

# CHARLES R. LOWMAN POWER PLANT RIVERBANK STABILIZATION

Leroy, Alabama

Owner: Power South Energy Cooperative

Project Manager: Black and Veatch Energy

Contractor Joint Venture:  
Jordan Pile Driving  
A.H. Beck Foundation Co., Inc.

Years of Project: 2005 - 2006

Client Reference:  
Lynn Doyle, P.E. (Geotechnical Engineering and  
Testing, Inc.— 251-666-7197)



## Project Highlights:

New air quality control improvements were constructed along the banks of the Tombigbee River at a location which has experienced lateral movements of approximately 4 feet over a period of over a decade as a result of river bank instability. The deep seated movements were produced by a combination of conditions including high artesian water pressures within an aquifer confined by a layer of stiff clay, low shearing resistance within the stiff clay, low overburden pressures as a result of dredging adjacent to the coal unloader facility, and low river levels which further reduces the overburden stress. After extensive investigation and analysis, including probabilistic assessments, a scheme of one hundred 54-inch diameter soil dowels (drilled shafts) extending greater than 100 feet down through the stiff clay and socketed 20 feet into the underlying limestone was selected to arrest lateral movements and protect the planned AQC additions.

The shafts and surrounding ground were extensively instrumented with:

- standpipe and fiber-optic piezometers to monitor pore water pressures.
- slope inclinometers to monitor lateral movements of the shafts and surrounding soil.
- fiber-optic strain gages to monitor load transfer into the drilled shafts from the moving soil.

DBA served as a consultant to the geotechnical engineer, Geotechnical Engineering and Testing, Inc. of Mobile, Alabama.

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