

Prepared For:
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**SEMIANNUAL CORRECTIVE
MEASURES PROGRESS REPORT
NOVEMBER 2022**

for

**ASH BASIN 6, BRUNNER ISLAND
YORK COUNTY, PENNSYLVANIA**

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1. PURPOSE

Geosyntec Consultants (Geosyntec) has prepared this *Semiannual Corrective Measures Progress Report* (Report) for Brunner Island, LLC for Ash Basin 6 (the Site) at the Brunner Island Steam Electric Station (Brunner Island) located in York County, Pennsylvania. This Report is required to fulfill the requirements of the Federal Coal Combustion Residual Rule (CCR Rule) codified in Title 40 of the Code of Federal Regulations (CFR) Subpart D Section 257.97(a). This Report provides a description of the progress in selecting and designing a remedy for the CCR Rule Appendix IV constituents detected in groundwater samples with a statistically significant level (SSL) above their groundwater protection standard (GWPS).

2. BACKGROUND

A statistically significant increase (SSI) above background concentrations of one or more CCR Rule Appendix III constituents was detected in groundwater samples under the Detection Monitoring Program in January 2018. The SSI triggered an Assessment Monitoring Program, including analysis for Appendix IV constituents. GWPS were established in September 2018 for detected Appendix IV constituents. An SSL above the GWPS for one or more detected Appendix IV constituents were identified in October 2018, triggering an Assessment of Corrective Measures (ACM). The ACM evaluated potential remedies for the SSL and was completed in June 2019. The ACM determined that the appropriate Corrective Measures to address the SSL were: (i) dewatering of the basin, (ii) CCR source removal, and (iii) continued groundwater monitoring. The remedy evaluation/selection process is underway, taking into consideration the effect of the ongoing CCR source removal.

3. CORRECTIVE MEASURES IMPLEMENTATION ACTIVITIES

The following Corrective Measure activities have taken place at Ash Basin 6 since the ACM was completed in June 2019.

- Operational Change – Placement of CCR and non-CCR waste, including process water, in Ash Basin 6 ceased on 31 May 2019. This action terminated the placement of additional source mass and facilitated ash dewatering steps described below.
- Passive Dewatering – Shortly after cessation of CCR and non-CCR waste placement, the discharge structure for the basin was modified to allow ash pore water and stormwater runoff that had accumulated in the settling pond in the southeastern portion of the basin to passively drain through the discharge structure into the downgradient polishing pond. Modification of the passive discharge structure, together with the prior cessation of process water input to Ash Basin 6, lowered the water level in the settling pond approximately 12 feet. Passive dewatering of the ponded water to the elevation of the passive outlet structure was completed prior to the submission of the November 2019 Semiannual Corrective Measures Progress Report. This action reduced the hydraulic head within the ash that is the driving force for the transport of ash constituents into the underlying groundwater.

- Active Dewatering – Active dewatering of the remaining accumulated water in the settling pond at elevations below the passive outlet structure began in January 2020. Active dewatering consists of pumping water from the settling pond into the discharge structure, where it can then gravity drain into the polishing pond. Active dewatering has lowered the water level in the settling pond an additional ten feet, which corresponds to one to two feet above the bottom of the settling pond. The active system operation continues to remove water, as necessary, entering the settling pond and has further reduced the potential for transport of ash constituents into the underlying groundwater.
- Pumping Test Investigation – Additional methods, including pumping wells, to potentially remove more pore water from the ash, have been evaluated. An ash pore water pumping pilot test was completed in October 2020 to obtain hydrogeological information within the CCR material. Results from the pilot test indicated that extraction wells are not feasible because a large number of wells would be necessary, which would interfere with the CCR removal operations.
- CCR Removal – CCR (source) removal was initiated in July 2015 and has continued at a rate of approximately 150,000 tons per year as authorized under a state residual waste permit issued by the Pennsylvania Department of Environmental Protection (PADEP). Removal of the CCR reduces the volume and mass of source material that could potentially release Appendix IV constituents that could be transported into the underlying groundwater in the future. Removed CCR continues to be beneficially used by the cement industry, and efforts are being made to accelerate the removal.
- Groundwater Monitoring – Groundwater monitoring has continued under the Assessment Monitoring Program in accordance with the CCR Rule, and in accordance with the Sampling and Analysis Plan under the PADEP residual waste permit. Groundwater was most recently sampled in October 2022. Groundwater monitoring is used to evaluate the performance of the remedial measures described above in addressing the Appendix IV SSLs.
- Supplemental Groundwater Assessment – A supplemental assessment to further investigate the area around monitoring well MW-6-3N was initiated in May 2022 in accordance with the PADEP approved work plan. Activities completed to date include: (i) advancement of four deep (92, 100, 100, and 200 feet) bedrock boreholes and downhole geophysical logging of the boreholes; (ii) depth-discrete groundwater sampling using a straddle packer assembly of the boreholes; (iii) installation and sampling of four monitoring wells; and (iv) rock sampling for desorption testing.

4. REMEDY SELECTION AND DESIGN PROGRESS

A final CCR Rule remedy for Ash Basin 6 has yet to be selected; however, it is expected to be similar/supplemental to the ongoing state-permitted remedy (closure-by-removal (source control) and groundwater monitoring). Planning activities are underway to facilitate a Public Meeting to discuss

the results of the ACM and the status of Ash Basin 6; it is currently expected that the meeting would occur in the summer of 2023.