

**Semi-Annual Progress Report-09
Selection and Design of Corrective Remedy
Clinch River Ash Pond 1**

**Clinch River Plant
Appalachian Power Company
Cleveland, Virginia**

July 2024

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1.0 BACKGROUND

The Ash Pond 1 site at the Clinch River Plant is subject to the federal CCR rule (40 CFR Part 257) and the Virginia Department of Environmental Quality (VADEQ) solid waste regulations (9 VAC 20-81-800 *et seq.*). The pond is considered an inactive impoundment (out of service, but still containing standing water when the rule took effect on 19 October 2015), and is currently subject to 40 CFR Part 257, as amended in October 2016 to include Extension of Compliance Deadlines for Certain Inactive Impoundments and 9 VAC 20-81-820. The permitting process with VADEQ for closing the impoundment began in October 2015, and in June 2017 VADEQ issued Permit #620 for Ash Pond 1. Closure of Ash Pond 1 was completed in 2018.

As of this progress report, VADEQ has not received CCR permit program authority from U.S. EPA to operate in lieu of the federal CCR rule, and American Electric Power (AEP) must comply with both regulations. This progress report focuses on the federal CCR rule requirements except where permit approval from VADEQ is necessary to meet aspects of those federal requirements.

Sampling and analyses of groundwater from the monitoring network installed pursuant to 40 CFR §257.95 continues to identify the following Appendix IV constituents at statistically significant levels above the respective groundwater protection standards (GWPS): barium, cobalt, lithium, and molybdenum.

The Assessment of Corrective Measures (ACM) report was prepared and posted to the Operating Record on December 11, 2019. A public meeting was conducted on December 19, 2019, in the town of Lebanon, Virginia to discuss the remediation technologies that are technically feasible for the specific site conditions at Ash Pond 1. A 30-day public comment period occurred from December 19, 2019, to January 20, 2020. One public comment was received during the 30-day period.

Corrective measures assessed for Pond 1 at the Clinch River plant have been developed based on site-specific conditions in conjunction with remedial actions that are technically implementable and effective for the identified COCs. Corrective Measure Alternatives were developed that combined technologies that had been retained from the initial screening for further evaluation.

AEP identified two technically feasible alternatives for remediating the groundwater, which are listed. Alternative 2A is currently being evaluated.

Alternative #1: Source Removal with Monitored Natural Attenuation

Alternative #2: Groundwater Extraction, Treatment and Surface Water Discharge

Alternative #2A: Groundwater Extraction and Treatment at the Downgradient Edge of the Unit

Alternative #2B: Groundwater Extraction and Treatment at the Downgradient Edge of the Unit with Upgradient Barrier

Alternative #2C: Groundwater Extraction and Treatment at the Upgradient Unit Boundary.

Estimates for the time to achieve compliance with GPSs at the waste boundary have been made for each alternative. The assumptions and calculations supporting these estimates are included in the most recent revised ACM report submitted to VADEQ.

2.0 PURPOSE

This semiannual report is required by 40 CFR §257.97 and describes AEP's progress in selecting and designing the corrective measure(s) discussed in the ACM Report submitted to VADEQ.

This report covers the period from: January 19, 2024 - July 18, 2024.

3.0 PROGRESS

The following summarizes the progress made towards remedy selection:

- May 19, 2021, AEP received comments from the VADEQ regarding the ACM and Nature and Extent Study (NES) reports. Additional wells were installed, and additional sampling was conducted to address comments on the NES report.
- August 16, 2021, AEP partially addressed VADEQ's comments and resubmitted the NES and ACM reports on August 25, 2021.
- December 2021, VADEQ met with AEP to identify additional well locations for the NES and resubmittal of the NES/ACM after installation of the wells and completing a property boundary research/survey as requested by VADEQ in May 2021.
- During 2022, new NES wells were installed and certified and sampled in Fall of 2022 to provide additional data to update the NES report.
- February 2023, AEP submitted a revised NES.
- March 2023 - AEP submitted a minor permit modification request to incorporate Federal Alternate groundwater protection standards (GPS) for CCR constituents. VADEQ approved the minor permit modification on May 9, 2023.
- May 13, 2023 - AEP submitted a request to withdraw the NES/ACM that had previously been provided, to allow the facility to update the NES and ACM to account for the Federal Alternate GPS values (40 CFR 257.95(h)), and to update the property boundary in the NES/ACM and to collect surface water samples to complete the horizontal delineation of the exceedances.
- June 22, 2023 - VADEQ approved the facility's request to withdraw the NES/ACM.
- September 19, 2023 – AEP submitted an updated NES, which is under VADEQ's review.

- January 31, 2024 – AEP posted the Annual Groundwater Monitoring and Corrective Action Report to the operating record and on the publicly accessible website.
- February 29, 2024 – AEP submitted a revised ACM to VADEQ to address their May 2021 technical review.
- Due to the closure performance requirements of the May 8, 2024 publication of 40 CFR 257, the ACM was rescinded from VADEQ. The revised ACM will be submitted to VADEQ no later than 90 days from June 18th, 2024. AEP also conducted the semi-annual groundwater sampling and analysis event during this report period.

4.0 PLANNED WORK

AEP will continue working on ACM and NES reports as of this update. Approval of the ACM and NES by VADEQ is necessary to modify the state permit and implement the selected remedy per the requirements in 9 VAC 20-81-260. This VADEQ permit modification is needed prior to formally selecting the remedy, developing a corrective action plan, and a corrective action monitoring plan that are required by the federal CCR Rule.

AEP plans to continue to evaluate and advance the development of the selection of remedy for the impacted groundwater.

AEP will respond to comments, if any, on the ACM and NES reports submitted to VADEQ.

AEP will sample all the certified groundwater monitoring network wells and evaluate the results as part of the semi-annual requirement.

AEP will submit another progress report by January 18, 2025.

Record of Changes

Date	Revision #	Comments	Reviewer
7-18-24	0	Initial submittal	Mazin M. Al-Zou'bi
7-25-24	1	Revised Section 1 to reflect Alternatives listing as laid out in the ACM post to web site.	Mazin M. Al-Zou'bi