

**United States Department of Energy**  
**Statement of Basis/Proposed Plan Fact Sheet**  
**for the G-Area Oil Seepage Basin OU,**  
**SEMS Number: 93**  
**ERD-EN-2018-0031**

**Savannah River Site, South Carolina**

**October 2018**

## INTRODUCTION

This fact sheet summarizes the Statement of Basis/Proposed Plan for the G-Area Oil Seepage Basin (GOSB) Operable Unit (OU) located at the Savannah River Site (SRS). The United States Department of Energy (USDOE) owns and operates the SRS. Hazardous substances that are regulated under the federal law requirements of the Resource Conservation and Recovery Act and the Comprehensive Environmental Response, Compensation, and Liability Act are managed at the SRS as part of a comprehensive cleanup program.

A remedial action is needed at the GOSB OU because pesticides/fungicides have been detected in sediment and surface water that may pose a threat to human health and the environment. The Statement of Basis/Proposed Plan for the GOSB OU outlines the range of remedial alternatives evaluated to clean up the contaminated sediment and surface water and presents the proposed remedy. The document describes how the public can comment on the proposed action through written comments and by participating in public meetings.

## GOSB OU BACKGROUND

The GOSB OU is located southeast of N Area (Central Shops) in relatively flat terrain, approximately 180-feet south of railroad tracks which run adjacent to Central Shops. The area surrounding the GOSB OU is wooded with heavy underbrush and contains no stressed vegetation or other visual indications of contamination. The basin was initially used for liquid waste disposal during SRS plant construction (1951-1956) and later for receipt of effluent from sanitary wastewater treatment plants in Central Shops. The designation of the basin as an oil seepage basin may be a misnomer, as there is no information available to support the use of the basin for disposal of waste oils, radioactive, or hazardous materials.



Prior to 1983, the basin received effluent from a smaller sanitary wastewater treatment facility. The basin received effluent from the Central Shops sanitary wastewater treatment plant from 1983 until 1992. The basin has received no discharges since 1992 and is inactive. Sewer lines leading to the basin have been plugged, and rainwater is typically retained in the basin.

The basin is 150-foot long and 95-foot wide. The interior of the basin is approximately 0.24 acres in size and is 10-foot deep around the edges. The deepest part of the basin is near the center, approximately 16-feet below ground surface. The basin is bordered by berms on the northern and southern sides, 3-feet and 2-feet high, respectively. The remaining two sides of the basin are even with the surrounding grade. Approximately 90 feet of buried 12-inch vitrified clay pipe (previously abandoned in place) runs to the inlet side of the basin. Approximately 510 feet of buried 12-inch vitrified clay pipe discharges southeast of the basin to an intermittent stream. For evaluation purposes, the GOSB OU was segregated into the following four subunits: 1) Basin Interior, 2) Basin Berm, 3) Pipeline, and 4) Effluent Discharge. The Basin Interior subunit was the only subunit where human health and ecological risks were identified. Groundwater is not a subunit of the GOSB OU and will be addressed as part of the Central Shops Groundwater OU.

The GOSB OU is in an area currently designated for industrial use. No current or projected future development of the basin unit is planned, nor is the current land use expected to change. Nevertheless, to support the risk management decision-making, both the hypothetical future residential (unrestricted) and future industrial land use scenarios were evaluated.

## **BASIN INTERIOR SUBUNIT**

Characterization activities in 2009 and 2016-2017 determined that sediment and surface water within the basin were contaminated with pesticides/fungicides from sanitary wastewater effluent and storm water runoff. Inorganics (metals), pesticides, polycyclic aromatic hydrocarbons, and volatile organic compounds were detected in basin media and included chlordane, DDT (and breakdown products such as DDE), and silver. The use of chlordane (banned in 1988) to control termites and ants, and the use of DDT (banned in 1972) as an insecticide, were commonly used in agricultural applications and at SRS. In addition, silver has been a registered pesticide since 1954 and continues to be a common element in the chemical formulations of disinfectants, sanitizers and fungicides.

