EPA/ROD/R04-97/023
1997

EPA Superfund
Record of Decision:

SAVANNAH RIVER SITE (USDOE)
EPA ID: SC1890008989
OU 05
AIKEN, SC
03/27/1997

United States Department of Energy
Savannah River Site

Record of Decision
Remedial Alternative Selection for the Gunsite 113 Access Road (631-24G) Operable Unit: Final Action (U)

WSRC-RP-96-00833
Revision 1
January 1997

Prepared by:
Westinghouse Savannah River Company
Savannah River Site
Aiken, South Carolina 29808

Prepared for the U.S. Department of Energy Under Contract No. DE-AC09-96SR18500

<IMG SRC 97023B>

CERTIFIED MAIL
RETURN RECEIPT-REQUESTED

4WD-FFB

Mr. Keith Collinsworth, FFA Project Manger
Federal Facility Agreement Section
Division of Site Engineering and Screening
Bureau of Solid & Hazardous Waste Management
South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, SC 29201

SUBJ: Transmittal of Signed Records of Decision for Gunsite 720, Gunsite 113, Grace Road, D-Area Burning/Rubble Pits, F-Area Burning/Rubble Pits, and Silverton Road Waste Unit

Dear Mr. Collinsworth:

Enclosed you will find six (6) Records of decision for the above referenced sites. The Environmental Protection Agency (EPA) has signed these documents. We are transmitting them to you for signature by the State of South Carolina. After signature, please forward the signed documents to the Department of Energy so that they may be included in the administrative record.

If you have any questions, please contact me at (404)562-8551 or Jeffery L. Crane, FFA Project Manger at (404) 562-8546.

<IMG SRC 97023C>

cc: Brian Hennesey, DOE-SRS
Kim Wierzbicki, WSRC
Donna Brumley, DOE-SRS
Hammett DOE-SRS

<IMG SRC 97023D>

RECORD OF DECISION
REMEDIAL ALTERNATIVE SELECTION (U)

The Gunsite 113 Access Road (631-24G)
Operable Unit: Final Action

WSRC-RP-96-00833
Revision 1
January 1997

Savannah River Site
Aiken, South Carolina

Prepared by:

Westinghouse Savannah River Company
for the
U.S. Department of Energy under Contract DE-AC09-96SR18500
Savannah River Operations Office
Aiken, South Carolina

DECLARATION FOR THE RECORD OF DECISION

Unit Name and Location

Gunsite 113 Access Road Unit
(SRS Building 631-24G)
Savannah River Site
Aiken, South Carolina

The Gunsite 113 Access Road Unit (631-24G) is listed as a Resource Conservation and Recovery Act (RCRA) 3004(u) Solid Waste Management Unit/Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Unit in Appendix C of the Federal Facility Agreement (FFA) for the Savannah River Site (SRS).

Statement of Basis and Purpose

This decision document presents the selected remedial action for the Gunsite 113 Access Road Unit located at the Savannah River Site near Aiken, South Carolina. The selected action was developed in accordance with CERCLA, as amended, and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). The selected remedy satisfies both CERCLA and RCRA 3004(u) requirements. This decision is based on the Administrative Record File for this specific RCRA/CERCLA Unit.

Description of the Selected Remedy

The results of the Resource Conservation and Recovery Act Facility Investigation/Comprehensive Environmental Response, Compensation, and Liability Act Remedial Investigation, indicate that the Gunsite 113 Access Road Unit poses no risk to human health or the environment. Therefore, no action is needed at the Gunsite 113 Access Road Unit. This is the final RCRA/CERCLA action for the Gunsite 113 Access Road Unit. The South Carolina Department of Health and Environmental Control has modified the SRS RCRA permit to incorporate the selected remedy.

Declaration Statement

Based on the results of the remedial investigation, no action is necessary at the Gunsite 113 Access Road Unit to ensure the protection of human health and the environment. Since the Gunsite 113 Access Road Unit poses no threat to human health or the environment, and no action is needed, the CERCLA Section 121 requirements are not applicable. This action is protective of human health and the environment and is meant to be a permanent solution, final action, for the Gunsite 113 Access Road Unit. No five-year remedy review is needed or will be performed.

