



October 15, 2018

Tennessee Valley Authority
1101 Market Street
Chattanooga, Tennessee 37402

**Engineer's Certification of Placement above the Upper Most Aquifer
Gypsum Disposal Area, Gypsum Disposal Area Stilling Pond 1 and Gypsum Disposal Area Stilling
Pond 2
EPA Final CCR Rule
TVA Paradise Fossil Plant
Drakesboro, Kentucky**

1.0 PURPOSE

This letter documents AECOM's certification of the placement above the uppermost aquifer for the TVA Paradise Fossil Plant's existing surface impoundments Gypsum Disposal Area, Gypsum Disposal Area Stilling Pond 1 and Gypsum Disposal Area Stilling Pond 2 (collectively referred to herein as the Gypsum Disposal Area).

2.0 BACKGROUND

As required by 40 CFR § 257.60(c)(1), within 42 months of the published date, TVA must prepare a demonstration that the CCR unit is constructed no less than 1.52 meters (five feet) above the upper limit of the uppermost aquifer, or will be subject to the requirements of § 257.101(b)(1).

3.0 SUMMARY OF FINDINGS

Historical coal surface mining operations removed much of the geologic formations above the target coal seams (#11 and #9 coal seams) at PAF. Hydrogeologic investigations and subsequent well network optimization were conducted at PAF to identify the most appropriate geologic unit to designate as the uppermost aquifer for the purposing of groundwater monitoring requirements of the CCR Rule. Groundwater was encountered in a variety of materials at the Site, including mine spoils, alluvial materials, and within the bedrock in limited primary porosity, limited secondary porosity, and isolated mined coal zones. None of the explored materials yielded water of sufficient quantity or quality so as to qualify as a high-value aquifer, but at each CCR unit, the available data were used to identify a water bearing zone that was the most productive (i.e. the highest hydraulic conductivity) and most laterally connected (i.e. providing a continuum of flow from upgradient to downgradient relative to the CCR unit), and had the greatest potential to transport groundwater (and potential impact) from the CCR unit vicinity toward other water bodies.

At the Gypsum Disposal Area, the uppermost water bearing unit which is being monitored as the uppermost aquifer by the groundwater monitoring well network under the CCR Rule is the mine spoils. This mine spoil unit has generally poor quality, inconsistent yield, and is not currently being utilized as a groundwater source in the area. AECOM compared the water levels in the uppermost aquifer to the affected boundary (i.e., the lowest elevations of the CCR material). Based on this comparison, the Gypsum Disposal Area does not meet the 5-foot separation requirement required by § 257.60 of the EPA Final CCR Rule and will close in accordance with § 257.101(b)(1)(i).



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4.0 Qualified Professional Engineer Certification

I, Nicholas Golden, being a Professional Engineer in good standing in the State of Kentucky, do hereby certify, to the best of my knowledge, information, and belief that the information contained in this certification has been prepared in accordance with generally accepted engineering practices; that the information contained herein is accurate as of the date of my signature below; and that the Gypsum Disposal Area, Gypsum Disposal Area Stilling Pond 1, and Gypsum Disposal Area Stilling Pond 2 do not meet the placement above the uppermost aquifer requirements of 40 CFR § 257.60.

SIGNATURE  _____

DATE 10/15/18

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