A risk evaluation determined that exposure to pesticide/fungicide contaminants in basin sediments in the 0- to 1-foot depth interval exceed a risk of 1E-06 for the hypothetical future resident and future industrial worker. A risk greater than or equal to 1E-06 indicates a probability of one (1) chance in 1,000,000 of an individual developing cancer. A hazard quotient (HQ) greater than one (1) was determined for exposure of benthic organisms to contaminants in basin sediments in the

0- to 1-foot depth interval, and exposure of aquatic organisms to contaminants in basin surface water. An HQ greater than or equal to one (1) indicates that an organism could experience adverse health effects from exposure to contaminants. There is no principle threat source material present and no potential for migration of surface contaminants to groundwater.

## **CLEANUP GOALS**

Pesticides/fungicides are present in the Basin Interior subunit at levels that are not suitable for unrestricted use. Cleanup goals for the GOSB OU Interior subunit include the following:

- Protect the future resident receptor from exposure to alpha-chlordane, gamma-chlordane, DDE, dieldrin, and heptachlor epoxide in sediment within the 0- to 1-foot depth interval that exceeds 1E-06 risk-based threshold level. Also, protect the future industrial worker receptor from exposure to the pesticides gamma-chlordane, dieldrin, and heptachlor epoxide in sediment within the 0- to 1-foot interval that exceeds the 1E-06 risk-based threshold level. The primary route of exposure for both scenarios is the incidental ingestion pathway.
- Protect ecological receptors from exposure to alpha-chlordane, gamma-chlordane, DDD, DDE, dieldrin, heptachlor epoxide and silver in sediment within the 0- to 1-foot depth interval that exceed an HQ = 1. The primary route of exposure is the direct contact pathway.
- Protect ecological receptors from exposure to alpha-chlordane, gamma-chlordane, and silver in surface water that exceed an HQ = 1. The primary route of exposure is the direct contact pathway.

## **PROPOSED REMEDY**

The preferred remedial alternative is to dewater the basin and backfill to the natural grade with clean soil followed by the construction of a vegetative cover over the basin footprint. The preferred action supports unrestricted land use, is protective of ecological receptors, and does not require five-year remedy reviews. The United States Environmental Protection Agency and the South Carolina Department of Health and Environmental Control concur with the proposed remedy.

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**Savannah River Site, South Carolina**

**October 2018**

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## **FOR MORE INFORMATION**

The Administrative Record File, which contains the information pertaining to the selection of the response action, is available at the following locations:

US Department of Energy  
Public Reading Room  
Gregg-Graniteville Library  
University of South Carolina – Aiken  
471 University Parkway  
Aiken, South Carolina 29803  
(803) 641-3504

Thomas Cooper Library  
Government Information and Maps  
Department  
University of South Carolina  
1322 Green Street  
Columbia, South Carolina 29208  
(803) 777-4841

Hard copies of the Statement of Basis/Proposed Plan for the G-Area Oil Seepage Basin OU are available at the following locations:

Reese Library  
Government Information Department  
Augusta University  
2500 Walton Way  
Augusta, Georgia 30904  
(706) 737-1744

Asa H. Gordon Library  
Savannah State University  
2200 Tompkins Road  
Savannah, Georgia 31404  
(912) 358-4324

## **HOW TO SUBMIT COMMENTS**

The public comment period for the Statement of Basis/Proposed Plan for the GOSB OU begins November 18, 2018 and ends January 11, 2019. To request a public meeting during the public comment period, to obtain more information concerning this document, or to submit written comments, contact one of the following:

Janet Griffin  
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The South Carolina Department of Health  
and Environmental Control  
Attn: David Scaturro, P.E., P.G., Director  
Division of Waste Management  
Bureau of Land and Waste Management  
2600 Bull Street  
Columbia, South Carolina 29201  
(803) 898-2000