

January 8, 2023

SEMIANNUAL REMEDY SELECTION PROGRESS REPORT COFFEEN POWER PLANT ASH POND NO. 2

In accordance with Title 40 of the Code of Federal Regulations (40 C.F.R.) § 257.97(a), the owner or operator of a coal combustion residuals (CCR) unit must prepare a semiannual report describing the progress in selecting and designing a remedy for statistically significant levels (SSLs) of constituents listed in Appendix IV of 40 C.F.R. § 257 over the groundwater protection standards established in accordance with 40 C.F.R. § 257.95(h).

This report is for activities occurring between July 9, 2022 and January 8, 2023 at Ash Pond No. 2 (AP2) at Coffeen Power Plant.

AP2 is located in the State of Illinois and is also subject to compliance with Title 35 of the Illinois Administrative Code (35 I.A.C.) § 845. An application for an operating permit required for AP2 by 35 I.A.C. § 845.230 was submitted to the Illinois Environmental Protection Agency (IEPA) by October 31, 2021 and is pending approval. An evaluation of background groundwater quality was completed and presented in the operating permit application. Exceedances of groundwater protection standards established under 35 I.A.C. § 845 may require corrective action through a permitting process administered by IEPA. The operating permit application and related documents can be found on the publicly available CCR website: <https://www.luminant.com/ccr/illinois-ccr/>

As stated in previous Semiannual Remedy Selection Progress Reports, a Corrective Measures Assessment (CMA) was completed for cobalt exceedances at AP2 on July 8, 2019 as required by 40 C.F.R. § 257.96. This CMA was revised on November 30, 2020 to address cobalt and lithium based on 2020 assessment monitoring results, to include additional information related to site geology/hydrogeology, and to focus on application of the evaluation factors identified in 40 C.F.R. § 257.96(c) pertaining to potential groundwater corrective measures. Additional revisions were made to the CMA on January 6, 2023 to include an alternative source demonstration (ASD) for cobalt completed in the last reporting period (January 9 to July 8, 2022) and additional site geology/hydrogeology information gained during site investigation activities in 2021 related to permitting required by 35 I.A.C. § 845.

The CMA indicated the source control measure for AP2 would be closure in place with a geomembrane cover system. Construction of the geomembrane cover system began in July of 2019 and was completed on November 17, 2020 in accordance with the Closure and Post Closure Care Plan approved by IEPA on January 30, 2018.

Additional activities were completed during the reporting period to provide both further support for the ASD for cobalt and to continue evaluation of monitored natural attenuation (MNA) as a potential remedy for selected Appendix IV constituents remaining in groundwater following completion of source control measures. These activities included further interpretation of previously completed bench-scale testing and solid phase analysis. These analyses are needed to complete the tiered evaluation referenced in United States Environmental Protection Agency (USEPA) guidance, including development of a geochemical conceptual site model. These activities are necessary to understand the natural attenuation mechanisms occurring at the site and to evaluate the natural attenuation of constituents to meet applicable groundwater protection standards.

As stated in the notification dated January 6, 2023, an SSL for cobalt was identified at AP2 following assessment monitoring completed in accordance with 40 C.F.R. § 257.95, consistent with related observations during previous reporting periods. An SSL for total lithium was not identified, which is inconsistent with previous reporting periods. Consequently, further evaluation of total lithium for corrective action is not warranted for AP2. Results from future sampling events will be evaluated to determine if evaluation of total lithium for corrective action should resume for AP2.

Remedy selection will take into consideration compliance with both 40 C.F.R. § 257 and 35 I.A.C. § 845, the latter of which cannot be completed until IEPA approves the groundwater monitoring program and issues the operating permit. In accordance with 40 C.F.R. § 257.97, remedy selection is to be completed as soon as feasible following completion of a CMA. As required by 35 I.A.C. § 845.670, a corrective action plan that identifies the selected remedy must be submitted to IEPA within one year after completing the CMA. It is anticipated that these activities related to 35 I.A.C. § 845 compliance will occur in 2023 with submittal of a corrective action plan in 2024 that meets both 40 C.F.R. § 257 and 35 I.A.C. § 845.