

October 16, 2017

Tennessee Valley Authority
1101 Market Street
Chattanooga, Tennessee 37402

**Groundwater Monitoring System
Peabody Ash Pond
TVA Paradise Fossil Plant
Muhlenberg County, Kentucky**

1.0 Introduction

This letter documents AECOM's certification of the groundwater monitoring system for the Tennessee Valley Authority (TVA) Paradise Fossil Plant Peabody Ash Pond coal combustion residuals (CCR) unit. Based on the information compiled by AECOM, the groundwater monitoring system, first year baseline monitoring phase of TVA's CCR-Rule Groundwater Quality Monitoring Program, meets the performance standard specified in the Final CCR Rule at 40 CFR § 257.91.

2.0 Summary of Findings

In establishing the groundwater monitoring system for the Peabody Ash Pond at the Paradise Fossil Plant in Muhlenberg County, Kentucky, AECOM developed a hydrogeologic characterization of the site, designed and reviewed the installation of the monitoring wells, and evaluated available groundwater data. Based upon review of the available information, the groundwater monitoring system at the Peabody Ash Pond meets the performance standard specified in 40 CFR § 257.91, based on the following criteria:

- There are a sufficient number of wells installed at appropriate locations and depths to yield groundwater samples that accurately represent the quality of background groundwater unaffected by CCR and the quality of groundwater at the downgradient waste boundary (257.91(a)(1) and (2)).
- The wells provide samples from the uppermost aquifer (257.91(a) and 257.53).
- The groundwater monitoring system contains four background and six downgradient monitoring wells, thus the number of wells in the system exceeds the minimum specified in 257.91(c)(1).
- The system contains one background well (95-48A) representing conditions unaffected by CCR, and three upgradient wells (10-5, PAF-105, PAF-106) (257.91(a)(1) and (c)(1)).
- The system contains six downgradient wells (10-4, 10-6, PAF-107, PAF-117, PAF-118, PAF-119) monitoring groundwater near the waste boundary (257.91(a)(2) and (c)(1)).

- The system includes additional wells beyond the minimum requirements as needed to meet the performance standard (257.91(c)(2)).
- Wells are constructed appropriately (257.91(e)).

3.0 Qualified Professional Engineer Certification

I, Nicholas Golden, being a Registered 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 is prepared in accordance with the accepted practice of engineering; that the information contained herein is accurate as of the date of my signature below; and that the design and construction of the groundwater monitoring system as described above meets the requirements of 40 CFR § 257.91. Opinions relating to environmental, geologic, and hydrogeologic conditions or other estimates are based on available data; actual conditions may vary from those encountered at the times and locations where data are obtained, despite the use of due care.

SIGNATURE: 

DATE: 10/16/17

PRINTED NAME: Nicholas Golden, PE

ADDRESS: AECOM
564 White Pond Drive
Akron, OH 44320

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Attachments:
CCR Rule Monitoring System Plan
Table 1 – Well Construction Information

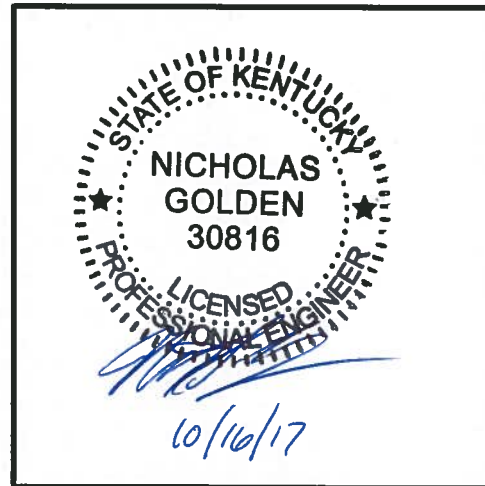


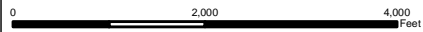


FIGURE:

1

CCR Rule Monitoring System Plan
 Peabody Ash Pond
 Paradise Fossil Plant
 Tennessee Valley Authority

DATE:	DRAWN BY:	PROJECT NUMBER:
10/12/2017	TEG	60439352



Legend

- CCR Rule Monitoring System Wells
- TVA PAF Property Boundary

AECOM ENVIRONMENT
 800 ENTERPRISE DRIVE, SUITE 1A
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Table 1
WELL CONSTRUCTION INFORMATION
CCR RULE GROUNDWATER MONITORING SYSTEM
PEABODY ASH POND
TVA PARADISE FOSSIL PLANT

Well ID	UNID#	Position Relative to CCR Unit	Top of Casing Elevation	Ground Surface Elevation	Screened Interval (ft btoc)	Screened Formation	Well Depth (ft btoc)	Pump Intake Set Depth (ft btoc)	Well Diameter (in) / Material	Well Coordinates	
										KY South State Plane Northing NAD 27 (ft)	KY South State Plane Easting NAD 27 (ft)
95-48A	PAF-00-GW-43-017	Background	450.91	449.7	12.5 - 22.5	Mine Spoils / Shale	22.5	19.5	2-in PVC	339018.37	1638241.96
10-4	PAF-00-GW-43-002	Downgradient	417.00	413.8	32.4 - 42.6	Alluvium and Shale	42.7	41	2-in PVC	334476.99	1643271.81
10-5	PAF-00-GW-43-003	Upgradient	439.59	436.4	16.7 - 26.8	Mine Spoils	26.9	26	2-in PVC	332966.79	1639927.71
10-6	PAF-00-GW-43-004	Downgradient	403.17	399.7	19.0 - 23.8	Alluvium	23.8	22	2-in PVC	331777.21	1641914.26
PAF-105	PAF-00-GW-43-026	Upgradient	413.28	409.3	35.2 - 45.2	Mine Spoils	45.4	43.5	4-in PVC	331647.14	1640157.89
PAF-106	PAF-00-GW-43-027	Upgradient	427.77	424.3	17.4 - 27.4	Mine Spoils	27.4	25.5	4-in PVC	334578.80	1640776.67
PAF-107	PAF-00-GW-43-028	Downgradient	406.49	406.9	51.5 - 61.5	Mine Spoils	61.5	59.5	4-in PVC	333760.71	1642832.15
PAF-117	PAF-00-GW-43-037	Downgradient	412.15	408.4	44.0 - 54.3	Shale	54.4	51.5	4-in PVC	333034.90	1642724.01
PAF-118	PAF-00-GW-43-038	Downgradient	412.34	408.6	54.0 - 64.2	Shale	64.3	62	4-in PVC	332553.16	1642235.51
PAF-119	PAF-00-GW-43-039	Downgradient	410.02	406.3	59.6 - 69.9	Alluvium / Shale	69.9	68.5	4-in PVC	331805.67	1641114.49

Well information based on data provided by TVA Well Inventory, October 1, 2017.

Screened Formation based on data provided in boring logs.

ft btoc - feet below top of casing

Elevation in National Geodetic Vertical Datum 1929