



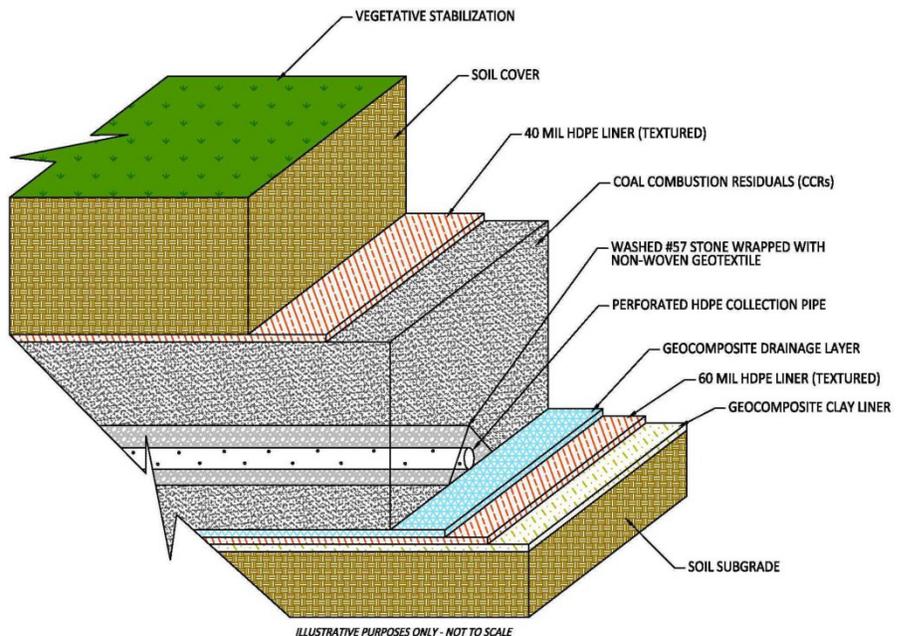
Structural Fills at Clay Mines

As part of Duke Energy's plans to excavate coal ash from high-priority North Carolina sites, the company selected Charah, Inc. to remove coal ash from the Riverbend Steam Station in Mount Holly and the L.V. Sutton Steam Electric Plant in Wilmington and beneficially reuse the ash as a structural fill at open-pit clay mines in Chatham and Lee Counties, North Carolina.

What is a structural fill?

A structural fill is a material that is placed and compacted in accordance with approved design criteria in order to improve land for an intended use. Coal ash is a useful fill material due to its low unit weight, relatively high shear strength, and ease of handling and compaction. In this case, coal ash will be used as a structural fill to restore the Brickhaven Mine in Moncure (Chatham County) and the Sanford Mine in Sanford (Lee County).

Charah will place the ash in a series of specially engineered synthetic liners, with the top and bottom impermeable liners being heat-welded to encapsulate the ash. The completed structural fill will be covered with soil. This project will meet all state and federal standards for a structural fill, including groundwater monitoring and reporting, and will comply with the requirements set forth in Sections 4(b) and (c) of the North Carolina Coal Ash Management Act.



How much coal ash will be used in structural fill projects at the mines?

Duke Energy's phase one plans call for approximately 900,000 tons of material from Riverbend and 2 million tons of material from Sutton to be used as a structural fill at the mines. Subsequent phases to these structural fill projects are likely.

Why were these mine sites selected for structural fill using coal ash?

The North Carolina Coal Ash Management Act specifically includes mine reclamation projects in the list of approved structural fill uses for coal ash. Using these open-pit clay mines from the brick industry for structural fills has several advantages, including the reclamation of previously unusable land, existing access to rail, and deep layers of impervious clay that provide additional environmental protection.

Where are the mine sites?

The Brickhaven Mine is in Moncure, an unincorporated community in southeastern Chatham County, and the Sanford Mine is in Sanford in northeastern Lee County. Both mines are in areas zoned for industrial use.

When will the project start, and what is the duration?

Duke Energy submitted its plans to the North Carolina Department of Environment and Natural Resources (NC DENR) on November 13, 2014. Based on current estimates, phase one of the structural fill projects will continue for 18 months after the plans and associated permits are approved by NC DENR. Subsequent phases to these structural fill projects are likely, and the Coal Ash Management Act requires the closure of basins at the high-priority sites by August 1, 2019.

How will this project impact local residents and their quality of life?

Charah makes every effort to be a good neighbor in its operations. Coal ash will be transported primarily by rail to alleviate concerns about increased truck traffic on state roadways. Additionally, safety is Charah's foremost priority, and the company has been recognized repeatedly by the U.S. Department of Labor, state agencies including the N.C. Department of Labor, and industry organizations for its outstanding record of employee safety.

What are the economic benefits of this project?

The project is expected to create up to 60 jobs in Chatham County and up to 40 jobs in Lee County, depending on operational needs. Charah plans to invest more than \$10 million in the area for local subcontractors, suppliers and fuel. This project also will add to state and local tax revenues, inclusive of payroll, property and other applicable taxes.

How will the restored mine sites be used?

The restored mine sites will be suitable for commercial development, agricultural use or green space. Specific plans have not been determined.

Who is responsible for long-term monitoring of the sites?

Charah will be responsible for long-term groundwater monitoring and reporting in accordance with North Carolina state standards and requirements.

What is Charah's track record, and has the company successfully done this type of project?

Charah is one of the largest providers of coal combustion product management and power plant support services for the coal-fired electric utility industry. Charah has been operating in North Carolina since 2001, with 120 employees in the state and eight current projects. The company uses the best practices, materials and technology for structural fills and is nearing completion of a coal ash structural fill project at Asheville (North Carolina) Regional Airport.

