

October 16, 2017

Tennessee Valley Authority
1101 Market Street
Chattanooga, Tennessee 37402

**Groundwater Monitoring System
Multiunit
TVA Cumberland Fossil Plant
Cumberland City, Tennessee**

1.0 Introduction

This letter documents AECOM's certification of the groundwater monitoring system for the Tennessee Valley Authority (TVA) Cumberland Fossil Plant Multiunit which includes coal combustion residual (CCR) facilities Bottom Ash Pond, Gypsum Storage Area, and Dry Ash Stack. Based on the information evaluated 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 Multiunit at the Cumberland Fossil Plant in Cumberland City, Tennessee, AECOM 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 Multiunit 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 represents 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 two background monitoring wells and five monitoring wells downgradient, thus the number of wells in the system exceeds the minimum specified in 257.91(c)(1).
- The system contains two background wells (CUF-201, CUF-202) representing conditions unaffected by CCR (257.91(a)(1) and (c)(1)).

- The system contains five wells located downgradient (93-2R, 93-3, CUF-209, CUF-211, CUF-212) to monitor groundwater near the waste boundary (257.91(a)(2) and (c)(1)).
- The groundwater monitoring system is equally capable of detecting monitored constituents at the waste boundary of each CCR unit in the multiunit system (257.91(d)).
- The system includes additional wells 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, Michael L. Wall 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: Michael Wall

DATE 10-16-2017

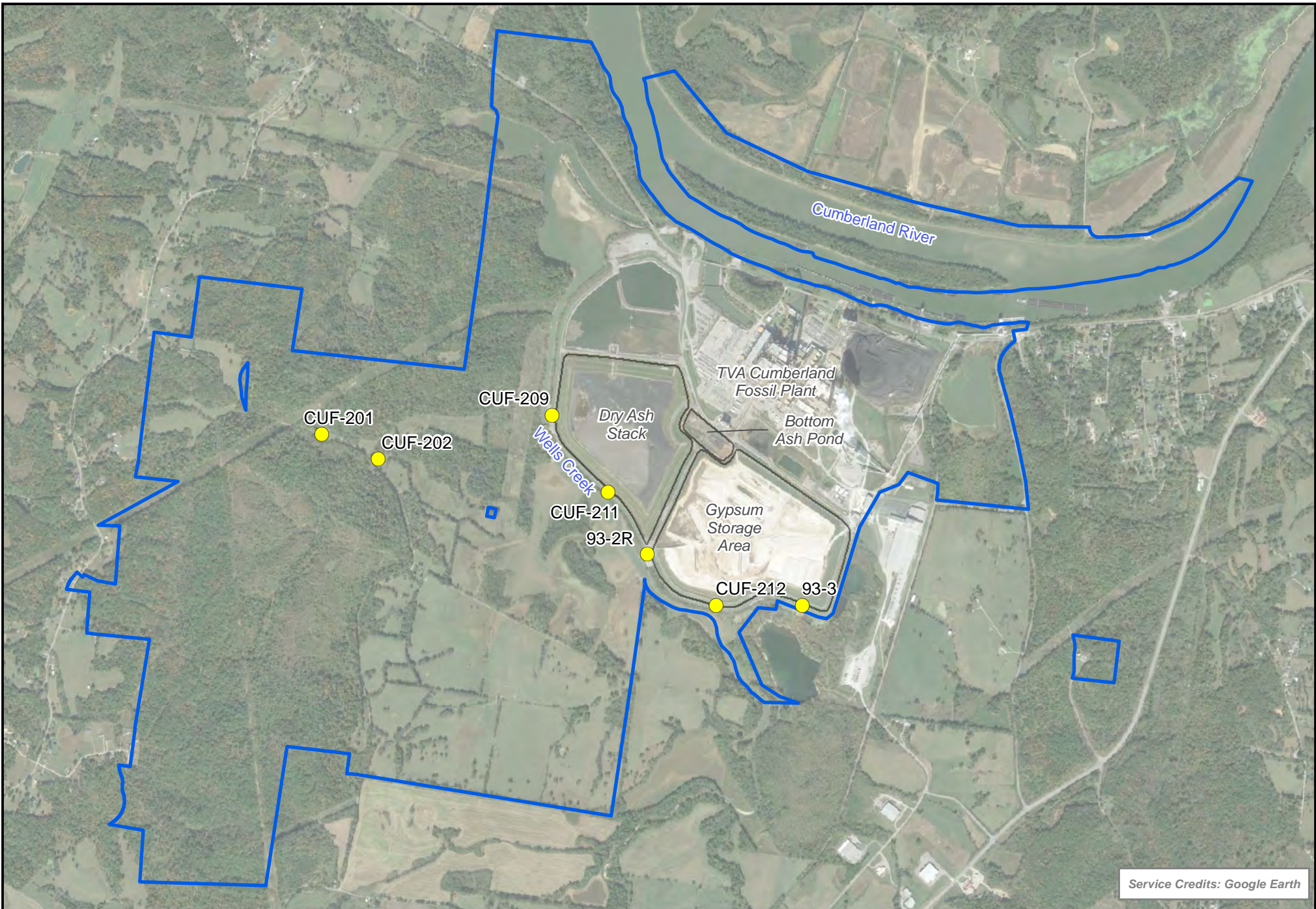
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Attachments: CCR Rule Monitoring System Plan
Table 1 –Well Construction Information



