

September 5, 2023

## **SEMIANNUAL REMEDY SELECTION PROGRESS REPORT OLD WEST ASH POND (POND NO. 1 AND POND NO. 3) AND POLISHING POND HENNEPIN POWER PLANT**

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 March 6, 2023, and September 5, 2023, at the Old West Ash Pond (Pond No. 1 and Pond No. 3) and Polishing Pond, collectively referred to as the West Ash Pond System (WAPS), at Hennepin Power Plant.

As stated in the notification dated August 12, 2023, SSLs for total arsenic and total cadmium were identified at the WAPS following assessment monitoring completed during the reporting period in accordance with 40 C.F.R. § 257.95, consistent with previous reporting periods. An SSL for total lithium was not identified, which is inconsistent with previous reporting periods. An Alternate Source Demonstration (ASD) for the total cadmium SSL is being prepared and will be submitted with related documentation to the WAPS operating record by the October 11, 2023 deadline.

As stated in the March 5, 2020, Semiannual Remedy Selection Progress Report, a Corrective Measures Assessment (CMA) was completed for the WAPS on September 5, 2019, to address SSLs for total arsenic, total lithium, and total molybdenum (see related notification dated February 6, 2019), as required by 40 C.F.R. § 257.96. The CMA evaluated closure in place with a geomembrane cover system and Monitored Natural Attenuation (MNA) in accordance with the Closure and Post Closure Care Plan submitted to the Illinois Environmental Protection Agency (IEPA) in January 2018. IEPA approved the Closure and Post Closure Care Plan on June 19, 2018. Closure construction began in August of 2019 and was completed in November of 2020.

As stated in the September 5, 2020, Semiannual Remedy Selection Progress Report, existing groundwater and source water data were reviewed, as well as identification and collection of additional groundwater and source water samples to evaluate the feasibility of MNA. These data indicate that site-specific conditions appear favorable for implementation of MNA in combination with the completed closure referenced above.

Additional activities were completed during the reporting period. Bench scale testing, including characterization of the materials and batch adsorption tests to better understand natural attenuation mechanisms, rates, and aquifer capacity, were previously completed. Additional analysis of previously completed bench scale testing results is ongoing, including evaluating the reversibility of these constituents' attenuation mechanisms under varying site conditions. Analysis of natural attenuation mechanisms, rates, and aquifer capacity is 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 their potential ability to reduce the aqueous concentrations of total arsenic to below the applicable groundwater protection standards.

The Old West Ash Pond is located in the State of Illinois and is also subject to the state's CCR program located at Title 35 of the Illinois Administrative Code (35 I.A.C.) Part 845. An application for an operating permit for the Old West Ash Pond required 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. Groundwater sampling for Part 845 compliance evaluation in accordance with 35 I.A.C. § 845.640 was initiated at the OWAP during Quarter 2, 2023. 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 company's publicly available CCR website: <https://www.luminant.com/ccr/illinois-ccr/>

Remedy selection will take into consideration compliance with both 40 C.F.R. § 257 and 35 I.A.C. Part 845. In accordance with 40 C.F.R. § 257.97, remedy selection is to be completed as soon as feasible following completion of the 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 completed in accordance with 35 I.A.C. § 845.660. It is anticipated that these activities related to 35 I.A.C. Part 845 compliance will be initiated in 2023 with submittal of a corrective action plan in 2025 that meets the requirements of both 40 C.F.R. § 257 and 35 I.A.C. Part 845.