEDY SELECTION

Pursuant to 40 CFR § 257.97(a), Cooperative Energy is in the process of selecting a remedy. Remedy selection efforts are documented in the Semi-Annual Remedy Selection and Design Progress Reports (Progress Reports) for Cooperative Energy's RD Morrow Generating Station's CCR landfill unit in March and September, 2021. As required by the rules, these progress reports describe the progress made in selecting and designing a remedy and future planned activities. The progress reports for the 2021 annual period are listed below.

- First Semi-Annual 2021 Remedy Selection and Design Progress Report Cooperative Energy, RD Morrow CCR Landfill, prepared by Golder Associates Inc., dated March 11, 2021.
- Second Semi-Annual 2021 Remedy Selection and Design Progress Report Cooperative Energy, RD Morrow CCR Landfill, prepared by Golder Associates Inc., dated September 13, 2021.

As part of 2021 closure and source control efforts, concurrent with the remedy selection process, Cooperative Energy completed closure and capping of the CCR landfill unit.

6.0 PROGRAM TRANSITIONS

The former surface impoundment was certified closed by removal on March 19, 2021, concluding monitoring in the detection monitoring program. There were no groundwater monitoring program transitions for the landfill unit.

7.0 PROBLEMS ENCOUNTERED AND ACTIONS TO RESOLVE IN 2021

There were no specific problems encountered with the monitoring well systems in 2021.

8.0 CONCLUSIONS & FUTURE ACTIONS

This 2021 Annual Groundwater Monitoring and Corrective Action Report has been prepared in accordance with 40 CFR § 257.90(e) and describes the status of the groundwater monitoring program during the 2021 calendar year and key actions for the upcoming calendar year 2022.

Project Key Activities for 2022

The proposed activities for the 2022 calendar year include:

- Annual and Semi-annual sampling will continue, as required by 40 CFR § 257.94 and 40 CFR § 257.95.
- Additional data collection is ongoing as part of the ACM. Further progress will occur to evaluate remedy alternatives based on these data, modeling efforts, and analysis. Future semi-annual remedy selection progress reports will document these efforts.

9.0 REFERENCES

- EMS, 2017. Statistical Analysis Plan, RD Morrow Generating Station, Lamar County, Mississippi. Environmental Management Services, Inc. Prepared for Cooperative Energy, Inc. December 21, 2017.
- Golder, 2019, Assessment of Corrective Measures RD Morrow Generating Station Landfill CCR Unit, Hattiesburg, Mississippi. Golder Prepared for Cooperative Energy, Inc. September 12, 2019.
- Golder, 2020, Alternate Source Demonstration RD Morrow Generating Station Landfill CCR Unit, Purvis, Mississippi. Golder Prepared for Cooperative Energy, Inc. September 11, 2020.
- USEPA, 2015, Federal Register. volume 80. No. 74. Friday April 17, 2015. Part II. Environmental Protection Agency. 40 CFR Parts 257 and 261. Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule. [EPA HQ RCRA–2009–0640; FRL–9919–44– OSWER]. RIN–2050–AE81.

Figures







BASE MAP TAKEN FROM ENVIRONMENTAL MANAGEMENT SERVICES, INC., MONITORING WELL LOCATIONS, DATED 2017-02-17 DELIVERED IN .DWG FORMAT.

PROJECT NO. 21453914

APPROVED

DLP

CONTROL 21453914A001.dwg

REV. 0



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CONSULTANT		YYYY-MM-DD	2021-12-02
		DESIGNED	DLK
	GOLDER	PREPARED	DJC
	MEMBER OF WSP	REVIEWED	DLK
		APPROVED	DLP

REFERENCE BASE MAP TAKEN FROM ENVIRONMENTAL MANAGEMENT SERVICES, INC., MONITORING WELL LOCATIONS, DATED 2017-02-17 DELIVERED IN .DWG FORMAT.

GROUNDWATER ELEVATION CONTOUR

+ MW-XX MONITORING WELL LOCATION WITH GROUNDWATER ELEVATION

RD MORROW GENERATING STATION PURVIS, MISSISSIPPI

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PROPERTY BOUNDARY

+ MW-XX MONITORING WELL LOCATION WITH GROUNDWATER ELEVATION

GROUNDWATER ELEVATION CONTOUR - 220 -

CLIENT COOPERATIVE ENERGY LLC

CONSULTANT		YYYY-MM-DD	2021-12-02
		DESIGNED	DLK
	GOLDER	PREPARED	DJC
	MEMBER OF WSP	REVIEWED	DLK
		APPROVED	DLP

REFERENCE BASE MAP TAKEN FROM ENVIRONMENTAL MANAGEMENT SERVICES, INC., MONITORING WELL LOCATIONS, DATED 2017-02-17 DELIVERED IN .DWG FORMAT.