<IMG SRC 97023E>

Date

R. Lewis Shaw
Deputy Commissioner
Environmental Quality Control
South Carolina Department of Health and Environmental Control

DECISION SUMMARY
REMEDIAL ALTERNATIVE SELECTION (U)

The Gunsite 113 Access Road (631-24G)
Operable Unit: Final Action

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Aiken, South Carolina

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Section I. Site and Operable Unit Name, Location, and Description

Introduction

The Savannah River Site (SRS) occupies approximately 803 square kilometers (310 square miles) of land adjacent to the Savannah River, principally in Aiken and Barnwell Counties of South Carolina. SRS is a secured U.S. government facility with no permanent residents. SRS is located approximately 40 kilometers (25 miles) southeast of Augusta, GA and 32 kilometers (20 miles) south of Aiken, SC. Figure 1 shows the location of the Gunsite 113 Access Road Unit in relation to other facilities at SRS.

SRS is owned by the Department of Energy (DOE). Management and operating services are provided by Westinghouse Savannah River Company (WSRC. SRS has historically produced tritium, plutonium, and other special nuclear materials for national defense. SRS has also provided nuclear materials for space program and for medical, industrial, and research efforts. Chemical and radioactive wastes are byproducts of nuclear material production processes.

The Federal Facility Agreement (FFA, 1993) for SRS lists the Gunsite 113 Access Road Unit (631-24G) as a RCRA/CERCLA Unit that required further evaluation. An investigation/assessment process that integrates and combines the RCRA Facility Investigation(RFI) with the CERCLA Remedial Investigation (RI) to determine the actual or potential impact to human health and the environment was performed.

The Gunsite 113 Access Road Unit is located in the northeast comer of SRS, adjacent to the access road leading to Gunsite 113, and is approximately 91.5 meters (300 feet) east of where SRS Road 8 crosses the SRS facility boundary (see Figure 1).

The Gunsite 113 Access Road Unit covers an area of approximately 370 square meters (4,000 square feet) and is a grassy area of weeds and small trees within a mature pine forest. It consists of several small mounds of dirt and asphalt adjacent to die grassy area and several downed pine trees. The mounds of dirt/debris are covered with a thick layer of pine straw, brush, and young trees. The grassy open area, east of the mounds, was identified as the area most likely impacted by possible waste disposal activities. The area contains several dead trees that have fallen down.

The terrain of the Gunsite 113 Access Road Unit is flat with an elevation of about 97.5 meters (320 feet) above mean sea level. There are no major drainage features nearby. The nearest surface water body is a small unnamed creek located approximately 1.3 kilometers (0.8 miles) southeast which feeds into Rosemary Creek, a tributary of Salkehatchie River. The water table is approximately 60 feet below ground surface.

Section II. Operable Unit History and Compliance History

Operable Unit History

During the period from 1955 to 1960, to defend SRS in the event of an air attack, the U.S. Army established onsite anti-aircraft artillery gun emplacements at several locations near the perimeter of SRS. In the mid 1980s, sparse vegetation, dead trees, and small mounds of soil were discovered on a portion of the road leading to Gunsite 113. This arm encompassing a portion of the road, became the Gunsite 113 Access Road Unit.

The area appears to have been used as a surface disposal area for spoil dirt and/or road construction debris. There is no documentation or record of any hazardous substance management, disposal, or any other type of waste disposal at this unit. There is no evidence that any recent disposal activities have occurred in this area or that disposal activities were more widespread. Also, there is no evidence of any burning or excavation at this waste unit.

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There are no structures of any type located at or near the Gunsite 113 Access Road Unit. The only nearby man-made features are SRS Road 8, which passes within 91.5 meters (300 feet) east of the unit and the unpaved access road to Gunsite 113, which passes by the unit.

Compliance History

At SRS, certain waste materials are managed in accordance with the requirements of the Resource Conservation and Recovery Act (RCRA). To comply with the requirements of RCRA, certain SRS activities have required treatment, storage, or disposal, closure, or post-closure RCRA permits.

