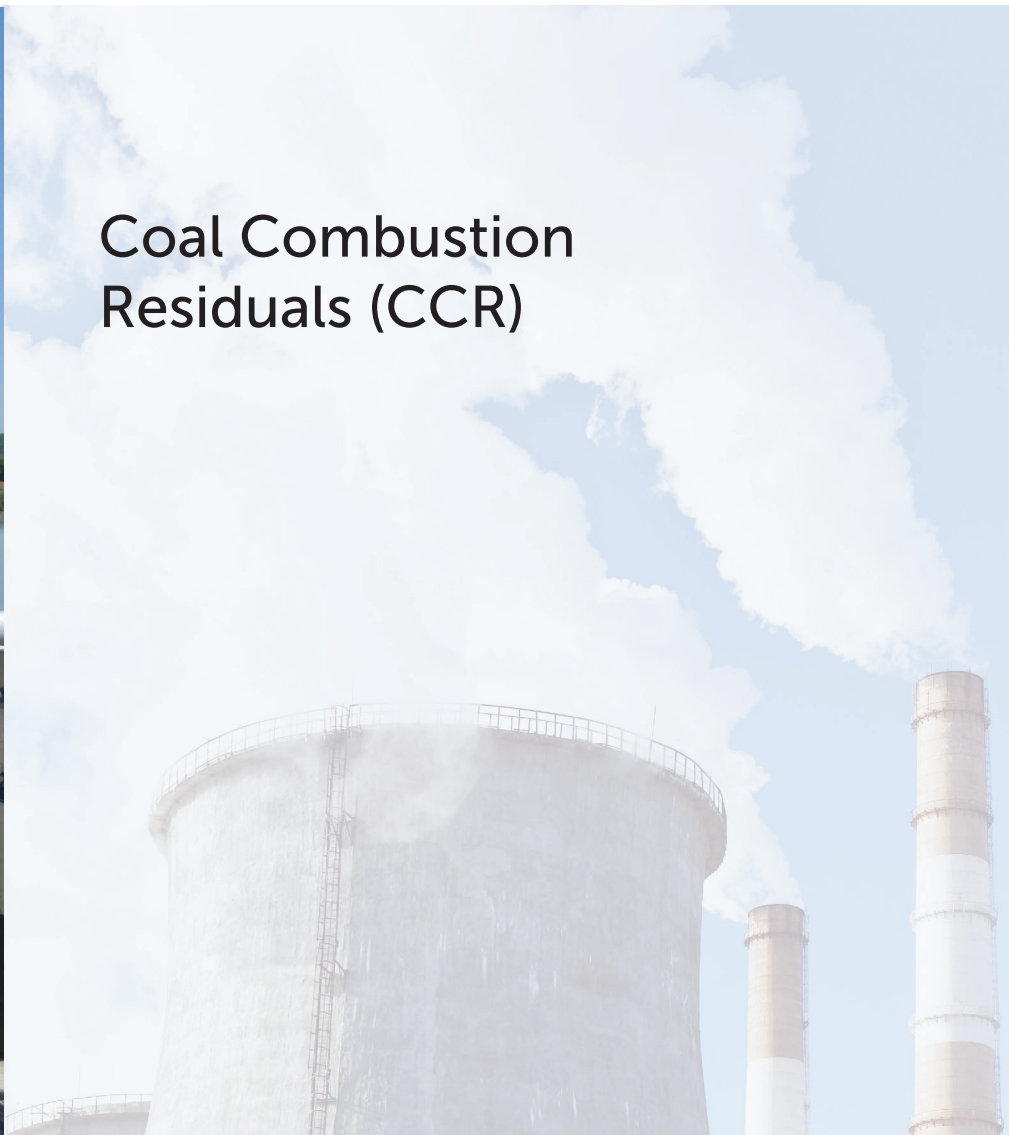


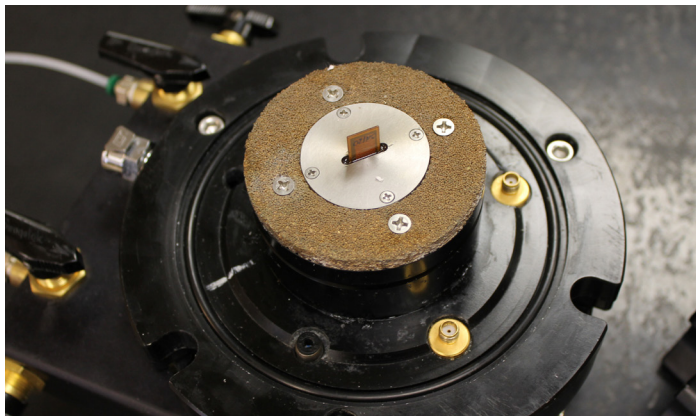


## Coal Combustion Residuals (CCR)





# Geocomp: Providing services to identify, manage, and mitigate risk to CCR facilities



## MATERIALS CHARACTERIZATION

Utilize best practices and advanced laboratory testing equipment to avoid conservatism and inaccuracies of typical practice.

- ◆ Use field and laboratory shear wave velocities to validate sampling, specimen preparation, and laboratory test results.
- ◆ Determine strength for realistic stability assessments.
- ◆ Determine parameters for seismic response analysis.
- ◆ Define representative subsurface profiles for accurate analyses.

## REPRESENTATIVE PROJECT

Geocomp currently has a multi-year contract with the Tennessee Valley Authority (TVA) to develop and implement effective ways to monitor the safety of all existing wet stacking operations using instrumentation, wireless communications, and computerized data management. We have developed a real-time, web-based GIS monitoring system for all instrumentation at many of the TVA CCR facilities. Data from the