RD MORROW GENERATING STATION PURVIS, MISSISSIPPI

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Tables



TABLE 1 ANNUAL EVENT ANALYTICAL DATA SUMMARY - CCR Landfill (February 2021) RD Morrow Generating Station

Purvis, Mississippi

Analvte	Units		ASSESSMENT MONITORING WELL				
		MW-02	MW-03	MW-04	MW-05	MW-06	MW-10
	Sample Date:	2/24/2021	2/24/2021	2/24/2021	2/24/2021	2/24/2021	2/24/2021
Appendix IV							
ANTIMONY, TOTAL	mg/L	< 0.00200	< 0.00200	< 0.00200	< 0.00200	< 0.00200	< 0.00200
ARSENIC, TOTAL	mg/L	< 0.00200	< 0.00200	< 0.00200	< 0.00200	< 0.00200	< 0.00200
BARIUM, TOTAL	mg/L	0.0224	0.0342	0.0346	0.0591	0.143	0.0320
BERYLLIUM, TOTAL	mg/L	0.00567	<0.00400	<0.00400	<0.00400	<0.00400	0.0116
CADMIUM, TOTAL	mg/L	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500
CHROMIUM, TOTAL	mg/L	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100	< 0.0100
COBALT, TOTAL	mg/L	0.112	0.0283	0.0500	0.00818	0.00247	0.153
FLUORIDE, TOTAL	mg/L	0.70	<0.50	<0.50	<0.50	<0.50	0.74
LEAD, TOTAL	mg/L	0.00227	0.0674	0.00264	<0.00100	<0.00100	0.00409
LITHIUM, TOTAL	mg/L	0.071	0.789	0.639	2.11	<0.040	0.572
MERCURY, TOTAL	mg/L	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
MOLYBDENUM, TOTAL	mg/L	< 0.00500	0.00727	< 0.00500	3.18	< 0.00500	< 0.00500
RADIUM (226 + 228)	pCi/L	-0.001	1.450	1.336	0.445	0.977	1.589
SELENIUM, TOTAL	mg/L	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500	< 0.0500
THALLIUM, TOTAL	mg/L	< 0.00100	0.00125	< 0.00100	0.00131	< 0.00100	< 0.00100

NOTES:

1. mg/L - Milligrams per Liter; pCi/L - picocuries per Liter

2. < - Constituent was analyzed for, but was not detected above the PQL and is considered a non-detect. Value is displayed as less than the PQL.

3. Radium data is a combination of radium isotopes 226 and 228. When results are reported below the MDC (Minimum Detectable Concentration), data is displayed with an accompanying U. The MDC varies depending upon the sample amount and elapsed time of the measurement.

4. Detected values are BOLDED and do not mean an exceedance is identified.

5. Analytes with striketrough did not have detections in monitoring well network and do not need to be sampled for during the semi-annual monitoring events.



TABLE 2 ANALYTICAL DATA SUMMARY - CCR Landfill (April 2021) RD Morrow Generating Station Purvis, Mississippi

Analyte	Units		ASSESSMENT MONITORING WELL				
		MW-02	MW-03	MW-04	MW-05	MW-06	MW-10
	Sample Date:	4/28/2021	4/28/2021	4/27/2021	4/27/2021	4/27/2021	4/27/2021
Appendix III							
BORON, TOTAL	mg/L	1.29	7.86	10.8	14.0	<0.050	5.31
CALCIUM, TOTAL	mg/L	97.6	487	421	590	3.34	94.5
CHLORIDE, TOTAL	mg/L	139	129	121	138	7.14	190
FLUORIDE, TOTAL	mg/L	0.80	<0.50	<0.50	<0.50	<0.50	0.60
рН	S.U.	4.37	5.17	4.49	6.62	4.76	3.87
SULFATE, TOTAL	mg/L	508	2190	2390	2200	19.4	756
TOTAL DISSOLVED SOLIDS	mg/L	771	2820	2886	3494	89	1337
Appendix IV							
ANTIMONY, TOTAL	mg/L	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required
ARSENIC, TOTAL	mg/L	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required
BARIUM, TOTAL	mg/L	0.020	0.034	0.034	0.055	0.137	0.023
BERYLLIUM, TOTAL	mg/L	0.00498	<0.00400	<0.00400	<0.00400	<0.00400	0.00892
CADMIUM, TOTAL	mg/L	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required
CHROMIUM, TOTAL	mg/L	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required
COBALT, TOTAL	mg/L	0.114	0.0247	0.0457	0.00614	0.00245	0.109
FLUORIDE, TOTAL	mg/L	0.80	<0.50	<0.50	<0.50	<0.50	0.60
LEAD, TOTAL	mg/L	0.00265	0.00313	0.00330	<0.00100	<0.00100	0.00259
LITHIUM, TOTAL	mg/L	0.189	0.767	0.792	2.46	<0.040	0.487
MERCURY, TOTAL	mg/L	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required
MOLYBDENUM, TOTAL	mg/L	<0.00500	<0.00500	<0.00500	3.25	<0.00500	<0.00500
RADIUM (226 + 228)	pCi/L	0.630 U	1.283 U	1.00 U	1.235 U	1.325 U	2.376
SELENIUM, TOTAL	mg/L	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required
THALLIUM, TOTAL	mg/L	<0.00100	<0.00100	<0.00100	0.00140	<0.00100	<0.00100

