

# The Savannah River Site Environmental Bulletin

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## Notice of Public Availability

### Second Phase: Seventh Five-Year Remedy Review Report for Savannah River Site Operable Units with Groundwater Remedies

The Seventh Five-Year Remedy Review Report is being conducted in five phases for Savannah River Site (SRS) operable units (OUs) with similar remedies. The OUs are grouped by the following remedy types: (1) native soil cover and/or land use controls, (2) groundwater, (3) engineered cover system, (4) geosynthetic or stabilization/solidification cover system, 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 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 Seventh Five-Year Remedy Review Report for SRS OUs 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 Seventh Five-Year Remedy Review Report for SRS OUs with Groundwater Remedies is complete and is being issued by the U.S. Department of Energy-Savannah River Operations Office, with concurrence by the U.S. Environmental Protection Agency – Region 4, and South Carolina Department of Environmental Services.

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 the remedy decisions for SRS OUs with groundwater remedies. The implemented remedies for these OUs include groundwater monitoring activities associated with Monitored Natural Attenuation (MNA) or a Mixing Zone permit as well as interim remedial actions. Groundwater remedies that include operating equipment are discussed in the remedy review report for operating equipment.

In general, 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, and configuration of the 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. Many large plumes consist of several zones that are most efficiently addressed with separate complementary corrective action/remedial technologies. The highest concentrations of contaminants are found in the source zone. The most robust, high-mass-removal technologies, for example electrical resistance heating, are best suited for remediation of the source zone. In the primary plume zone, active remedies such as pump-and-treat, or low energy remedies such as in-situ oxidation may be appropriate. In the dilute fringe zone, contaminants are generally low in concentration and can often be treated with passive techniques.

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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, such as those discussed above, and a technical justification that conditions are favorable for natural attenuation. The groundwater plume should not be expanding significantly, and surface water standards should not be exceeded at the groundwater discharge point.

The Seventh Five-Year Remedy Review Report for SRS OUs with Groundwater Remedies includes 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. No new information has come to light that calls into question the protectiveness of any of the selected remedies. All of the remedies were determined to be protective of human health and the environment. There were no issues or recommendations based on the Seventh Five-Year Remedy Review Report for SRS OUs with Groundwater Remedies.

To aid in the review of the report, a SRS Fact Sheet for the Seventh Five-Year Remedy Review Report for SRS Operable Units with Groundwater Remedies was also developed.

Copies of the Seventh Five-Year Remedy Review Report for SRS OUs 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 (USC)-Aiken campus in Aiken, SC; and
- Thomas Cooper Library Government Information and Maps Department at USC in Columbia, SC

Hard copies of the Seventh Five-Year Remedy Review Report for SRS OUs Units with Groundwater Remedies 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 Seventh Five-Year Remedy Review Report for SRS OUs 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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