

**Entergy Arkansas, LLC
Independence Steam Electric Station
Landfill Cells 12-15**

2020 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:



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January 29, 2021

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EXECUTIVE SUMMARY

Entergy Arkansas, LLC (Entergy), operates a coal ash disposal landfill (Landfill) for the disposal of coal combustion residuals (CCR) at the Independence Steam Electric Station (Plant) located near Newark, Arkansas. The Landfill receives CCR generated from the combustion of coal at the Plant. Management of CCR at the Landfill 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 Plant conducted two semi-annual detection monitoring events in 2020 for the Landfill CCR Unit monitoring well network per 40 CFR § 257.94. The statistical analyses completed for the second semi-annual 2019 and the first semi-annual 2020 sampling event analytical data did not identify statistically significant increases (SSIs). The Landfill CCR unit operated under the detection monitoring program (40 CFR § 257.94) during the duration of 2020.

1. INTRODUCTION

Entergy Arkansas, LLC (Entergy), operates the Landfill for the disposal of CCR at the Plant located near Newark, Arkansas (Lat: 35.67826 / Long: -91.408848). The Landfill receives CCR generated from the combustion of coal at the Plant. The CCR Landfill is managed in accordance with the national criteria established in the CCR Rule. Entergy installed a groundwater monitoring system at the Landfill 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, Entergy must prepare an annual report that provides information regarding the groundwater monitoring and corrective action program at the Landfill.

2. GROUNDWATER MONITORING SYSTEM

The Landfill's groundwater monitoring system consists of 11 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 DECOMMISSIONED WELLS DURING 2020

Entergy did not install any new wells or decommission any existing wells in the certified groundwater monitoring system during 2020.

4. GROUNDWATER MONITORING DATA

In accordance with §257.90(e)(3), all monitoring data obtained under §§257.90 through 257.98 during 2020 are provided in Appendix B along with a summary of the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was collected as part of detection or assessment monitoring.

5. STATUS SUMMARY OF THE 2020 GROUNDWATER MONITORING PROGRAM

Groundwater monitoring was performed in accordance with the detection monitoring requirements of §257.94. A summary of activities related to groundwater detection monitoring performed during 2020 is provided in the list below:

- In accordance with §257.94(b), semiannual detection monitoring was performed during the first half (March) and second half (December) of 2020 for analysis of Appendix III parameters (boron, calcium, chloride, fluoride, pH, sulfate and total dissolved solids (TDS)).
- Statistical evaluation of the semiannual detection 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 Entergy's CCR Rule Compliance Data and Information website.
- The first half 2020 semi-annual detection monitoring sampling was performed during March 2020. Based on statistical evaluation of the data, resampling was not required, and no statistically significant increases (SSIs) were identified.
- No SSIs were identified in the second half of 2019 and the first half of 2020 semi-annual detection monitoring events; therefore, Entergy did not prepare alternative source demonstrations (ASDs) per §257.94(e)(2) for either of the detection monitoring events for the CADL CCR Unit.
- The second half 2020 detection monitoring sampling was performed during December 2020. Statistical evaluation of the data will be performed during 2021 to determine if any SSIs are identified in accordance with §257.93(h).
- No problems were encountered during 2020 regarding the detection monitoring and corrective action system. Therefore, no actions were required to modify the system.
- The Landfill CCR unit remained in detection monitoring during the duration of 2020.

6. PROJECTED ACTIVITIES FOR 2021

Planned activities for the program during 2021 are listed below:

- Statistical evaluation of the second half 2020 detection monitoring sampling data will be performed during 2021 to determine if any SSIs are identified.
- Semiannual detection monitoring is planned for June and December 2021.

APPENDIX A
SITE MAP

APPENDIX B
GROUNDWATER MONITORING DATA

Sampling Schedule, Entergy Independence CADL Network			
Well ID	Detection Monitoring Sampling Dates and Wells Sampled		Number of Samples Collected
	3/10-3/17/2020	12/15-12/17/2020	
MW-1R	X	X	2
MW-3	X	X	2
MW-6	X	X	2
MW-7	X	X	2
MW-8	X	X	2
MW-9	X	X	2
MW-10	X	X	2
MW-11	X	X	2
MW-13	X	X	2
MW-17	X	X	2
MW-18	X	X	2

Notes: All samples collected in 2020 were part of the detection monitoring program. No samples collected in 2020 were part of an assessment monitoring program.

Field pH data collected during 2020, Entergy Independence CADL network		
Well ID	Date Collected	pH (su)
MW-1R	3/17/2020	6.39
	12/16/2020	6.70
MW-3	3/12/2020	6.45
	12/17/2020	6.68
MW-6	3/12/2020	6.33
	12/17/2020	6.44
MW-7	3/12/2020	7.21
	12/17/2020	7.40
MW-8	3/17/2020	6.34
	12/16/2020	6.57
MW-9	3/13/2020	6.41
	12/16/2020	6.48
MW-10	3/12/2020	6.51
	12/17/2020	6.68
MW-11	3/12/2020	6.65
	12/17/2020	6.69
MW-13	3/13/2020	6.68
	12/16/2020	6.92
MW-17	3/10/2020	6.21
	12/15/2020	6.29
MW-18	3/11/2020	6.33
	12/17/2020	6.55