NOTES:

1. mg/L - Milligrams per Liter; pCi/L - picocuries per Liter

2. < - Constituent was analyzed for, but was not detected above the PQL and is considered a non-detect. Value is displayed as less than the PQL.

3. Radium data is a combination of radium isotopes 226 and 228. When results are reported below the MDC (Minimum Detectable Concentration), data is displayed with an accompanying U. The MDC varies depending upon the sample amount and elapsed time of the measurement.

4. Not Required - constituent analyses is not required per 40 CFR 257.96 . Annual scan of the Appendix IV constituents is conducted along with semi-annual monitoring for those constituents in Appendix III and those Appendix IV constituents detected during the annual scan event.

5. Appendix III Constituents: Bolded data indicates a SSI; Appendix IV Constituents: Bolded data indicates a Statistically Significant Level based on 95% confidence interval above the Groundwater Protection Standard (GWPS).



TABLE 3 ANALYTICAL DATA SUMMARY - CCR Landfill (September 2021) RD Morrow Generating Station Purvis, Mississippi

Analyte	Units	ts DETECTION MONITORING WELLS N					
		MW-02	MW-03	MW-04	MW-05	MW-06	MW-10
	Sample Date:	9/15/2021	9/15/2021	9/15/2021	9/14/2022	9/14/2021	9/14/2021
Appendix III							
BORON, TOTAL	mg/L	1.09	7.41	10.5	10.5	0.050	5.23
CALCIUM, TOTAL	mg/L	43.6	480	449	614	2.09	94.9
CHLORIDE, TOTAL	mg/L	106	147	131	213	7.44	190
FLUORIDE, TOTAL	mg/L	0.63	<0.50	<0.50	<0.50	<0.50	0.54
рН	S.U.	4.19	5.49	4.53	6.57	4.83	3.72
SULFATE, TOTAL	mg/L	516	2500	2510	2380	10.6	778
TOTAL DISSOLVED SOLIDS	mg/L	795	2854	2774	3428	119	1188
Appendix IV							
ANTIMONY, TOTAL	mg/L	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required
ARSENIC, TOTAL	mg/L	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required
BARIUM, TOTAL	mg/L	0.023	0.040	0.038	0.063	0.130	0.027
BERYLLIUM, TOTAL	mg/L	0.00502	<0.00400	<0.00400	<0.00400	<0.00400	0.00989
CADMIUM, TOTAL	mg/L	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required
CHROMIUM, TOTAL	mg/L	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required
COBALT, TOTAL	mg/L	0.106	0.0287	0.0547	0.00759	0.00200	0.137
FLUORIDE, TOTAL	mg/L	0.63	<0.50	<0.50	<0.50	<0.50	0.54
LEAD, TOTAL	mg/L	0.00211	0.00401	0.00303	<0.00100	<0.00100	0.00305
LITHIUM, TOTAL	mg/L	<0.040	0.496	0.355	1.63	<0.040	0.437
MERCURY, TOTAL	mg/L	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required
MOLYBDENUM, TOTAL	mg/L	<0.00500	<0.00500	<0.00500	2.76	<0.00500	<0.00500
RADIUM (226 + 228)	pCi/L	0.705 U	1.077 U	1.535 U	1.218 U	0.478 U	1.701
SELENIUM, TOTAL	mg/L	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required
THALLIUM, TOTAL	mg/L	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200

NOTES:

1. mg/L - Milligrams per Liter; pCi/L - picocuries per Liter

2. < - Constituent was analyzed for, but was not detected above the PQL and is considered a non-detect. Value is displayed as less than the PQL.

3. Radium data is a combination of radium isotopes 226 and 228. When results are reported below the MDC (Minimum Detectable Concentration), data is displayed with an accompanying U. The MDC varies depending upon the sample amount and elapsed time of the measurement.

4. Not Required - constituent analyses is not required per 40 CFR 257.96. Annual scan of the Appendix IV constituents is conducted along with semi-annual monitoring for those constituents in Appendix III and those Appendix IV constituents detected during the annual scan event.

5. Appendix III Constituents: Bolded data indicates a SSI; Appendix IV Constituents: Bolded data indicates a Statistically Significant Level based on 95% confidence interval above the Groundwater Protection Standard (GWPS).



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