
United States Department of Energy

Savannah River Site

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**SITE ASSESSMENT,
REMEDICATION &
REVITALIZATION**

**Interim Record of Decision
Remedial Alternative Selection for the
F-Area Tank Farm, Waste Tanks 17 and 20 (U)**

CERCLIS Number: 23

SRR-CWDA-2012-00111

Revision 1

January 2013

**Prepared by:
Savannah River Remediation, LLC
Savannah River Site
Aiken, SC 29808**

Prepared for the U.S. Department of Energy under Contract No. DE-AC09-09SR22505

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**Prepared for
U.S. Department of Energy
and
Savannah River Remediation, LLC
Aiken, South Carolina**

**INTERIM RECORD OF DECISION
REMEDIAL ALTERNATIVE SELECTION (U)**

F-Area Tank Farm, Waste Tanks 17 and 20 (U)

CERCLIS Number: 23

SRR-CWDA-2012-00111

Revision 1

January 2013

**Savannah River Site
Aiken, South Carolina**

Prepared by:

**Savannah River Remediation, LLC
for the**

**U. S. Department of Energy under Contract DE-AC09-09SR22505
Savannah River Operations Office
Aiken, South Carolina**

**IROD for the F-Area Tank Farm,
Waste Tanks 17 and 20 (U), Savannah River Site
January 2013**

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DECLARATION FOR THE INTERIM RECORD OF DECISION

Unit Name and Location

F-Area Tank Farm, Waste Tanks 17 and 20

Comprehensive Environmental Response, Compensation, and Liability Information
System (CERCLIS) Identification Number: OU- 23

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)
Identification Number: SC1 890 008 989

United States Department of Energy

Savannah River Site

Aiken, South Carolina

The F-Area Tank Farm (FTF), Waste Tanks 17 and 20 are listed as a Resource Conservation and Recovery Act (RCRA) 3004(u) Solid Waste Management Unit/CERCLA unit in Appendix C of the Federal Facility Agreement (FFA) for the Savannah River Site (SRS).

The FFA is a legally binding agreement between regulatory agencies [United States Environmental Protection Agency (USEPA), South Carolina Department of Health and Environmental Control (SCDHEC)] and United States Department of Energy (USDOE)] that establishes the responsibilities and schedules for the comprehensive remediation of SRS. The media associated with this operable unit are limited to the FTF Waste Tanks 17 and 20, both of which have been operationally closed and removed from service in 1997 under an approved Industrial Wastewater General Closure Plan [PIT-MISC-0006] and tank-specific closure modules [PIT-MISC-0004, PIT-MISC-0002]. The remaining waste tanks and ancillary equipment within the FTF will be closed under a SCDHEC approved *Industrial Wastewater General Closure Plan for F-Area Waste Tank Systems* (FTF General Closure Plan) [LWO-RIP-2009-00009].

**IROD for the F-Area Tank Farm,
Waste Tanks 17 and 20 (U), Savannah River Site
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This Interim Record of Decision (IROD) for FTF Waste Tanks 17 and 20 does not include the groundwater beneath the FTF or the soils surrounding the tanks. An FTF Groundwater Monitoring Plan (SRNS-RP-2011-00995), which describes the monitoring of the groundwater exiting the FTF in accordance with the FTF General Closure Plan, supports both the operations and operational closure of the FTF waste tanks and includes requirements for reporting the monitoring results. Groundwater and the soils surrounding the tanks will be addressed in the final Record of Decision (ROD) for the FTF Operable Unit (OU).

Statement of Basis and Purpose

This decision document presents the selected interim remedial action for FTF Waste Tanks 17 and 20 following their removal from service in accordance with the South Carolina Pollution Control Act, S. C. Code Ann., Section 48-1-10, et seq. (1985) and all applicable regulations implementing that Act. The interim remedial action was chosen in accordance with CERCLA, as amended by the Superfund Amendments and Reauthorization Act, and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan. This decision is based on the information contained in the Administrative Record File for this site.

The USEPA, SCDHEC and USDOE concur with the selected interim remedy.

