

The Savannah River Site Environmental Bulletin

December 22, 2023

Volume 35, Number 11

Notice of Public Availability

Fifth Phase: Sixth Five-Year Remedy Review Report for Savannah River Site Operable Units with Operating Equipment

The sixth five-year remedy review is being conducted in five phases for operable units (OUs) with similar remedies. The OUs are grouped by the following remedy types: (1) native soil covers and/or land use controls, (2) groundwater, (3) engineered cover systems, (4) geosynthetic or stabilization/solidification cover systems, and (5) operating equipment. The public is notified when each phase of the remedy review is conducted and when the phase is complete. The review for the fifth phase for OUs with operating equipment is complete and is being made available to the public.

The Comprehensive Environmental Response, Compensation, and Liability Act requires that remedial actions that result in residual hazardous substances, pollutants, or contaminants remaining at an OU at levels unsuitable for unrestricted land use be subject to a five-year remedy review. The Sixth Five-Year Remedy Review Report for Savannah River Site Operable Units with Operating Equipment evaluated the remedial actions for operating equipment selected through issued Records of Decision (RODs), Interim RODs, ROD Amendments, or Explanations of Significant Differences to determine whether the selected remedies remain protective of human health and the environment. The Sixth Five-Year Remedy Review Report for Savannah River Site Operable Units with Operating Equipment is complete and is being issued by the U. S. Department of Energy (DOE), the lead agency for the Savannah River Site (SRS), with concurrence by the U. S. Environmental Protection Agency – Region 4 (EPA), and South Carolina Department of Health and Environmental Control (SCDHEC).

The five-year remedy review addressed three major questions:

- Are the remedies functioning as intended by the decision document?
- Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of remedy selection still valid?
- Has any other information emerged that could call into question the protectiveness of the remedy?

The report reviews remedy decisions for SRS OUs that selected operating equipment (i.e., ongoing active remediation) as part of the final remedy. A range of active remediation systems are used at SRS to address contaminants in soil and groundwater. Soil vapor extraction (SVE) systems are used to remove volatile organic compounds (VOCs) from vadose zone source areas before the contaminants can migrate to the water table. Pump and treat systems (e.g., air strippers and associated recovery wells) are used to remove contaminant mass and exert hydraulic control over contaminated groundwater plumes. Thermal technologies (e.g., dynamic underground stripping and electrical resistance heating) have been employed in several areas to mobilize dense non-aqueous phase liquid VOCs in the vadose zone and groundwater.

Many existing SVE systems have been converted from active vacuum extraction to low-energy MicroBlower™ and/or passive BaroBall™ systems. BaroBall™ and MicroBlower™ systems are two types of low-energy-consumption, low-carbon-emission SVE systems currently used at SRS to remove VOC contaminants from the subsurface.

The SRS Environmental Bulletin

The Sixth Five-Year Remedy Review Report for Savannah River Site Operable Units with Operating Equipment includes a review of the following OUs:

- A-Area Burning/Rubble Pits (731-A/1A) and Rubble Pit (731-2A), Miscellaneous Chemical Basin (731-4A) and Metals Burning Pit (731-5A)
- A/M Area Groundwater
- A-Area Miscellaneous Rubble Pile (731-6A)
- C-Area Burning/Rubble Pit (131-C) and Old C-Area Burning/Rubble Pit (NBN [no building number])
- D-Area Operable Unit
- F-Area Groundwater
- H-Area Groundwater
- M-Area Inactive Process Sewer Line (081-M) (MIPSL)
- M-Area Operable Unit (MAOU)
- P-Area Burning/Rubble Pit (131-P)
- TNX Area

The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of remedy selection are still valid for all the remedial actions evaluated. All remedies were determined to be protective of human health and the environment. The remedy for the A/M-Area Groundwater OU has been determined to be protective in the short-term. To establish long-term protectiveness for the A/M-Area Groundwater OU, final corrective actions to be proposed by SRS and approved by SCDHEC will be implemented.

In the Sixth Five-Year Remedy Review Report for Savannah River Site Operable Units with Operating Equipment, the DOE, EPA, and SCDHEC determined the following:

- Soil confirmation sampling is recommended at A-Area Burning/Rubble Pits (731-A, 731-1A) and Rubble Pit (731-2A), Miscellaneous Chemical Basin (731-4A) / Metals Burning Pit (731-5A) OU to evaluate the current soil concentrations against cleanup levels with the intent to justify shutting down the passive SVE system if the cleanup levels have been met.
- Due to the D-Area Operable Unit Bubble Tower Subunit MicroBlower™ SVE system's minimal removals of contaminants for at least the last four years, SRS proposes to convert the low-energy MicroBlower™ SVE system to a passive BaroBall™ SVE system until confirmation soil samples can be collected to determine whether the tetrachloroethylene soil cleanup level has been met (20 µg/kg). If the cleanup level has been achieved, the results will be submitted to the DOE, EPA, and SCDHEC for consensus to justify discontinuing operation of the SVE system and/or monitoring.
- Since the MIPSL SVE system has been taken offline and removed, and the LUC boundaries of the MIPSL OU and MAOU overlap, SRS recommends incorporating the MIPSL OU into the MAOU to eliminate the operation and maintenance costs for the smaller OU. A meeting to discuss the appropriate regulatory path forward for this recommendation is needed.

For additional information, contact: Barbara Smoak, Savannah River Nuclear Solutions, LLC, Savannah River Site, 730-1B, Aiken, SC 29808

The SRS Environmental Bulletin

To aid in the review of the report, a Savannah River Site Fact Sheet for the Sixth Five-Year Remedy Review Report for SRS Operable Units with Operating Equipment was also developed.

Copies of the Sixth Five-Year Remedy Review Report for Savannah River Site Operable Units with Operating Equipment and the Fact Sheet are available in the Administrative Record. The Administrative Record is available in the information repositories listed below:

- DOE Public Reading Room at the Gregg-Graniteville Library at the University of South Carolina (USC)-Aiken campus in Aiken, SC; and
- Thomas Cooper Library Government Information and Maps Department at USC in Columbia, SC

Hard copies of the Sixth Five-Year Remedy Review Report for Savannah River Site Operable Units with Operating Equipment and the Fact Sheet are available at the following locations:

- Reese Library Government Information Department at Augusta University in Augusta, GA; and
- Asa H. Gordon Library at Savannah State University in Savannah, GA

An electronic copy of the Sixth Five-Year Remedy Review Report for Savannah River Site Operable Units with Operating Equipment can be found at the following website:

- <http://www.srs.gov/general/programs/soil/rod/rod.html>

An electronic copy of the Fact Sheet can be found at the following website:

- <http://www.srs.gov/general/programs/soil/pub/pubinv.html>

For additional information about the five-year remedy review process at SRS, please contact:

Barbara Smoak

Savannah River Nuclear Solutions, LLC
Savannah River Site
Building 730-1B
Aiken, SC 29808
(803) 952-8060
barbara.smoak@srs.gov

For additional information, contact: Barbara Smoak, Savannah River Nuclear Solutions, LLC, Savannah River Site, 730-1B, Aiken, SC 29808