instrumentation can be compared with other real-time data, including weather (rainfall) and river and pond levels. The system also allows TVA to include historical data and documentation from each facility for easy access and reference. The specialized features in this system provide situational awareness to assist TVA engineers with data review and evaluation. The system is working so well that TVA is using it to help manage risk and meet regulatory requirements for their environmental well program.



## MONITORING OF PERFORMANCE

Real-time, web-based monitoring of sensors combined with related information and historical documents to provide evaluated data and situational awareness for informed decision-making and public reporting.

Organize historical information into GIS database and provide efficient ways to add new data and information for rapid evaluation and presentation.

- ◆ Pond levels
- ◆ Pore water pressures
- ◆ Deformations
- ◆ Seepage
- ◆ Seismic performance
- ◆ Field observations
- ◆ Weather conditions

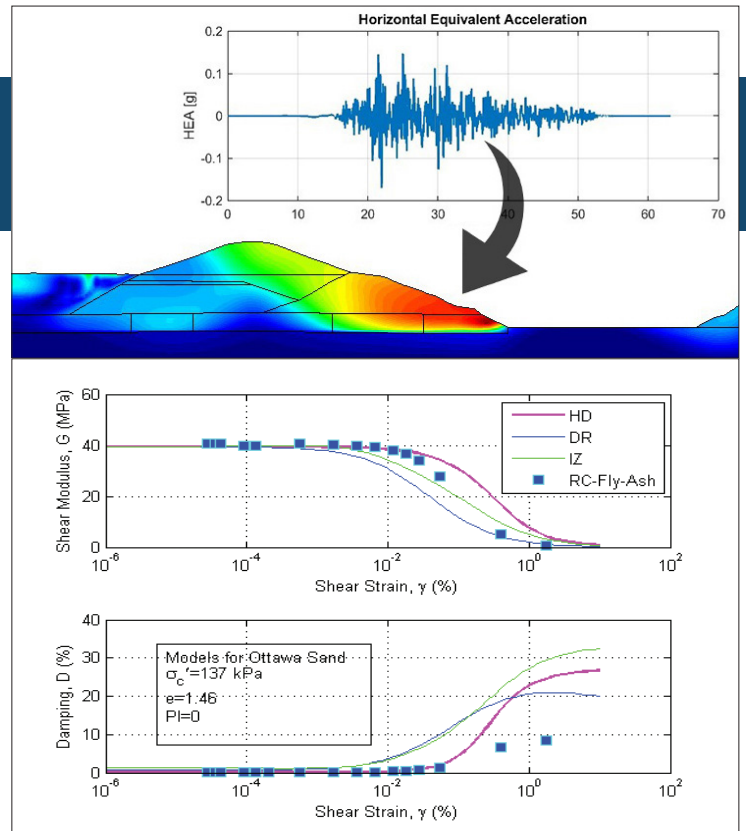
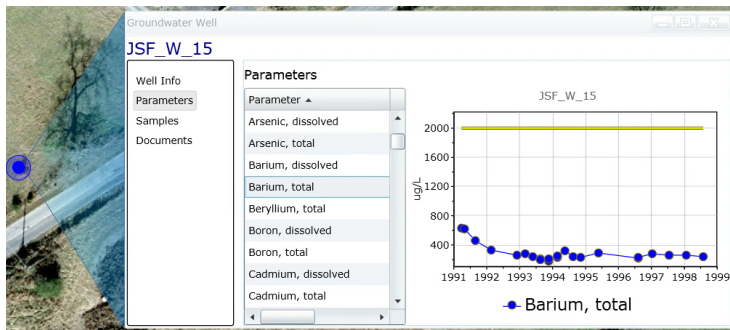


