

October 16, 2017

Tennessee Valley Authority  
1101 Market Street  
Chattanooga, Tennessee 37402

**Groundwater Monitoring System  
Ash Pond 2 (Main Ash Pond/Stilling Pond) and Consolidated Waste Dry Stack Multiunit  
TVA Shawnee Fossil Plant  
West Paducah, Kentucky**

**1.0 Introduction**

This letter documents AECOM's certification of the groundwater monitoring system for the Tennessee Valley Authority (TVA) Shawnee Fossil Plant Multiunit monitoring system. The Multiunit includes coal combustion residual (CCR) units Ash Pond 2 (Main Ash Pond/Stilling Pond) and Consolidated Waste Dry Stack. Based on the information compiled by AECOM, the groundwater monitoring system, first year baseline monitoring phase of TVA's Coal Combustion Residuals (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 Ash Pond 2 (Main Ash Pond/Stilling Pond) and Consolidated Waste Dry Stack at the Shawnee Fossil Plant in West Paducah, 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 Ash Pond 2 (Main Ash Pond/Stilling Pond) and Consolidated Waste Dry Stack meets the performance standard specified in 40 CFR § 257.91, based on the following criteria:

- The Ash Pond 2 (Main Ash Pond/Stilling Pond) and Consolidated Waste Dry Stack are monitored as a single multiunit groundwater monitoring system, in accordance with 40 CFR § 257.91(d).
- 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 one upgradient and four downgradient monitoring wells, thus the number of wells in the system exceeds the minimum specified in 257.91(c)(1).
- The system contains one upgradient well (SHF-102G) representing conditions unaffected by CCR (257.91(a)(1) and (c)(1)).
- The system contains four downgradient wells (D-11B, D-30B, D-74B, and SHF-101G) 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: 

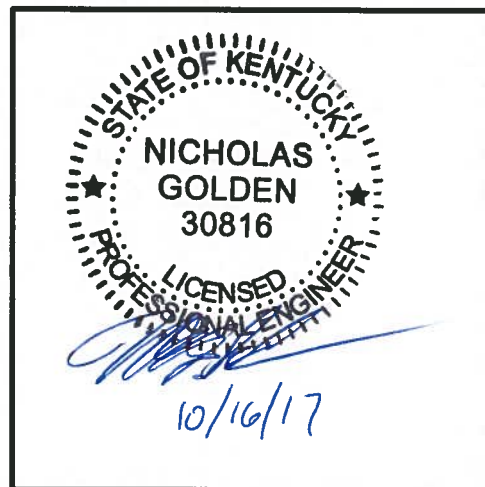
DATE: 10/16/17

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





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FIGURE:

1

CCR Rule Monitoring System Plan  
 Ash Pond 2 (Main Ash Pond/Stilling Pond) and Consolidated  
 Waste Dry Stack Multiunit  
 Shawnee Fossil Plant Tennessee Valley Authority

0 3,000 6,000 Feet



Legend

- CCR Rule Monitoring System Wells
- TVA Shawnee Property Boundary

DATE: 10/12/2017	DRAWN BY: TEG	PROJECT NUMBER:			
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**Table 1**  
**WELL CONSTRUCTION INFORMATION**  
**CCR RULE GROUNDWATER MONITORING SYSTEM**  
**ASH POND 2 (MAIN ASH POND/STILLING POND) AND CONSOLIDATED WASTE DRY STACK MULTIUNIT**  
**TVA SHAWNEE FOSSIL PLANT**

Well ID	UNID#	Position Relative to CCR Unit	Top of Casing Elevation	Ground Elevation	Screened Interval (ft btoc)	Screened Formation	Well Depth (ft btoc)	Pump Intake 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)
D-11B	SHF-00-GW-43-005	Downgradient	321.90	318.7	34.5 - 44.4	Regional Gravel Aquifer	44.9	40	2-in PVC	318037.42	1113012.16
D-30B	SHF-00-GW-43-012	Downgradient	324.36	320.6	42.2 - 52.2	Regional Gravel Aquifer	52.7	48	2-in PVC	315120.01	1117171.63
D-74B	SHF-00-GW-43-015	Downgradient	332.16	328.8	41.8 - 51.8	Regional Gravel Aquifer	52.3	47	2-in PVC	316046.68	1115702.69
SHF-101G	SHF-00-GW-43-021	Downgradient	322.43	318.8	32.0 - 37.3	Regional Gravel Aquifer	37.6	35	4-in PVC	317190.92	1114262.71
SHF-102G	SHF-00-GW-43-022	Upgradient	362.48	359.6	50.0 - 59.7	Regional Gravel Aquifer	60.5	55	4-in PVC	311938.04	1112181.50

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.