

Technology Testbeds at Savannah River National Laboratory

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SRNL Fast Facts

- > The Savannah River National Laboratory (SRNL) has a unique set of assets that can be accessed to test innovative technologies that address Department of Energy, Office of Environmental Management (DOE-EM) high priority needs.
- > Priority DOE-EM concerns include technetium-99 (Tc-99), mercury, cesium-137 and strontium-90
- > The Geologic Core Repository Testbed archives numerous sediment and rock cores; associated bedrock boreholes provide locations to test deployment and retrieval of various canister designs.

Contact Information

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Geologic Core Repository Testbed

The geologic data catalog for the Savannah River Site (SRS) includes more than 1,200 soil and rock cores archived at the Geological Core Repository. The contents of the core repository constitute an unrivaled collection of unconsolidated sediments deposited in fluvial, deltaic and shallow marine environments along the emergent southeastern Atlantic Coastal Plain during the Cretaceous and Tertiary time periods. The repository also contains many samples of buried Paleozoic bedrock and Triassic basin-fill sequences, rocks that are rarely sampled in this region.

This Geologic Core Repository can serve as a testbed whereby the primary uses of unconsolidated sediment cores can be accessed to improve ones understanding of sediment heterogeneity and physical properties; delineate boundaries of various stratigraphic units; predict groundwater movement and the behavior of contaminants; and add geotechnical rigor to facility siting and foundation design. The bedrock cores are a record of continental rifting and tectonism along the southeastern U.S. continental margin.

Attributes

- High-resolution sampling of the entire upper Atlantic Coastal Plain stratigraphic sequence, including sediments of the Floridan aquifer, an important source of drinking water for five southeastern states
- Many cores in the Santee Formation, which directly influences facility siting, design and foundation stability
- Age constraints and movement history for basement faulting

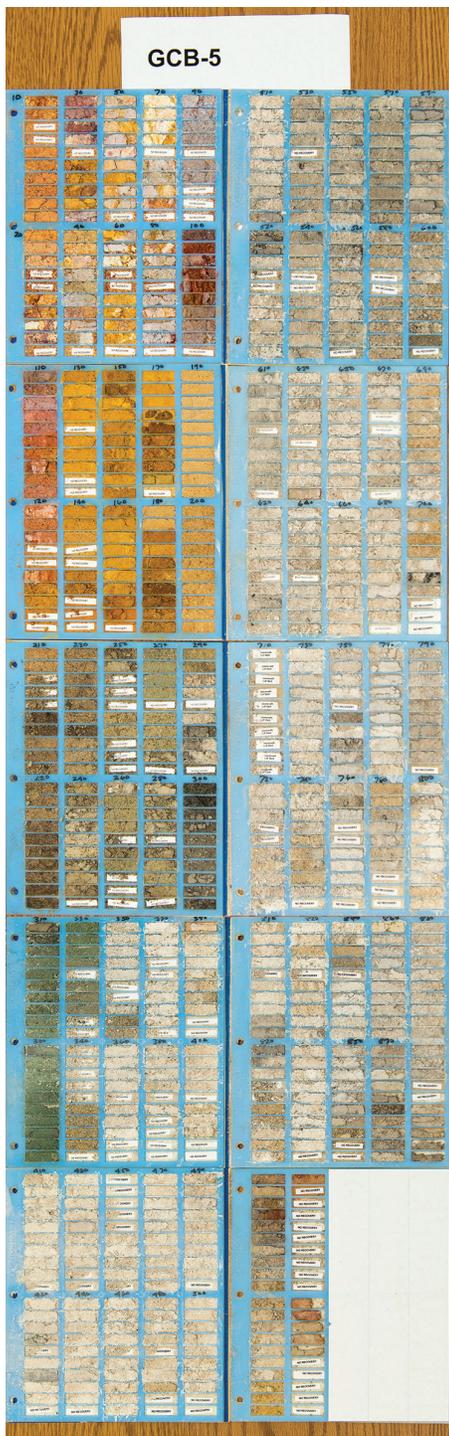
Impact

- Tangible archive of 60-plus years of subsurface investigations at SRS and surrounding region
- Ready access to sediments that compose regional aquifers and aquitards
- Important record of pre-remediation conditions at RCRA/CERCLA sites
- Availability of geologic samples to support geo-modeling, performance assessments, facility siting, waste disposition and remedial decision-making



Fossiliferous limestone from F Area borehole

Technology Testbeds at SRNL



Photomosaic of Cretaceous and Tertiary sediments from borehole near H Area



Cores of Paleozoic crystalline basement rock and Triassic basin-fill sediments stored in wooden boxes



Cores of Cretaceous and Tertiary sediments stored in plastic boxes



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