

March 5, 2022

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

In accordance with Title 40 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 September 6, 2021 and March 5, 2022 at Ash Pond No. 2 (AP2) at Hennepin Power Plant.

As stated in the March 5, 2020 Semiannual Remedy Selection Progress report, a Corrective Measures Assessment (CMA) was completed for AP2 on September 5, 2019 to address SSLs for 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 soil 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 February 2018 with final revisions submitted in January 2020. IEPA approved the Closure and Post Closure Care Plan on February 26, 2020. Closure construction began in May 2020 and was completed in November 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 recently completed closure referenced above.

Additional activities completed during the reporting period associated with the selection of the groundwater remedy include a review of analytical and field data from samples collected from the Illinois River and three (3) groundwater monitoring wells adjacent to it prior to, during, and after flood conditions to evaluate how flood events affect concentration levels in groundwater. Additionally, bench scale testing, including characterization of the materials and batch adsorption tests, was completed to better understand natural attenuation mechanisms, rates, and aquifer capacity. A site-specific attenuation capacity for molybdenum was calculated using the results of the bench scale testing. Additional analysis of the bench scale testing results is ongoing. This analysis 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 lithium and total molybdenum to below the applicable groundwater protection standards.

As stated in the notification dated February 12, 2022, SSLs for total lithium and total molybdenum were identified at AP2 following assessment monitoring completed during the reporting period in accordance with 40 C.F.R. § 257.95, consistent with related observations during previous reporting periods.