Non-regulated units, called solid waste management units (SWMU), include any activity where hazardous constituents may remain uncontrolled and may potentially release to the environment. Investigation and potential corrective action for these SWMU(s) are mandated under RCRA 3004(u).

In 1995, SRS received a hazardous waste permit from the South Carolina Department of Health and Environmental Control (SCDHEC), which includes corrective action requirements. Specifically, Part V of the permit mandates that SRS establish and implement a RCRA Facility Investigation (RFI) program to fulfill the requirements specified in Section 3004(u) of RCRA.

Hazardous substances, as defined by CERCLA, are also present in the environment at SRS. On December 21, 1989, SRS was placed on the National Priorities List (NPL). A site placed on the NPL comes under the requirements of CERCLA. In accordance with Section 120 of CERCLA, DOE has entered into an FFA with EPA and SCDHEC to coordinate cleanup activities at SRS into one comprehensive strategy that fulfills RCRA Section 3004(u) and CERCLA assessment, investigation, and response action requirements.

The remedial investigation for the Gunsite 113 Access Road Unit was conducted from March 1988 to early 1993. The results of the RFI/RI Report completed in 1996 (WSRC, 1996a) indicate that the Gunsite 113 Access Road Unit poses no current or future risk to human health or the environment. Therefore, no action is warranted.

According to EPA guidance, if there is no current or potential threat to human health and the environment and no action is warranted, the CERCLA 121 requirements am not triggered. This means that there is no need to evaluate other alternatives.

To fulfill the public participation requirements of CERCLA, RCRA, and the South Carolina Hazardous Waste Management Regulations (SCHWMR), a Statement of Basis/Proposed Plan (WSRC, 1996b) presenting the no action alternative and the rational for selecting the alternative was prepared and submitted for public comments. The public was provided an opportunity to participate in the remedy selection process and was strongly encouraged to submit comments (see Section III). Following the public comment period, all the comments submitted were reviewed and considered. DOE, in consultation with EPA-Region IV and SCDHEC, selected the final action for the Gunsite 113 Access Road Unit. Final selection of the remedial alternative satisfies FFA requirements. SCDHEC has modified the SRS RCRA permit to incorporate the selected remedy.

Section III. Highlights of Community Participation

Public participation requirements are listed in CERCLA Sections 113 and 117. These requirements include the establishment of an Administrative Record File that documents the selection of remedial alternatives and allows for review and comments by the public regarding those alternatives. The Administrative Record File must be established "at or near the facility at issue". The SRS Public Involvement Plan (DOE, 1994) is designed to facilitate public involvement in the decision-making process for permitting, closure, and the selection of remedial alternatives. Section 117(a) of CERCLA requires publication of a notice of any proposed remedial action and provides the public an opportunity to participate in the selection of a remedial action. The Statement of Basis/Proposed Plan for the Gunsite 113 Access Road Unit, which is part of the Administrative Record File, highlights the aspects of the investigation and identifies the preferred action for addressing the Gunsite 113 Access Road Unit.

RCRA provides opportunities for the public to comment on draft permit modifications. Public participation requirements are also listed in SCHWMR R.61-79.124 and require publication of the draft permit modifications. SCHWMR R.61-79.124 requires a brief description and response to all significant comments be made available to the public as a part of the Administrative Record. The preferred alternative proposed in the Statement of Basis/Proposed Plan was also proposed as a draft permit modification under RCRA. Therefore, any comments received on the Statement of Basis/Proposed Plan was also applicable to the draft RCRA permit modification, proposing the

same remedy for the Gunsite 113 Access Road Unit.

The Administrative Record File, which contains the Statement of Basis/Proposed Plan and all the documents (unabridged) listed in the reference section of this document, is available at the EPA-Office and at the following locations:

U.S. Department of Energy
Public Reading Room
Gregg-Graniteville Library
University of South Carolina-Aiken
171 University Parkway
Aiken, SC 29801
(803) 641-3465

Thomas Cooper Library
Government Documents Department
University of South Carolina
Columbia, SC 29208
(803) 777-4866

Similar information is available through the repositories listed below:

Reese Library
Augusta State University
2500 Walton Way
Augusta, GA 309 10
(706) 737-1744

Asa H. Gordon Library
Savannah State University
Tompkins Road
Savannah, GA 31404
(912) 356-2183

The public was notified of a public comment period by mailing the SRS Environmental Bulletin, a newsletter sent to approximately 3500 citizens in South Carolina and Georgia, and through the Aiken Standard, the Allendale Citizen Leader, the Barnwell People-Sentinel, the State, and the Augusta Chronicle newspapers. The public comment period was also announced on local radio stations. The 45-day public comment period began on September 17, 1996 and ended on October 31, 1996. No public comments were received.

