

The Savannah River Site Environmental Bulletin

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Notice of Public Availability Second Phase: Sixth Five-Year Remedy Review Report for Savannah River Site Operable Units with Groundwater Remedies

The Sixth Five-Year Remedy Review Report 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 second phase for OUs with groundwater remedies 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 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 Groundwater Remedies evaluated the groundwater remedial actions 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 Groundwater Remedies is complete and is being issued by the U.S. Department of Energy (USDOE), the lead agency for the Savannah River Site (SRS), with concurrence by the U.S. Environmental Protection Agency (USEPA) – Region 4, 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?

Each SRS OU is unique in size, location, environmental factors, and contaminant type. Contaminants may include chemicals (e.g., trichloroethylene, tetrachloroethylene, etc.), metals, pesticides, polychlorinated biphenyls, and radionuclides (e.g., tritium, cesium-137, etc.). Contaminants may be found in surface soils, subsurface soils, surface water, and/or groundwater. OU-specific remedial actions are designed to address the contaminants for the protection of human health and the environment. The report reviews the remedy decisions for SRS OUs that selected groundwater remediation as part of the remedy.

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SRS uses a graded approach for groundwater remediation. The selection of groundwater remediation technologies for a specific contamination area is based on the size, contaminant type, contaminant concentration, location and configuration of the contaminant plume. These attributes are the result of the nature and mass of the source of contamination and the subsurface characteristics in the area of the plume.

Groundwater remedies included groundwater monitoring activities as part of the interim or final remedy. These monitoring activities are primarily associated with monitored natural attenuation (MNA) or a groundwater mixing zone (GWMZ) permit. MNA is a passive groundwater remedial action where the fringe and dilute areas of a plume degrade by natural biogeochemical or physical processes such as biodegradation, radioactive decay, dilution, and simple dispersion. MNA remedies must be accompanied by source control and a technical justification that conditions are favorable for natural attenuation. Additionally, the groundwater plume should not be expanding significantly, and surface water standards should not be exceeded at the groundwater discharge point. SCDHEC may issue a GWMZ permit to implement an MNA remedy when only the uppermost groundwater aquifer is impacted.

The Sixth Five-Year Remedy Review Report for SRS OUs with Groundwater Remedies included a review of the following OUs:

- C-Area Groundwater;
- Chemicals, Metals, and Pesticides Pits (080-170G, 080-171G, 080-180G, 080-181G, 080-182G, 080-183G, and 080-190-G);
- D-Area Oil Seepage Basin (631-G);
- L-Area Southern Groundwater;
- R-Area OU; and
- R-Area Reactor Seepage Basins (904-57G, 904-58G, 904-59G, 904-60G, 904-103G, 904-104G) and 108-4R Overflow Basin.

The exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of remedy selection are still valid for all of the remedial actions evaluated. All of the remedies were determined to be protective of human health and the environment. The interim remedy for the C-Area Groundwater OU was determined to be protective in the short term. In order to establish long-term protectiveness for this OU, additional remedial actions, including land use controls (if needed), will need to be implemented. SRS facility security and administrative controls that restrict unauthorized access to the C-Area Groundwater OU are not part of the interim remedy, and therefore the remedy is not recognized as long-term protective. SRS will include the C-Area Groundwater OU in Appendix A of the Federal Facility Agreement (FFA) Annual Progress Report to demonstrate long-term protectiveness through SRS facility security and administrative controls. The report is required by the FFA and includes annual certification by the USDOE SRS Manager that the listed OUs are in compliance with land use requirements.

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Major developments in the Sixth Five-Year Remedy Review Report for Savannah River Site Operable Units with Groundwater Remedies are as follows:

- Since groundwater contamination no longer exceeds regulatory limits at the L-Area Burning/Rubble Pit (131-L), Gas Cylinder Disposal Facility (131-2L), and L-Area Rubble Pile (131-3L) (LBRP) OU, USDOE, USEPA, and SCDHEC agreed to discontinue monitoring and reporting of the OU and designated the OU as No Action. Therefore, the OU is no longer included in the remedy review report for SRS OUs with groundwater remedies.
- Based on comprehensive sampling, 1,4-dioxane was added to the annual groundwater monitoring for select wells at the D-Area Oil Seepage Basin OU.
- Groundwater monitoring at the R-Area OU will focus on the most mobile constituents every five years at select wells and select constituents annually for five years. Monitoring for 1,4-dioxane is no longer required.

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 Groundwater Remedies was also developed.

Copies of the Sixth Five-Year Remedy Review Report for Savannah River Site Operable Units with Groundwater Remedies 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 Aiken campus in Aiken, SC; and
- Thomas Cooper Library Government Documents Department at University of South Carolina in Columbia, SC

Hard copies of the Sixth Five-Year Remedy Review Report for Savannah River Site Operable Units with Groundwater Remedies and the Fact Sheet are available at the following locations for thirty (30) days:

- Reese Library Government Information Section 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 Groundwater Remedies 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>

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