Assessment of the Site

The USDOE intends to remove from service FTF waste tanks that do not meet the standards established in the FFA Appendix B (High-Level Radioactive Waste Tank Systems). Waste tanks and ancillary structures removed from service are cleaned and stabilized with grout to reduce the risk of a leak to the environment and to provide a stable form that is protective of human health and the environment. A 2007 performance assessment (SRS-REG-2007-00002) determined that exposure to stabilized residual material in the waste tanks is unlikely during the interim period from the time the individual waste tanks are removed from service under the Industrial Wastewater

Construction Permit until final closure of the entire FTF OU under a final ROD. The potential risk lies in the premature degradation of the engineered barriers which could increase the likelihood of exposure. The parties to the FFA determined that the interim response action selected in this IROD was needed for FTF Waste Tanks 17 and 20 to ensure that the integrity of the stabilization actions were protected from significant damage or deterioration during the interim period.

Description of the Selected Remedy

The selected remedy for the FTF Waste Tanks 17 and 20 is Annual Visible Engineered Barriers Inspection and Maintenance.

The selected remedy includes annual inspections of the engineered barriers (i.e., visible grout) for physical integrity. In addition, the area will be inspected for excessive water accumulation that may cause premature degradation of the engineered barriers associated with stabilization of the waste tanks. The interim action is limited to any maintenance deemed necessary from the annual inspections from the time of removal of a waste tank or associated ancillary equipment from service until a final ROD is issued for the FTF OU. This alternative was selected because it is protective of human health and the environment, and the requirement for annual inspections is consistent with the maintenance and monitoring requirements of the FTF General Closure Plan and the tank-specific closure modules.

The current land use for the FTF is industrial with USDOE maintaining control of the land. The FTF is currently in the operational phase and access is controlled by SRS facility security and administrative controls. Land use controls (LUCs) are not part of the interim action. LUCs may be included in the final ROD for the FTF OU in order to prevent inadvertent exposure to remaining contaminated media and to ensure the integrity of the closed tanks by restricting land and groundwater uses within the FTF OU. The Land Use Control Implementation Plan (LUCIP) will be deferred until final closure of the entire FTF OU.

An SRS RCRA permit modification has been submitted to reflect selection of the interim remedy using the procedures under 40 Code of Federal Regulation Part 270, and South Carolina Hazardous Waste Management Regulations R.61-79.264.101; 270.

Statutory Determinations

This interim action is protective of human health and the environment, complies with Federal and State requirements that are legally applicable or relevant and appropriate to the limited-scope remedial action, and is cost-effective. This action is interim and is not intended to utilize permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable. Because this action does not constitute the final remedy for the FTF OU, the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as a principal element will be addressed by the final response action. Subsequent actions may be needed to fully address the threats posed by the conditions at the FTF OU.

Because this interim remedy will result in hazardous substances, pollutants, or contaminants remaining on-site above levels that allow for unlimited use and unrestricted exposure, a statutory review will be conducted to ensure that the interim remedy continues to provide adequate protection of human health and the environment within five years after commencement of the interim remedial action. Because this is an IROD, review of the FTF Waste Tanks 17 and 20 interim remedy will continue as USDOE continues to develop final remedial alternatives for the FTF OU.

Data Certification Checklist

This IROD provides the following information:

- Because of ongoing operations, a CERCLA risk assessment has not been conducted and is not required to support the interim action. A performance assessment has been prepared and has determined that exposure to stabilized residual waste in the tanks is unlikely during the interim period.
-

- Since this is an interim action, quantitative remediation goals (i.e., site-specific concentrations used as cleanup criteria) are not specified.
 - The current land use for the FTF is industrial. The FTF is currently in the operational phase and access is controlled by SRS facility security and administrative controls. Additional controls are not part of the interim action. A final remedial action will be evaluated and conducted in the future for the entire FTF OU according to the requirements of the FFA. The LUCIP will be deferred until final closure of the entire FTF OU.
 - The selected interim action remedy for the FTF Waste Tanks 17 and 20 is Alternative A-3, Annual Visible Engineered Barriers Inspection and Maintenance. The estimated total present worth cost is \$214, 737.
 - An Explanation of Significant Difference will be used to apply the interim remedy selected in this IROD to each additional FTF waste tank, group of waste tanks, and associated ancillary structures when satisfactorily removed from service in accordance with a SCDHEC approved closure module.
-

IROD for the F-Area Tank Farm,
Waste Tanks 17 and 20 (U), Savannah River Site
January 2013

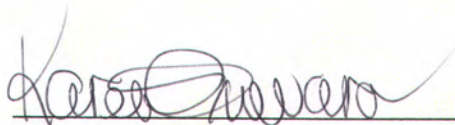
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3/20/13