Section IV. Scope and Role of Operable Unit within the Site Strategy

The overall strategy for addressing the Gunsite 113 Access Road Operable Unit was to: (1) determine if there had been a release of hazardous substances; (2) determine the nature and extent of any contamination; (3) perform a baseline risk assessment; and (4) evaluate the need for remedial action to address any potential risks to human health and the environment.

The investigation and risk assessment have been completed for the Gunsite 113 Access Road Unit. Since the results of the investigation indicate that the unit poses no risk to human health or the environment, no action was recommended.

The field investigations and soil sampling conducted during 1990 and 1993 also indicate that there are no hazardous substances at the Gunsite 113 Access Road Unit that would impact the groundwater.

The Gunsite 113 Access Road Unit is an operable unit located within the Upper Three Runs Creek watershed. All source control and groundwater operable units located within this watershed will be evaluated to determine their impacts, if any, to the associated streams and wetlands.

SRS will manage all source control units to prevent impact to the watershed. Upon disposition of all source control and groundwater operable units within this watershed, a final comprehensive ROD for the Upper Three Runs Creek watershed will be pursued.

Section V. Summary of Operable Unit Characteristics

Gunsite 113 was one of the anti-aircraft artillery gun emplacements the U.S. Army established at several locations near the perimeter of SRS. The Gunsite 113 Access Road Unit forms a portion of the access road leading to the Gunsite 113. There is no documentation or record of any hazardous substance management or disposal at this unit. There is no evidence that any recent disposal activity has occurred. Also, there is no evidence of any burning or excavation at this waste unit.

Media Assessment

The RFI/RI Work Plan (WSRC, 1990) and RFI/RI Report (WSRC, 1996a) contain detailed information and analytical data for all the investigations conducted and samples taken in the media assessment of the Gunsite 113 Access Road Unit. These documents are part of the Administrative Record File. The results of the RFI/RI Report are summarized below.

Preliminary investigations pertaining to the Gunsite 113 Access Road Unit were conducted in March and April 1988. The investigations consisted of ten soil samples and ten soil gas samples. The soil samples showed trace levels of 1, 2 -dichloroethylene (<11 mg/kg but >3 mg/kg). The soil gas samples contained only low levels of light hydrocarbons (<2500 parts per billion by volume (ppbv) methane). However, these levels were within the range of natural background levels.

In March 1989, a ground penetrating radar survey was conducted. The survey indicated that there was no evidence of any buried or underground objects in the area.

Soils

During 1990, 13 soil samples were collected from four borehole locations. Three boreholes were drilled within the Gunsite 113 Access Road Unit and one outside the unit for background sampling. The soil samples were taken at different depth ranges: 0.9-1.5 meters (3-5 feet); 2.4-3.05 meters (8-10 feet); 3.9-4.6 meters (13-15 feet); and 5.5-6.1 meters (18-20 feet) below the ground surface. The only hazardous substances which were detected and exceeded their respective unit-specific background levels were three metals (arsenic, chromium, and lead). Total cyanide and trace levels of tin, vanadium, and zinc were also detected but, their concentrations were below EPA risk-based concentration (RBC) levels.

In 1993, SRS performed an additional ground penetrating radar survey for the purpose of making a final determination of any buried waste or any other debris at the Gunsite 113 Access Road Unit. Eleven lines totaling about 305 meters (1,000 feet) were acquired. An additional soil gas survey was also completed in 1993. A total of 30 sample locations were established and samples were collected at each location (see Figure 2).

The ground penetrating radar survey confirmed that no buried objects, trenches, or burial pits exist at the Gunsite 113 Access Road Unit.