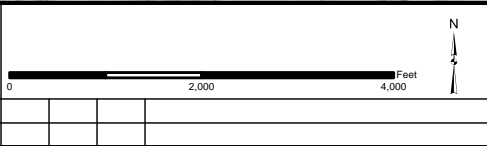


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FIGURE:
1

CCR Rule Monitoring System Plan
Multiunit (Dry Ash Stack, Gypsum
Storage Area, Bottom Ash Pond)
Cumberland Fossil Plant
Tennessee Valley Authority

DATE: 10/4/2017	DRAWN BY: TEG	PROJECT NUMBER: 60439352
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Legend

- CCR Rule Monitoring Wells
- TVA CUF Property Boundary

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Table 1
WELL CONSTRUCTION INFORMATION
CCR RULE GROUNDWATER MONITORING SYSTEM
MULTIUNIT (BOTTOM ASH POND, GYPSUM STORAGE AREA, DRY ASH STACK)
TVA CUMBERLAND FOSSIL PLANT

Well ID	UNID #	Position Relative to CCR Unit	Top of Casing Elevation (ft)	Ground Elevation (ft)	Screened Interval (ft btoc)	Screened Formation	Total Well Depth (ft btoc)	Pump Intake Depth (ft btoc)	Well Diameter (in) / Material	Well Co-ordinates	
										TN State Plane NAD27 Northing (ft)	TN State Plane NAD27 Easting (ft)
93-2R	CUF-00-GW-43-002	Downgradient	397.88	395.3	62.3 - 72.0	Alluvial Deposits	72.8	71	2-in / PVC	728859.59	1510842.10
93-3	CUF-00-GW-43-003	Downgradient	397.50	395.2	45.0 - 55.0	Alluvial Deposits	55.1	53	2-in / PVC	728035.37	1513325.36
CUF-201	CUF-00-GW-43-011	Background	400.41	396.7	17.6 - 27.7	Alluvial Deposits	28.1	26	2-in / PVC	730765.35	1505625.26
CUF-202	CUF-00-GW-43-012	Background	383.28	379.5	14.3 - 19.6	Alluvial Deposits	19.9	18	2-in / PVC	730347.74	1506636.70
CUF-209	CUF-00-GW-43-018	Downgradient	398.23	394.5	53.1 - 63.3	Alluvial Deposits	63.8	62	2-in / PVC	731074.78	1509317.09
CUF-211	CUF-00-GW-43-020	Downgradient	398.76	395.0	57.7 - 67.9	Alluvial Deposits	68.6	67	2-in / PVC	729830.15	1510203.78
CUF-212	CUF-00-GW-43-021	Downgradient	398.71	395.0	62.6 - 72.8	Alluvial Deposits	73.2	71	2-in / PVC	728016.94	1511935.77

Well construction and survey information based on data provided by TVA Well Inventory, October 1, 2017.
Elevation in National Geodetic Vertical Datum 1929.
ft btoc - feet below top of casing