

Bull Run Fossil Plant



CLINTON, TENNESSEE



QUICK FACTS



EPA CCR Rule Groundwater Monitoring for 2019-2020

This fact sheet summarizes groundwater monitoring conducted by TVA for the Bull Run Fossil Plant, as required by the U.S. Environmental Protection Agency (EPA) Coal Combustion Residuals (CCR) Rule for the 2019-2020 annual reporting period. The EPA published the CCR Rule on April 17, 2015. It requires companies operating coal-fired power plants to study whether constituents in CCR have been released to groundwater from active, inactive and new CCR impoundments, as well as active and new CCR landfills. In accordance with CCR Rule revisions effective on October 4, 2016, inactive units previously exempted from the requirements for a groundwater monitoring program were required to complete initial annual groundwater monitoring and corrective action reports by August 1, 2019.

The CCR Rule establishes multiple phases of protective groundwater monitoring including baseline sampling, Detection Monitoring and Assessment Monitoring. Corrective action may be necessary at the completion of this process. For more information on the CCR Rule Groundwater Monitoring requirements, refer to the Executive Summary that can be found by clicking on the following hyperlink www.tva.com/ccr.

Bull Run Plant CCR Rule Groundwater Monitoring Network for Vacatur Units

In addition to ongoing groundwater monitoring required under State regulations, TVA established a monitoring well network for the previously excluded Fly Ash Stilling Pond 2C and Sluice Channel and the Main Ash Pond CCR Units consisting of “background” or upgradient, wells in locations that were not expected to be affected by the management of CCR and wells around the edge of the areas where CCR is managed. These wells are sometimes referred to as “downgradient wells” and placed in locations to monitor for releases to groundwater. This CCR Rule groundwater monitoring well network is monitored in accordance with the CCR Rule. The locations of the wells are shown on the figure on the next page.

Commissioning Date: 1967

Output: 881 Megawatts
(6 Billion kilowatt-hours per year)

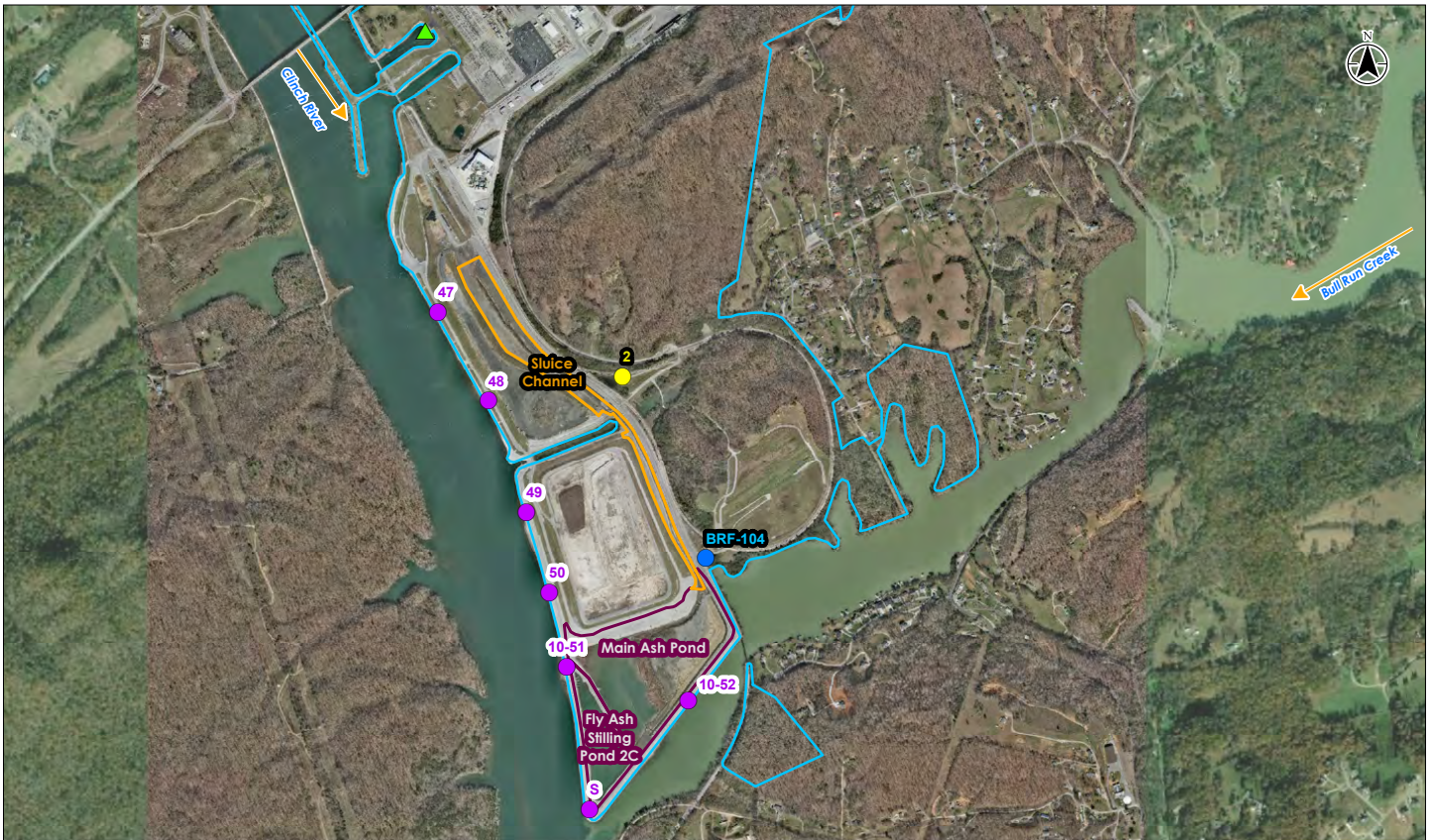
Number of homes powered:
Approximately 400,000 homes

