



Soil & Groundwater Closure Projects

Accomplishments

2006

Introduction

Safety

While achieving major remediation, Soil and Groundwater Closure Projects maintained its excellent safety record through 2006, reaching a milestone of nine years and over eight million safe hours since the last days away or lost time injury.

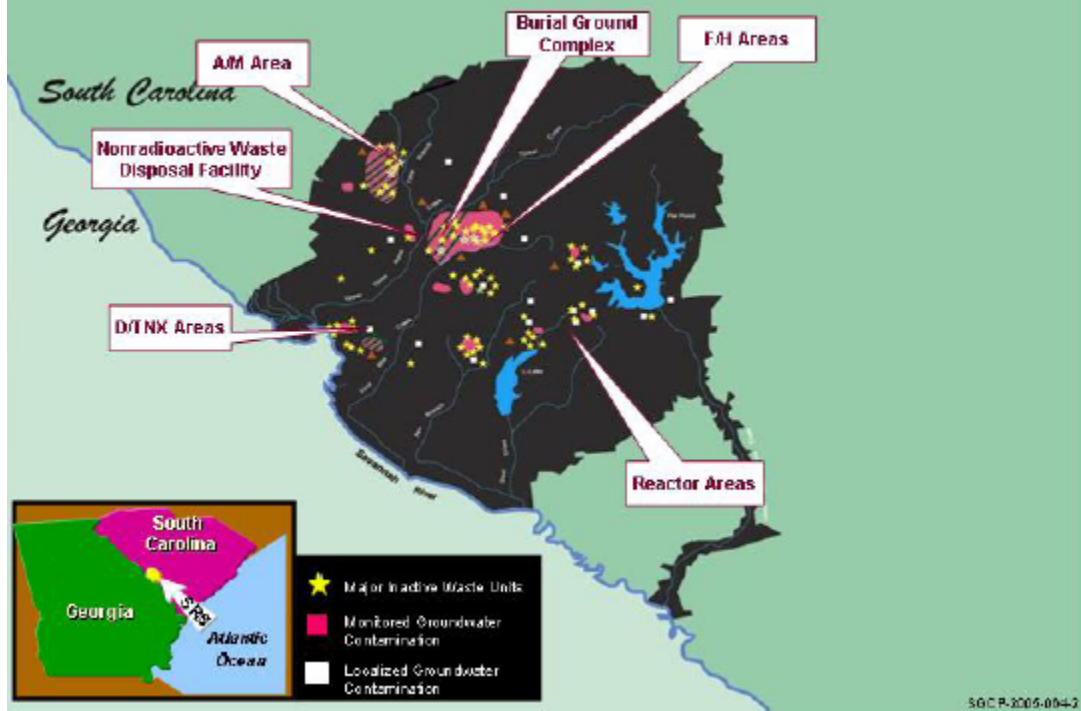
Soil and Groundwater Closure Projects (SGCP)

SGCP is responsible for the remediation of 515 SRS waste units to reduce risk and protect human health and the environment. The remediation is regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Resource Conservation and Recovery Act (RCRA). This is accomplished through the SRS Federal Facility Agreement (FFA), a tri-party agreement between the US Environmental Protection Agency, the South Carolina Department of Health and Environmental Control, and the US Department of Energy that:

- Directs the comprehensive remediation of the Site
- Ensures that SRS satisfies RCRA and CERCLA requirements
- Includes cleanup schedules for SRS waste units

In 2006, SGCP completed 334 of the Project's 515 waste units; another 34 units are in the remediation phase. By 2031, all inactive SRS waste sites posing a risk to human health or the environment should be remediated and controlled, and contaminated groundwater should be remediated, in remediation, or closely monitored.

Savannah River Site



Key Projects 2006

T Area Completion

Final remediation work in T Area was completed on August 31, 2006, and represents SRS's first area closure. T Area is located near the SRS boundary and was used for pilot-scale testing and evaluation to support the separation of uranium and plutonium produced from five on-site reactors. Cleanup included the demolition of all T Area's 28 buildings; removal and off-site disposal of 91 cubic yards of highly contaminated soil; the construction/installation of a 10-acre geosynthetic cover system; and the application of 435,600 square feet of sod and grass over the geosynthetic cover system. The project was completed in approximately 36 months, 48 months ahead of the original schedule.



Remediation work was completed on August 31, 2006

General Separations Area Consolidated Unit

In E Area, closure work continues at the General Separations Area Consolidation Unit, which is considered SRS's highest risk site. This remediation effort streamlines cleanup by consolidating remedial actions at five waste units into one closure project. Removal and consolidation efforts of highly contaminated soil or materials from four waste units to pre-determined locations within the Old Radioactive Waste Burial Ground (ORWBG) are complete, and placement of the engineered geosynthetic cover system over the entire ORWBG is over 60 percent complete. Completion will occur in 2007, a year earlier than required by the regulatory agencies.



Aerial view of cover construction

M Area Dynamic Underground Stripping

The Dynamic Underground Stripping (DUS) project at the M Area Settling Basin continued operations and removed over 240,000 pounds of chlorinated solvents. DUS is a technology developed for use in the petroleum industry that injects steam into the subsurface to volatilize contaminants so they can be extracted with soil vapor extraction units. Because DUS technology extracts material 15 times faster than soil vapor extraction and 75 times faster than traditional pump-and-treat systems, it is estimated that over six decades of remediation will be avoided at SRS's M Area Settling Basin.



Aerial view of DUS project

D Area Expanded Operable Unit

The D Area Expanded Operable Unit (DEXOU) consists of two subunits, the 488-D Ash Basin (488-DAB) and D Area Rubble Pit (DRP), located approximately 3,000 feet east of the Savannah River. Past practices at these facilities contaminated the soil, sediment, surface water, and groundwater. The principal sources of contamination include elevated metals and PCBs, coal-related metals and radionuclides associated with coal rejects and ash, and low pH surface water. The remedy was to excavate and remove the waste materials (soils and sediments) from the DRP and areas outside of the 488-DAB, consolidate them in the 488-DAB, and construct a geosynthetic cap over the 27-acre 488-DAB. In 2006, the cap was installed, and the project is on track for completion in early FY 07, six months ahead of schedule.



Aerial view of geosynthetic cap construction

R Reactor Area Burning Rubble Pits & R-Rubble Pile

The R Reactor Area Burning Rubble Pits (RBRP) and R-Rubble pile (RRP) Operable Unit consists of two waste units. Contaminants of concern at RBRP were metals, and contaminants at RRP were metals and asbestos. The remedial action removed the soils that exceeded the industrial remedial goal levels. Then, a low permeability geosynthetic cover system was installed. Construction was completed in November 2005.



RBRP and RRP after cap construction complete

C Area Reactor ERH

At C Reactor, SGCP installed a system called electrical resistance heating (ERH) to remediate contamination in subsurface soil. With ERH, electrodes are inserted into the earth to heat the soil, which mobilizes and vaporizes the contaminants. The contamination is removed using soil vapor extraction units. In less than three months, the ERH system removed a total of 730 pounds of trichloroethylene. The results of the ERH system have been so good that the system will be dismantled and relocated to the Chemicals, Metals and Pesticides Pits, where the process will be repeated.



ERH facility