



# Coal Combustion Residuals Groundwater Program

## *RCRA Subtitle D Groundwater Monitoring Support for Electric Utilities*

*Programmatic support helps you become and stay compliant.*

On April 17, 2015, U.S. EPA published the final rule on the Disposal of Coal Combustion Residuals (CCR) for Electric Utilities, establishing the nationally applicable criteria for the safe disposal of CCR and defines groundwater monitoring requirements in landfills and surface impoundments. The rule requires CCR landfills and surface impoundments to be regulated as solid waste landfills (non-hazardous) under RCRA Subtitle D and requires these facilities to have a groundwater monitoring program. The groundwater monitoring requirement extends 30 years past the closure of these facilities.

The 2015 CCR Rule requires the development of a Sampling and Analysis Plan (SAP) for each site. TestAmerica can provide all of the programmatic documentation for the environmental testing components:

**Sample Collection**  
**Sample Preservation and Shipment**  
**Analytical Procedures**  
**Chain of Custody**  
**Quality Assurance and Quality Control**

Participating in the development of the SAP provides much of the data needed for programmatic groundwater monitoring support. When TestAmerica participates in this step, it decreases the client's time and cost to implement the monitoring program.

TestAmerica has been providing RCRA Subtitle D environmental testing support for 20+ years. Our programmatic support helps clients become and stay compliant. Our support has been for solid waste management firms nationwide. We can supply our utility industry clients with the same programmatic support in the most effective and cost efficient manner.

**AVOIDING FALSE POSITIVES  
IN YOUR GROUNDWATER DATABASE:**

Analytical results from groundwater programs are susceptible to false positives, leading to incurring unwarranted costs to correct perceived risks to human health & environment that may not exist. TestAmerica's 20+ years of RCRA Subtitle D experience led us to implement systems that allow us to identify and review data outliers prior to the release of the data.

TestAmerica's programmatic CCR Groundwater Monitoring support includes:

**Sampling Support**

All required sampling supplies including bottles, coolers, Chains of Custody, and packing material

Field data entry

**Laboratory Analysis**

All test methods with test descriptions including unit costs and annual program costs

Reporting limits and units for each parameter

**Data Delivery**

All data deliverable requirements

Laboratory report

Site Specific Electronic Data Deliverable (EDD)

**TestAmerica's Recommendation for Metals Method Selection**

ICP/MS is an excellent technique for environmental analysis due to its high sensitivity and ability to determine many elements in a single analysis. It is, however, subject to a few interferences that can cause erroneous results unless properly addressed. For the CCR Groundwater Monitoring program, TestAmerica recommends using ICP/MS with the collision cell to address matrix interference issues. The collision cell is not needed for all elements, just those prone to molecular interferences. Elements of environmental interest that have several molecular interferences include arsenic, vanadium, chromium, cobalt, and selenium.

**Coal Combustion Residuals (CCR) Monitoring Requirements**

2015 CCR Rule requires the following monitoring parameters:

**Appendix III –  
Detection Monitoring**

Boron  
Calcium  
Chloride  
Fluoride  
Sulfate  
Total Dissolved Solids  
pH (field)

**Appendix IV –  
Assessment Monitoring**

Antimony  
Arsenic  
Barium  
Beryllium  
Cadmium  
Chromium  
Cobalt  
Lead  
Lithium  
Mercury  
Molybdenum  
Selenium  
Thallium  
Fluoride  
Radium 226 & 228 combined  
pH (field)

Clients save time and money by not having to use subcontractors; all analysis required for this program, including the radiochemistry, can be completed by TestAmerica.

**TestAmerica's Recommendation for Radium 226 & 228 Combined Method Selection**

TestAmerica recommends a discussion with our laboratory in the selection of an analytical approach for Radium 226 analysis using either EPA Method 903.0 or SW 846 Method 9315 to avoid potentially high biased results. Please contact TestAmerica for the details to support your program.

**TestAmerica Certification**

TestAmerica is accredited for non-potable water (groundwater) nationwide, where applicable.



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