Main outputs: Power and fly ash
(used as a concrete additive)

Wet to Dry / Dewatered Conversion Program: Complete for fly ash, bottom ash, and gypsum

CCR Units Closed: 82 acres

TVA Wide CCR Conversion Program Total Spend:
Approximately \$1.3 Billion



CCR Rule Detection Monitoring Results for Bull Run Plant Vacatur Sites

Since the initial groundwater monitoring results identified statistically significant increases (SSIs) of Appendix III constituents above background levels in Detection Monitoring for the Fly Ash Stilling Pond 2C and Sluice Channel and Main Ash Pond, TVA conducted an alternate source demonstration (ASD) to determine if the exceedances were the result of another source or the result of an error in the sampling or analytical method, or natural variability in groundwater quality. As a result of the ASD, TVA was unable to establish that the SSIs were the result of another source or the result of an error. An assessment monitoring program was established on January 13, 2020 and an evaluation of whether there were statistically significant levels (SSLs) of Appendix IV constituents above groundwater protection standards (GWPS) was completed.

During the 2020-2021 annual reporting period, an ASD for Appendix IV constituents will be performed. If the ASD is unable to determine if the SSLs are a result of another source or the result of an error, then an Assessment of Corrective Measures will be initiated for this unit.

Bull Run Fossil Plant CCR Rule Assessment Monitoring Results for Vacatur Units

The Assessment Monitoring results are contained in the **Annual Groundwater Monitoring and Corrective Action Reports for 2019-2020***. The reports can be found on the CCR Rule website at www.tva.com/ccr.

For the initial assessment monitoring, SSLs above the GWPS were identified for arsenic in well BRF-10-52; for lithium in well BRF-47 and cobalt in well BRF-48; and for arsenic, cobalt, lithium and molybdenum in well BRF-49.

*The results in this report reflect quality of groundwater beneath the CCR unit and are not necessarily an indication of impacts beyond TVA property. Local utilities are required to test public drinking water supplies to ensure that they are safe for consumption. Monitoring data consistently shows that surface water quality is not being adversely impacted by TVA's operations of its coal plants, including ash management practices.

The following table shows the reported statistical exceedances of GWPS, as reflected by the red dots. Out of the eight wells sampled three wells contain SSLs for a single constituent (arsenic, cobalt, or lithium). One well (BRF-49) has exceedances for arsenic, cobalt, lithium and molybdenum. Refer to Appendix A- Statistical Analysis Report of the 2020 Annual Groundwater Monitoring and Corrective Actions Reports for more information.

2020		GROUNDWATER QUALITY MONITORING WELL LOCATIONS							
		Background Wells	CCR Vacatur Unit						
Constituent	GWPS mg/L	BRF-2	BRF-47	BRF-48	BRF-49	BRF-50	BRF-10-51	BRF-10-52	BRF-S
Antimony	0.006	●	●	●	●	●	●	●	●
Arsenic	0.01	●	●	●	●	●	●	●	●
Barium	2	●	●	●	●	●	●	●	●
Beryllium	0.004	●	●	●	●	●	●	●	●
Cadmium	0.005	●	●	●	●	●	●	●	●
Chromium	0.1	●	●	●	●	●	●	●	●
Cobalt	0.006	●	●	●	●	●	●	●	●
Fluoride	4	●	●	●	●	●	●	●	●
Lead	0.015	●	●	●	●	●	●	●	●
Lithium	0.04	●	●	●	●	●	●	●	●
Mercury	0.002	●	●	●	●	●	●	●	●
Molybdenum	0.1	●	●	●	●	●	●	●	●
Rad226+228	5 pCi/L	●	●	●	●	●	●	●	●
Selenium	0.05	●	●	●	●	●	●	●	●
Thallium	0.002	●	●	●	●	●	●	●	●

Color Coding Key

- Monitoring data results are below groundwater protection standards (GWPS)
- Monitoring data results are below GWPS, but results are 65% or more of the GWPS
- Monitoring data results exceed GWPS

Next Steps for Bull Run Fossil Plant CCR Rule Groundwater Monitoring

During the 2020-2021 annual reporting period, an alternate source demonstration (ASD) for Appendix IV constituents will be performed to evaluate the SSLs over groundwater protection standards. If the ASD is unable to establish that the SSLs were the result of another source or the result of an error, then an Assessment of Corrective Measures will be initiated. TVA will continue to monitor and evaluate groundwater at the Bull Run Fossil Plant for the Fly Ash Stilling Pond 2C and Sluice Channel and Main Ash Pond CCR Vacatur Units.

In addition, the Bull Run Plan has another CCR unit under groundwater monitoring, the Dry Fly Ash Stack Lateral Expansion Unit. Since the initial groundwater monitoring results identified statistically significant increases (SSIs) over background levels, TVA conducted an alternate source demonstration to determine if the exceedances were the result of another source or the result of an error in the sampling or analytical method, or natural variability in groundwater quality. As a result of the successful demonstration, the CCR unit remains in Detection Monitoring. The Detection Monitoring results are contained in the **2019 Annual Groundwater Monitoring and Corrective Action Report**^{*}. The report can be found on the CCR Rule website at www.tva.com/ccr.