

Pawnee Station 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 one CCR unit on site, a landfill that is used for final disposal of CCRs generated at Pawnee Station. The CCR landfill has remaining capacity to receive CCRs from plant operations through approximately early 2019, after which it will be closed with installation of a final cover that is compliant with 257.102(d) and State of Colorado solid waste regulations, and as described in the Written Closure Plan (HDR, 2016).

Protecting the environment is a core value for Xcel Energy

PSCo 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, PSCo 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. The 2017 Annual Groundwater Monitoring Report for Pawnee Station documents monitoring activities through 2017 and will be available on the CCR website, no later than March 2, at xcelenergy.com (under Environment, under Responsible Operations, Coal Ash Management.)

As a next step, and pursuant to 257.94(e)(2), PSCo 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: Monday, January 15, 2018

To: Jennifer McCarter, Public Service Company of Colorado

From: Matt Rohr, HDR, Inc.

Subject: Pawnee Station CCR Unit

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 has one active CCR unit, a landfill subject to the CCR Rule. The CCR units operation and monitoring are described further in the Pawnee Station Groundwater Monitoring System Certification (HDR 2017).

The objective of this memorandum is to document the identification of statistically significant increases (SSIs) over background water quality at the CCR North Landfill at Pawnee. Groundwater monitoring has been conducted to collect eight rounds of background sampling plus the first detection monitoring event (completed before October 17, 2017) as specified under CCR Rule Part 257.94. The water quality collected from the monitoring wells located upgradient of the CCR units has been compiled and statistically analyzed to develop background threshold values (BTVs) for each constituent of interest (COI). 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 in the background data. The first detection monitoring event was conducted in October 2017. The downgradient monitoring well data were compared against the BTVs and SSIs were identified.

Hydrogeologic characterization of the site is provided in the Pawnee Station Groundwater Monitoring System Certification (HDR 2017). Groundwater monitoring occurs at six wells around the CCR landfill: PNMW-2B, PNMW-13, and PNMW-14 are background wells; and wells PNMW-1B, PNMW-15, and PNMW-16 are monitored for comparison against background water quality.

As stipulated in the CCR Rule, eight background groundwater sampling events were completed on a monthly basis between February 2017 and September 2017. 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 first detection monitoring event was conducted on October 10-11, 2017. Detection monitoring groundwater samples were analyzed for all of the parameters in Appendix III of CCR Rule Part 257. The detection monitoring event will be described in detail in

the first Annual Groundwater Monitoring and Corrective Action Report due January 31, 2018. The annual report will include all laboratory data for the reporting period.

SSI Determination

Groundwater sampling for detection monitoring was analyzed for the CCR Rule Appendix III COIs. All of the six monitoring wells were sampled.

The concentration of Appendix III COIs from each downgradient monitoring well were compared against the BTVs. Wells MW-15 and MW-16 were observed to have SSIs for the following COIs:

- Boron
- Calcium
- pH
- Sulfate
- Total Dissolved Solids

In addition MW-1B has an SSI for chloride, sulfate and TDS.

The identification of SSIs begins the process of further investigation at Pawnee. Within 90 days of triggering an assessment monitoring program 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, 2017. Groundwater Monitoring System Certification - Compliance with the Coal Combustion Residuals Rule Pawnee Station. September, 2017.

HDR, 2018. Pawnee Background Water Quality Statistical Certification for Compliance with the Coal Combustion Residuals Rule. January 12, 2018.