The levels of volatile and diesel-range organics observed in the soil gas survey were consistent with the normal background levels associated with the natural decay of plant and animal matter.

In summary, data collected during the field investigations conducted in 1990 and 1993 revealed that only three metals (arsenic, chromium, and lead), exceeded their respective unit-specific background levels.

Groundwater

Since the ground penetrating radar surveys and field investigations conducted in 1988 and 1989 and soil sampling conducted in 1990 showed no sign of any hazardous waste disposal at this unit, groundwater investigations were not conducted.

Surface Water/Sediment

No surface water or sediment sampling was conducted because the nearest surface water feature (a small unnamed creek which feeds into Rosemary Creek) is located approximately 1.3 kilometer (0.8

miles) from the Gunsite 113 Access Road Unit.

Section VI. Summary of Operable Unit Risks

Human Health Risks

As part of the RCRA/CERCLA process for the Gunsite 113 Access Road Unit, a risk assessment was performed using data generated during the assessment phase. Detailed information regarding the development of constituents of potential concern, fate and transport of contaminants and risk assessment can be found in the RF/RI Report for the Gunsite 113 Access Road Unit (631-24G)(U), WSRC-RP-95-359, Rev. 1 (WSRC, 1996).

After combining analytical data and eliminating those analytes not detected in any samples, the data were evaluated on the basis of quality with respect to sample quantitation limits, frequency of detection, relative toxic potential of the constituent, laboratory qualifiers and codes, and blanks. The remaining data (constituents detected) were compared to two times the unit-specific background and EPA developed Risk-Based Concentrations (RBCs).

RBCs developed by EPA Region III (EPA, 1995) were used to screen the constituents of potential concern for the Gunsite 113 Access Road Unit. This guidance provides reference doses and carcinogenic potency data for nearly 600 chemicals. These toxicity constants have been combined with "standard" exposure scenarios to calculate RBCs (i.e., chemical concentrations corresponding to fixed levels of risk; a hazard quotient of 1, or a lifetime cancer risk of one in one million). The RBCs are very similar to preliminary remediation goals which are concentration goals for individual chemicals for a specific medium and land use combinations at CERCLA Units.

Following the comparison to unit-specific background levels, it was concluded that three hazardous materials (arsenic, chromium, lead) exceeded their unit-specific background levels. Hence, the maximum concentrations of these three hazardous materials were compared to their respective EPA risk-based concentration action levels to determine if there is any risk to human health and the environment.

The maximum concentration of arsenic detected was 1.8 m/kg which exceeds EPA risk-based concentration level of 0.43 mg/kg for soil ingestion, residential scenario. However, the concentration of the arsenic detected is consistent with the concentration levels found throughout SRS. Arsenic may be naturally occurring or added to the soils as a pesticide prior to SRS activities. The source of the arsenic will be evaluated on a sitewide basis during the implementation of the sitewide Soil Background Study.

The maximum concentration of chromium detected was 24.3 mg/kg. Compared to the EPA risk-based concentration (RBC) level (390 mg/kg, residential), the concentration of chromium is low. However, the concentration of chromium (24.3 mg/kg) was detected in the soil sample collected from the 2.4-3.05 meters (8-10 feet) depth interval. This concentration exceeds EPAs generic soil screening level (SSL) for migration from soil to groundwater which is 19 mg/kg. Also the EPA site specific SSL for transfer of chromium from soil to groundwater for the 2.4-3.05 meters (8-10 feet) depth interval is 13.5 mg/kg. Hence, the maximum concentration of chromium detected exceeds the EPA's SSLs.

Because the chromium concentration detected exceeded both SSLs, it was decided to evaluate further for any potential unacceptable risk to a future resident that may be associated with chromium's migration from soil to groundwater. To determine the potential risk, a chromium leachability model was studied using site specific standard groundwater model equations. The model estimated that the chromium concentration in the groundwater would peak at a concentration of 0.18 mg/L in approximately 1,707 years. The calculated concentration is approximately 0.08 mg/L higher than the 0.10 mg/L accepted maximum contaminant level goal (MCLG) for chromium VI, but is equivalent to the chromium VI risk-based concentration (RBC) for tap water (0.18 mg/L) resulting in a hazard index (HI) equal to 1. For chromium III which has an RBC value of 37.0 mg/L, the HI calculated was 4.9 x 10 -3.