Date



Karen Guevara

Assistant Manager for Infrastructure and Environmental Stewardship
U. S. Department of Energy
Savannah River Operations Office

4/2/13

Date



Franklin E. Hill

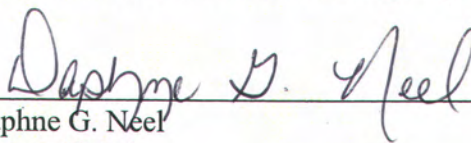
Director

Superfund Division

U. S. Environmental Protection Agency - Region 4

4/12/13

Date



Daphne G. Neel

Bureau Chief

Bureau of Land and Waste Management

South Carolina Department of Health and Environmental Control

**IROD for the F-Area Tank Farm,
Waste Tanks 17 and 20 (U), Savannah River Site
January 2013**

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**DECISION SUMMARY
REMEDIAL ALTERNATIVE SELECTION (U)**

F-Area Tank Farm, Waste Tanks 17 and 20 (U)

CERCLIS Number: 23

**SRR-CWDA-2012-00111
Revision 1**

January 2013

**Savannah River Site
Aiken, South Carolina**

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LIST OF ACRONYMS AND ABBREVIATIONS

ARAR	Applicable or Relevant and Appropriate Requirement
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CFR	Code of Federal Regulation
EIS	Environmental Impact Statement
ESD	Explanation of Significant Difference
FFA	Federal Facility Agreement
FTF	F-Area Tank Farm
GSA	General Separations Area
IASB/PP	Interim Action Statement of Basis/Proposed Plan
ICMI	Interim Corrective Measures Implementation
IRAIP	Interim Remedial Action Implementation Plan
IROD	Interim Record of Decision
km	kilometer
LLC	Limited Liability Company
LUC	Land Use Controls
LUCIP	Land Use Control Implementation Plan
mi	mile
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
OU	Operable Unit
RAO	Remedial Action Objective
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
RG	Remedial Goal
RGO	Remedial Goal Option
ROD	Record of Decision
SARA	Superfund Amendments and Reauthorization Act
SCDHEC	South Carolina Department of Health and Environmental Control
SCHWMR	South Carolina Hazardous Waste Management Regulations
SRNS	Savannah River Nuclear Solutions, LLC
SRR	Savannah River Remediation
SRS	Savannah River Site
USDOE	United States Department of Energy
USEPA	United States Environmental Protection Agency
WSRC	Washington Savannah River Company, LLC

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I. SAVANNAH RIVER SITE AND OPERABLE UNIT NAME, LOCATION, AND DESCRIPTION

Unit Name, Location, and Brief Description

F-Area Tank Farm, Waste Tanks 17 and 20

Comprehensive Environmental Response, Compensation, and Liability
Information System (CERCLIS) Identification Number: OU-23

Comprehensive Environmental Response, Compensation and Liability Act
(CERCLA) Identification Number: SC1 890 008 989

United States Department of Energy (USDOE)

Savannah River Site

Aiken, South Carolina

Savannah River Site (SRS) occupies approximately 802.9 km² (310 mi²) of land adjacent to the Savannah River, principally in Aiken and Barnwell counties of South Carolina (Figure 1). SRS is located approximately 40.2 km (25 mi) southeast of Augusta, Georgia, and 32.1 km (20 mi) south of Aiken, South Carolina.

The USDOE owns SRS, which historically produced tritium, plutonium, and other special nuclear materials for national defense and the space program. Chemical and radioactive wastes are by-products of nuclear material production processes. Hazardous substances, as defined by the CERCLA, are currently present in the environment at SRS.

The Federal Facility Agreement (FFA) (WSRC-OS-94-42) for SRS lists the F-Area Tank Farm (FTF) as a Resource Conservation and Recovery Act (RCRA) Solid Waste Management Unit/CERCLA unit requiring further evaluation. The FTF was evaluated through a performance assessment (SRS-REG-2007-00002) to determine the actual or potential impact to human health and the environment of releases of hazardous substances to the environment.

