Pawnee Station East CCR Landfill

Notification of SSI and Assessment Monitoring/Alternative Source Demonstration

Public Service Company of Colorado (PSCo), an Xcel Energy Company, owns and operates Pawnee Station, a coal-fired, steam turbine electric generating station. Pawnee currently operates two CCR landfills on site, the North CCR Landfill and the East CCR Landfill. Pawnee Station also formerly had two CCR Impoundments on site that were closed by removal of all CCR in 2017 with ongoing groundwater monitoring. The East CCR Landfill was constructed in 2018 in the footprint of one of these closed impoundments, the former Bottom Ash Storage Pond (BASP). The East CCR Landfill was designed and constructed with CCR compliant composite liner and leachate collection systems. CCR was first placed in the East CCR landfill in July 2019 and groundwater detection monitoring was initiated in November 2109.

Protecting the environment is a core value for Xcel Energy

Xcel Energy conducts all of our business in an environmentally responsible manner and that includes regularly monitoring our operations and taking steps to protect our air, water and other natural resources. Pursuant to 40 CFR Part 257.93(h)(2) of the Disposal of Coal Combustion Residuals from Electrical Utilities Rule (Federal CCR Rule), finalized on April 17, 2015, Xcel Energy has made a determination of Statistically Significant Increases (SSIs) over background levels for the constituents listed in Appendix III as required by 257.94(a). The attached Memo, Determination of Statistically Significant Increases over Background per 257.93(h)(2), identifies those constituents for which SSIs have been identified. These test results do not indicate there is any impact on local drinking water. The monitoring wells evaluate groundwater immediately adjacent to the CCR unit, and measure groundwater conditions within the Pawnee Station property boundary.

As a next step, and pursuant to 257.94(e)(2), Xcel Energy is undertaking an alternative source demonstration to evaluate whether a source other than the CCR unit caused the SSI. If an alternative source is not confirmed within 90 days, assessment monitoring will be initiated pursuant to 257.95.

Memo

Date: Thursday, April 02, 2020

To: Pawnee Station CCR Operating Record

From: Matt Rohr, HDR Engineering, Inc.

Subject: Pawnee Station CCR Unit – East Landfill

Determination of Statistically Significant Increases over Background per 257.93(h)(2)

The U.S. Environmental Protection Agency's (EPA's) final Coal Combustion Residuals (CCR) Rule establishes a comprehensive set of requirements for the management and disposal of CCR (or coal ash) in landfills and surface impoundments by electric utilities. Pawnee Station, located in Morgan County, Colorado constructed the East CCR Landfill in 2018 with CCR compliant composite liner and leachate collection systems. Ash was first placed in the East CCR Landfill in July 2019 and the first detection monitoring was initiated within six months after the first placement of CCR in this new unit. The landfill was constructed within the footprint of a former CCR impoundment. The CCR impoundment had been constructed with a composite liner system in the 1980's and was classified as an inactive impoundment under the 2015 CCR Rule. It was physically closed in 2017 by removal of all CCR under the Direct Final Rule (Extension Rule effective October 4, 2016).

The objective of this memorandum is to document the identification of statistically significant increases (SSIs) over background water quality at the East CCR Landfill at Pawnee. Groundwater monitoring has been conducted to collect eight rounds of background sampling plus the first detection monitoring event as specified under CCR Rule Part 257.94. The water quality collected from the monitoring well located upgradient of the CCR units has been compiled and statistically analyzed to develop background threshold values (BTVs) for each constituent of interest (COI) for this CCR unit. The Background Water Quality Statistical Certification (HDR 2018) documents the background sample events and describes the data evaluation performed to select the appropriate statistical method for each COI in the background data. The downgradient monitoring well data from the first detection monitoring event were compared against the BTVs and SSIs were identified.

As stipulated in the CCR Rule, eight background groundwater sampling events were completed between June 2018 and January 2019. Groundwater monitoring occurs at one upgradient well (PNMW-17) and three downgradient wells associated with the East CCR Landfill: PNMW-21, PNMW-22, and PNMW-23. Background groundwater samples were analyzed for all of the parameters in Appendices III and IV of CCR Rule Part 257. Background sampling is described in detail in the Background Water Quality Statistical Certification (HDR 2018). The East CCR Landfill did not take its first receipt of ash until July 2019. Therefore, the first detection monitoring event was required within six months of that time. The first detection monitoring event was conducted on November 5-6, 2019 and groundwater samples were analyzed for all of the parameters in Appendix

III of CCR Rule Part 257. The downgradient monitoring well data from the detection monitoring event were compared against the BTVs and SSIs were identified, as described below. The annual report will include all laboratory data for the reporting period and a description of the detection monitoring activities.

SSI Determination

The concentrations of Appendix III COIs from each downgradient monitoring well at the East CCR Landfill were compared against the BTVs and the COIs with SSIs are listed below.

MW-21	Total dissolved solids (TDS)
MW-22	Sulfate, TDS
MW-23	Sulfate, TDS

The identification of SSIs begins the process of further investigation at the East CCR Landfill. Within 90 days of this SSI determination Public Service Company of Colorado will either sample and analyze for Appendix IV constituents under an assessment monitoring program or document that the SSI resulted from an alternative source, an error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

References

HDR, 2018. Pawnee Station Background Water Quality Statistical Certification for Compliance with the Coal Combustion Residuals Rule, Pawnee Station East Landfill. October 29, 2018.