# Our Capabilities

## GROUNDWATER MONITORING

Web-based data management with inclusion of historical information on groundwater levels and chemistry to provide evaluated data for informed and rapid decision-making, quality assurance, presentation, and internal/public reporting.

- ◆ Groundwater levels to support groundwater modeling and evaluate mounding and impacts on natural flow conditions.
- ◆ Efficient monitoring of ground water chemistry over time.
- ◆ Comparison of test data against EPA requirements.
- ◆ Complete document record to provide situational awareness.



## GEOSTRUCTURAL SYSTEMS ANALYSIS AND DESIGN

Design using representative site models with parameters obtained from best practices in field and lab testing to predict expected performance for static and seismic loads. Avoid conservative approaches.

- ◆ Realistic flow models.
- ◆ Static and pseudo-static stability.
- ◆ Liquefaction factor of safety.
- ◆ Post shaking undrained stability.
- ◆ Deformation-based analyses and assessments.
- ◆ Stability assessments using best practices.

### REPRESENTATIVE PROJECT

Geocomp's Geotechnical Systems Group has used its "Best Practices" approach to evaluate compliance of several of the TVA's larger CCR facilities with EPA stability requirements. Initial screening assessments using simplified approaches showed these facilities would not meet the EPA seismic stability requirements. Geocomp applied its Best Practices to supplemental field investigations, high quality laboratory testing, and advanced seismic analyses to demonstrate the facilities would perform sufficiently well to meet requirements. Results showed that the extensive remedial measures determined from the simplified assessments were not necessary.





Allen Fossil Plant, TN  
Brame Bottom Ash Pond, LA  
Buechel Basin, KY  
Bull Run Fossil Plant, TN  
Clift Creek Fly Ash Pond, IN  
Colbert Fossil Plant, AL  
Cumberland Fossil Plant, TN  
Gallatin Fossil Plant, TN  
John Sevier Fossil Plant, TN  
Johnsonville Fossil Plant, TN  
Kingston Fossil Plant, TN  
Langan Refinery Sludges  
Minnehaha Slurry Pond, IN  
Paradise Fossil Plant, KY  
Peabody Ash Pond, KY  
Shawnee Fossil Plant, KY  
Stilling Basin, TN  
V&M Star Mix Design Study, OH  
Watts Bar, TN  
Widows Creek Fossil Plant, AL

## About Geocomp

Geocomp provides comprehensive geostuctural design and performance monitoring services to clients across the United States and around the globe. Our professional staff combine in-depth understanding of structural and geotechnical material behavior with the latest in performance monitoring technologies to provide innovative and sound geostuctural solutions - resulting in better control of risk and cost of projects.

Our testing division, GeoTesting Express, Inc. (GTX), provides state-of-the-art testing facilities to measure the mechanical and physical properties of soil, rock, geosynthetics, aggregate, concrete, and other geo-materials. GTX also provides field testing services to inspect, sample, test, document, and monitor quality on projects.

Geocomp Products division manufactures, sells, and supports remote monitoring systems for both static and dynamic applications worldwide that provide web-based access to instrument data used for real-time monitoring of structural performance during construction and operation. It also manufactures a full line of automated soil testing systems to measure strength, stiffness, and permeability, as well as custom designed pavement sensors and load cells used by commercial, governmental, and university laboratories.