This Interim Record of Decision (IROD) is being issued by USDOE for FTF Waste Tanks 17 and 20, with concurrence by the United States Environmental

Protection Agency (USEPA) and the South Carolina Department of Health and Environmental Control (SCDHEC). The selected interim remedial action for FTF Waste Tanks 17 and 20 is annual visible engineered barriers inspections and maintenance necessary as a result of the inspections. An Explanation of Significant Difference (ESD) will be used to apply the interim remedy selected in this IROD to each additional FTF waste tank, group of waste tanks, and associated ancillary structures when satisfactorily removed from service in accordance with a SCDHEC approved closure module.

II. SITE AND OPERABLE UNIT COMPLIANCE HISTORY

SRS Operational and Compliance History

The primary mission of SRS has been to produce tritium, plutonium, and other special nuclear materials for our nation's defense programs. Production of nuclear materials for the defense program was discontinued in 1988. SRS has provided nuclear materials for the space program, as well as for medical, industrial, and research efforts up to the present. Chemical and radioactive wastes are by-products of nuclear material production processes. These wastes have been treated, stored, and in some cases, disposed at SRS. Past disposal practices have resulted in soil and groundwater contamination.

Hazardous waste materials handled at SRS are managed under RCRA, a comprehensive law requiring responsible management of hazardous waste. Certain SRS activities require SCDHEC operating or post-closure permits under RCRA. SRS received a RCRA hazardous waste permit from the SCDHEC, which was most recently renewed on September 30, 2003. Module VIII of the Hazardous and Solid Waste Amendments portion of the RCRA permit mandates corrective action requirements for non-regulated solid waste management units subject to RCRA 3004(u).

On December 21, 1989, SRS was included on the National Priorities List (NPL). The inclusion created a need to integrate the established RCRA facility

investigation (RFI) program with CERCLA requirements to provide for a focused environmental program. In accordance with Section 120 of CERCLA 42 United States Code Section 9620, USDOE has negotiated a FFA (WSRC-OS-94-42) with USEPA and SCDHEC, entered into pursuant to Section 120 of CERCLA and Sections 3008(h) and 6001 of RCRA, as amended by the Hazardous and Solid Waste Amendments of 1984 (hereinafter jointly referred to as RCRA) and the Atomic Energy Act of 1954, to coordinate remedial activities at SRS into one comprehensive strategy which fulfills these dual regulatory requirements. USDOE functions as the lead agency for remedial activities at SRS, with concurrence by the USEPA - Region 4 and the SCDHEC.

Operable Unit Operational and Compliance History

The FTF is located at the SRS in Aiken County, South Carolina (see Figures 1 and 2) and was constructed to receive waste generated by various SRS production, processing, and laboratory facilities. The FTF consists of twenty-two (22) liquid waste storage tanks (i.e., waste tanks) and ancillary structures. Waste storage and removal operations are governed by an Industrial Wastewater Construction Permit (DHEC_01-25-1993). The FTF is a 22-acre site within the General Separations Area (GSA), which encompasses E, F, H, S, J, and Z-Areas (Figure 3), consisting of 22 liquid waste storage tanks, two evaporator systems, over 45,000 linear feet of transfer pipelines, six diversion boxes, one catch tank, a concentrate transfer system tank and three pump pits. Figure 2 shows the general layout of FTF.

There are three major waste tank types in FTF that range in size from 750,000 gallons (Type I tanks) to 1.3 million gallons (Type III/IIIA and Type IV tanks) that have varying degrees of secondary containment and intra-tank interference, such as cooling coils and columns. FTF was constructed to receive waste generated by various SRS production, processing, and laboratory facilities and has treated and stored wastes that were contaminated with heavy metals and high

levels of radioactivity. Further information can be found in the FTF Waste Tanks 17 and 20 Closure Modules [PIT-MISC-0004, PIT-MISC-0002].

The use of FTF allowed for isolation of these wastes from the environment, SRS workers, and the public. With FTF and its sister facility, H-Area Tank Farm, facilities are in place to pretreat the accumulated sludge and salt solutions (supernate) to enable the management and treatment of these wastes within other SRS facilities [i.e., Defense Waste Processing Facility and Saltstone Production Facility]. These treatment facilities convert the sludge and supernate to more stable forms suitable for permanent disposal in a Federal Repository or the Saltstone Disposal Facility, as appropriate.

