



Clockwise from above:

- Overview of trenching operation showing work platform, mixing area, clamshell and backhoe excavation
- Extended stick backhoe slurry wall excavation
- Bentonite slurry trench

Solutia Barrier

Sauget, IL

Geotechnical Engineering Design –Build Services included:

- Design of a site remedy and development of alternatives to a prescribed remedy
- Preparation of Contract Documents, Drawings and Specifications, for a soil-bentonite hydraulic barrier excavated by slurry trenching methods and cap details.
- On-call engineering design services, drafting, and consultation throughout construction responding to field conditions, including detailing barrier wall corners and at grade and utility crossings.
- On-call field inspection services
- Design and implementation of ground improvement and instrumentation and monitoring of unstable soft ground conditions in undisclosed area of former fly ash lagoon.
- Responses to and resolving alleged non-compliance orders issued by the Owner

Mueser Rutledge Consulting Engineers (MRCE) provided geotechnical design services for a Design-Build project involving a 150 ft deep soil-bentonite barrier for Solutia, Inc. Services included design of a site remedy and development alternatives to a prescribed remedy. Tasks included hydraulic barrier design and cap details, cost estimating, and preparation of project portfolio. Working for the Contractor throughout construction, MRCE performed numerous trench stability analyses for variable subsurface and loading conditions. These included an undisclosed or changed condition where a fly ash lagoon containment area proved too weak to support construction equipment. A combination of ground improvement by wick drain and surcharge and a geotextile supported work platform combined with careful slurry management and an instrumentation and monitoring allowed construction to progress while minimizing costly delays. Slurry parameters and excess pore groundwater pressures within the fly ash were monitored to verify adequate safety factors, though marginal, were maintained in accordance with design assumptions.