

March 5, 2022

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 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 the Old West Ash Pond (Pond No. 1 and Pond No. 3) and Polishing Pond, collectively referred to as the OWAP, at Hennepin Power Plant.

As stated in the March 5, 2020 Semiannual Remedy Selection Progress Report, a Corrective Measures Assessment (CMA) was completed for the OWAP 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 recently completed closure referenced above.

Additional activities completed during the reporting period associated with the selection of a 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, 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. 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, total lithium, and total molybdenum to below the applicable groundwater protection standards.

As stated in the notification dated February 12, 2022, SSLs for total arsenic, total lithium, total molybdenum, and total thallium were identified at the OWAP following assessment monitoring completed during the reporting period in accordance with 40 C.F.R. § 257.95, with total thallium being a new SSL for the OWAP. An Alternate Source Demonstration is currently being evaluated for this new total thallium SSL, with related documentation due to the OWAP operating record on April 13, 2022.