Waste Tanks 17 and 20 are Type IV tanks constructed in the late 1950s. These waste tanks have a single carbon steel liner with a spherical reinforced concrete domed roof. Type IV waste tanks are 85 feet in diameter and approximately 34 feet high at the side wall, with a nominal operating capacity of 1.3 million gallons. There is no secondary containment structure for Type IV tanks. The concrete vault for Type IV tanks was built around the primary tank using a technique called "Shotcrete". The core wall was constructed of 0.75 to 1.5 inch thick layers of "Shotcrete". The core wall is 7 inches thick at the top and 11 inches at the bottom [SRS-REG-2007-00002]. Figure 4 provides a cross-sectional sketch of a typical Type IV tank.

The Type IV tanks have side wall penetrations for 3 inch stainless steel inlet and outlet transfer lines and 4 inch cascade line penetrations. The transfer lines and cascade lines penetrate the enclosing concrete vault and the primary steel liner just below the dome ring, approximately 34.5 feet above the tank bottom. In addition to the liquid transfer line penetrations, carbon steel ventilation pipes traverse the vault through the riser wall [SRS-REG-2007-00002].

FTF Closure Activities

FTF Waste Tanks 17 and 20 were operationally closed and removed from service in 1997 in accordance with an approved General Closure Plan [PIT-MISC-0006] and tank-specific closure modules [PIT-MISC-0004, PIT-MISC-0002]. No ancillary structures were included in the removal from service of Waste Tanks 17 and 20. The tanks were isolated from the remaining operating facility and filled with grout. Some equipment installed in the tanks or used in the waste removal and cleaning activities (i.e., slurry pumps, transfer jet, thermowells) were entombed in the grout as part of the stabilization process. The visible surface of Waste Tanks 17 and 20 include the domed roof and risers that have been enclosed in grout. Since operational closure of Waste Tanks 17 and 20, inspections continue to be conducted as part of the overall inspections of the FTF in accordance with their respective closure modules.

USDOE is in the process of removing the remaining FTF waste tanks and ancillary structures from service in accordance with the FTF General Closure Plan (LWO-RIP-2009-00009) and tank system-specific closure modules. FTF waste storage and removal operations are governed by the Industrial Wastewater Construction Permit issued by SCDHEC on January 25, 1993 and the FFA. The State of South Carolina has authority for approval of wastewater treatment facility operational closure under Chapter 61, Article 82 of the SCDHEC Regulations. The *Ronald Reagan National Defense Authorization Act (NDAA) for Fiscal Year 2005*, Section 3116 (a) specifies the criteria for USDOE to use to determine whether residuals remaining in the waste tanks systems can be managed as non-high level waste at a USDOE site in a "covered state" [e.g., South Carolina] where activities are regulated by the state's approved closure plan or permit, authority for the approval or issuance of which is conferred on the State outside of Section 3116. The *Basis for Section 3116 Determination for Closure of F-Tank Farm at the Savannah River Site* (DOE/SRS-WD-2012-001) has been prepared for FTF, based in part on the environmental protection information provided in

the FTF performance assessment (SRS-REG-2007-00002). Based on the information in the Section 3116 Basis Document and the performance assessment, the Secretary of Energy, in consultation with the Nuclear Regulatory Commission, has determined that the residual material in the waste tank systems can be managed as non-high level waste.

In May 2002, USDOE issued an Environmental Impact Statement (EIS) on waste tank cleaning and stabilization alternatives [DOE-EIS-0303]. The USDOE studied five alternatives: 1) empty, clean and fill waste tank with grout, 2) empty, clean and fill waste tank with sand, 3) empty, clean and fill waste tank with saltstone, 4) clean and remove waste tanks, and 5) no action. Evaluations described in the EIS showed the "Empty, clean and fill waste tank with grout" alternative to be the best approach to minimize human health and safety risks associated with closure of the waste tank [DOE-EIS-0303 ROD].

Waste tanks and ancillary structures are removed from the Industrial Wastewater Construction Permit when they are stabilized and removed from service. The parties to the FFA determined that a CERCLA interim remedial action was needed for FTF tanks and ancillary facilities to address the time period between removal from the Industrial Wastewater Construction Permit until a final response action is developed for the FTF Operable Unit (OU). The interim remedial action would detect any conditions of the tank systems that would require FTF maintenance actions during the interim period.

