



Stantec.  
3052 Beaumont Centre Circle, Lexington, Kentucky 40513 - 1703

April 17, 2019

Tennessee Valley Authority  
1101 Market Street  
Chattanooga, Tennessee 27402

**Reference: Groundwater Monitoring System  
Bottom Ash Pond  
TVA John Sevier Fossil Plant  
Rogersville, Tennessee**

## 1.0 INTRODUCTION

This letter documents Stantec Consulting Services Inc. (Stantec) certification of the groundwater monitoring system for the Tennessee Valley Authority (TVA) John Sevier Fossil Plant coal combustion residual (CCR) facility Bottom Ash Pond. The Bottom Ash Pond is an inactive CCR surface impoundment under the CCR Rule (i.e., a vacatur unit) and is subject to the deadlines set forth in 40 CFR 257.100. Based on the information evaluated by Stantec, the groundwater monitoring system, 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 Bottom Ash Pond at the John Sevier Fossil Plant in Rogersville, Tennessee, Stantec evaluated available groundwater data, developed a hydrogeologic investigation and characterization of the site, and designed and reviewed the installation of the monitoring wells. Based upon review of the available information, the groundwater monitoring system at the Bottom 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 three background monitoring wells and eight downgradient monitoring wells, thus the number of wells in the system exceeds the minimum specified in 257.91 (c)(1).
- The system contains three background wells (JSF-104, JSF-200 and JSF-205) representing conditions unaffected by CCR (257.91(a)(1) and (c)(1)).
- The system contains eight wells located downgradient (JSF-103, JSF-105, 10-36, W-32, JSF-201, JSF-202, JSF-203 and JSF-204) to monitor groundwater near the waste boundary (257.91(a)(2) and (c)(1)).
- The system includes additional wells as needed to meet the performance standard (257.91(c)(2)).
- Wells are constructed appropriately (257.91(e)).

Reference: **Groundwater Monitoring System Bottom Ash Pond TVA John Sevier Fossil Plant Rogersville, Tennessee**

### 3.0 QUALIFIED PROFESSIONAL ENGINEER CEERTIFICATION

I, Stephen Bickel being a Registered Professional Engineer in good standing in the State of Tennessee 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 and that actual conditions may vary from those encountered at the times and locations where data are obtained, despite the use of due care.



Signature

17 APRIL 2019

Date

Printed Name: Stephen Bickel

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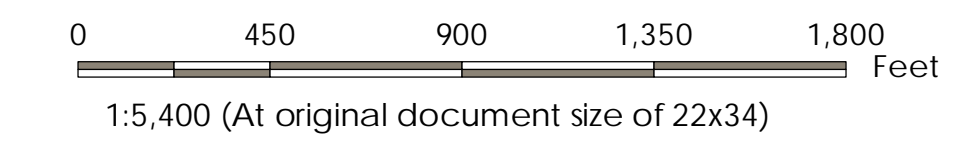




Figure No.  
1  
Title  
CCR Rule Monitoring System Plan,  
Bottom Ash Pond

Client/Project  
Tennessee Valley Authority  
John Sevier Fossil Plant

Project Location  
Rogersville, Tennessee  
182603368  
Prepared by DMB on 2019-04-17  
Technical Review by LP on 2019-04-17



**Legend**

- Existing Bedrock Groundwater Monitoring Well
- Existing Groundwater Monitoring Well
- TVA Property Boundary
- CCR Unit Area (Approximate)

**Notes**

1. Coordinate System: NAD 1983 StatePlane Tennessee FIPS 4100 Feet
2. Imagery Provided by Tuck Mapping (2017-03-08)



**TABLE 1**  
**TVA John Sevier Fossil Plant - Bottom Ash Pond**  
**Well Construction Information**  
**CCR Rule Groundwater Monitoring System**

Well ID	UNID#	Position Relative to CCR Unit	Top of Casing Elevation (ft NGVD 29)	Ground Surface Elevation (ft NGVD 29)	Screened Interval (ft btoc)	Screened Formation	Total Well Depth (ft btoc)	Pump Intake Set Depth (ft btoc)	Well Inside Diameter (in)	Well Coordinates	
										TN State Plane Northing NAD 27 (ft)	TN State Plane Easting NAD 27 (ft)
W-32	JSF-00-GW-43-005	Downgradient	1105.12	1101.2	15.1 - 25.0	Overburden	27.1	25	2.0	734,072.67	2,889,541.80
10-36	JSF-00-GW-43-006	Downgradient	1120.38	1116.5	12.7 - 22.5	Overburden	23.1	21	2.0	734,301.94	2,892,802.65
JSF-103	JSF-00-GW-43-013	Downgradient	1126.73	1122.8	13.6 - 23.7	Overburden	23.7	22	4.0	734,153.67	2,893,755.99
JSF-104	JSF-00-GW-43-014	Background	1145.69	1141.9	20.4 - 30.6	Overburden	31.0	29	4.0	733,240.19	2,892,583.71
JSF-105	JSF-00-GW-43-015	Downgradient	1121.11	1117.3	11.2 - 21.3	Overburden	21.8	20	4.0	734,165.34	2,891,021.79
JSF-200	JSF-00-GW-43-016	Background	1146.51	1142.9	29.6 - 39.6	Bedrock	40.1	34.5	4.0	733,226.64	2,892,576.23
JSF-201	JSF-00-GW-43-017	Downgradient	1121.17	1117.6	31.1 - 41.1	Bedrock	41.6	36.0	4.0	734,164.70	2,891,004.23
JSF-202	JSF-00-GW-43-018	Downgradient	1120.73	1117.1	23.6 - 33.6	Bedrock	34.1	28.0	4.0	734,298.09	2,892,822.27
JSF-203	JSF-00-GW-43-019	Downgradient	1124.14	1120.8	29.3 - 39.3	Bedrock	39.8	34.0	4.0	734,210.25	2,891,769.00
JSF-204	JSF-00-GW-43-020	Downgradient	1118.13	1114.5	26.1 - 36.1	Bedrock	36.6	30.5	4.0	734,085.97	2,890,174.44
JSF-205	JSF-00-GW-43-021	Background	1136.23	1132.7	29.5 - 39.5	Bedrock	40.0	34.5	4.0	732,651.48	2,890,410.54

Well information based on data provided by TVA Well Inventory dated April 8, 2019.

Abbreviations:

- ft        feet
- ft btoc    feet below top of casing
- ft NGVD 29    feet National Geodetic Vertical Datum 1929
- in        inches
- NAD 27    North America Datum 1927