These results for chromium are considered to be conservative since chromium was detected in only one sample at the 2.4- 3.05 meters (8-10 feet) depth interval and peak concentration in the groundwater would be achieved in nearly 2,000 years. Additionally, soil samples collected in the

source borehole at the 0.9-1.5 meters (3-5 feet), 3.9-4.6 meters (13-15 feet), and 5.5- 6.1 meters (18-20 feet) depth intervals did not detect chromium.

The maximum concentration of lead was 4.8 mg/kg. The concentration is significantly lower than the EPA risk-based concentration level (400 mg/kg, residential).

The results of the risk analyses indicated that the concentrations of all hazardous substances analyzed, with the exception of arsenic, were near or below naturally occurring background levels and/or below EPA risk-based concentrations. While the concentration of arsenic detected (1.8 mg/kg) exceeded the EPA risk-based concentration (RBC) level of 0.43 mg/kg for soil ingestion, the level detected is consistent with the levels found throughout SRS and the source of arsenic will be evaluated on a sitewide basis during the implementation of the sitewide Soil Background Study. Hence, there are no constituents of concern (COCs) and there is no impact to human health or the environment from the Gunsite 113 Access Road Unit.

Current Land Use

Since there is no current activity at the Gunsite 113 Access Road Unit, the current land use scenario is not applicable.

Future Land Use

Since there are no contaminants of concern and no determinable risk associated with the Gunsite 113 Access Road Unit, the future land use scenario is not applicable.

Ecological Risks

Based on the physical and analytical data pertaining to this unit, there is no evidence that waste materials were managed or disposed of at the Gunsite 113 Access Road Unit. Therefore, it is reasonable to conclude that this unit presents no significant ecological risk.

Section VII. Description of the No Action Alternative

Based on the unit characterization and risk assessment, the Gunsite 113 Access Road Unit poses no risk to human health and the environment. Therefore, the unit requires no cleanup activities and the no action alternative is recommended for this unit. No additional alternatives were considered for evaluation. However, arsenic will be evaluated on a sitewide basis during the sitewide Soil Background Study.

The no action alternative means that no remedial action will be performed at the Gunsite 113 Access Road Unit. There is no waste to treat, no institutional or engineering controls are required, and there are no applicable or relevant and appropriate requirements (ARARs). Because no further action would be taken, the Gunsite 113 Access Road Unit would remain in its present condition. No costs will be involved for this action.

Since the Gunsite 113 Access Road Unit poses no risk to human health or the environment and no action is warranted at this unit, the CERCLA Section 121 requirements are not applicable. The no action alternative will be the final action for the Gunsite 113 Access Road Unit and there will be no five-year (ROD) review.

This solution is meant to be permanent and effective in both the long and short term, and protective of human health and the environment.

Section VIII. References

DOE (U.S. Department of Energy), 1994, Public Involvement, A plan for the Savannah River Site, Savannah River Operations Office, Aiken, SC.

EPA (U.S. Environmental Protection Agency), 1995, Risk-Based Concentration Table, EPA-III, January-June 1995, dated March 7, 1995.

Federal Facility Agreement, 1993, Federal Facility Agreement for the Savannah River Site, Administrative Docket No. 89-05-FF, (Effective Date: August 16, 1993).

WSRC, 1990, RCRA Facility Investigational Remedial Investigation Plan for the Gunsite 113 Access Road Unit, WSRC-RP-90-996, Westinghouse Savannah River Company, Aiken, SC.

WSRC, 1996a, RCRA Facility Investigational Remedial Investigation Report for the Gunsite 113 Access Road Unit (631-24G)(U) WSRC-RP-95-359, Rev. 1, Westinghouse Savannah River Company, Aiken, SC.

WSRC, 1996b, Statement of Basis/ Proposed Plan for the Gunsite 113 Access Road Unit (631-24G)(U), WSRC-RP-96-218, Rev. 1, Westinghouse Savannah River Company, Aiken, SC.

APPENDIX A

RESPONSIVENESS SUMMARY

No comments received