The FTF General Closure Plan requires monitoring of the groundwater under an approved FTF Groundwater Monitoring Plan, which describes the monitoring of the groundwater exiting the FTF. This Groundwater Monitoring Plan supports both the operation and removal from service of the FTF waste tanks and includes requirements for reporting the monitoring results [SRNS-RP-2011-00995]. The Groundwater Monitoring Plan remains in effect until all waste tanks have been removed from service, at which time a remedial decision, if any is needed, will be

made for the FTF OU which includes the stabilized tanks, the surrounding soils and the groundwater below the FTF. Because these requirements are already in place, groundwater monitoring is not being considered as part of this interim action.

III. HIGHLIGHTS OF COMMUNITY PARTICIPATION

Both RCRA and CERCLA require the public to be given an opportunity to review and comment on the draft permit modification and proposed remedial alternative. Public participation requirements are listed in South Carolina Hazardous Waste Management Regulation (SCHWMR) R.61-79.124 and Sections 113 and 117 of CERCLA (42 United States Code Sections 9613 and 9617). These requirements include establishment of an Administrative Record File that documents the investigation and selection of the remedial alternative for addressing FTF Waste Tanks 17 and 20. The Administrative Record File must be established at or near the facility at issue.

The SRS FFA Community Involvement Plan (WSRC-RP-96-120) is designed to facilitate public involvement in the decision-making process for permitting, closure, and the selection of remedial alternatives. The plan addresses the requirements of RCRA, CERCLA, and the National Environmental Policy Act, 1969. SCHWMR R.61-79.124 and Section 117(a) of CERCLA, as amended, require the advertisement of the draft permit modification and notice of any proposed remedial action and provide the public an opportunity to participate in the selection of the remedial action. The *Interim Action Statement of Basis/Proposed Plan for the F-Area Tank Farm, Waste Tanks 17 and 20* (SRR-CWDA-2011-00103), a part of the Administrative Record File, highlights key aspects of the investigation and identifies the preferred action for addressing FTF Waste Tanks 17 and 20.

The FFA 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
171 University Parkway
Aiken, South Carolina 29801
(803) 641-3465

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

The RCRA Administrative Record File for SCDHEC is available for review by the public at the following locations:

The South Carolina Department of
Health and Environmental Control
Bureau of Land and Waste
Management
8911 Farrow Road
Columbia, South Carolina 29203
(803) 896-4000

The South Carolina Department of Health
and Environmental Control – Midlands
Region BEHS Aiken
206 Beaufort Street, Northeast
Aiken, South Carolina 29801
(803) 642-1637

The public was notified of the public comment period through mailings of the *SRS Environmental Bulletin*, a newsletter sent to citizens in South Carolina and Georgia, and through notices in the *Aiken Standard*, the *Allendale Citizen Leader*, the *Augusta Chronicle*, the *Barnwell People-Sentinel*, and *The State* newspaper. The public comment period was also announced on local radio stations.

The Interim Action Statement of Basis/Proposed Plan (IASB/PP) 45-day public comment period began on August 14, 2012 and ended on September 28, 2012. A Responsiveness Summary, prepared to address any comments received during the public comment period, is provided in Appendix A of the IROD. A Responsiveness Summary will also be available with the final RCRA permit.

IV. SCOPE AND ROLE OF THE SITE

The scope of the interim response action is limited to the interim action that the individual FTF waste tanks and ancillary structures will be subject to from the time of removal from the Industrial Wastewater Construction Permit until the final response action for the closure of the entire FTF OU. The interim remedial

action selected in this IROD is specific for FTF Waste Tanks 17 and 20, both of which have been operationally closed and removed from service under an approved General Closure Plan [PIT-MISC-0006] and tank-specific closure modules [PIT-MISC-0004, PIT-MISC-0002]. This IROD does not include the groundwater beneath the FTF or the soils surrounding the tanks. An FTF Groundwater Monitoring Plan (SRNS-RP-2011-00995), which describes the monitoring of the groundwater exiting the FTF in accordance with the FTF General Closure Plan, supports both the operations and operational closure of the FTF waste tanks and includes requirements for reporting the monitoring results. Groundwater and the soils surrounding the tanks will be addressed in the final Record of Decision (ROD) for the FTF OU.

An ESD will be used to apply the interim remedy selected in this IROD to each additional FTF waste tank, group of waste tanks, and associated ancillary structures when satisfactorily removed from service in accordance with a SCDHEC approved closure module.

V. OPERABLE UNIT CHARACTERISTICS

The FTF is in F-Area which is located in the central region of SRS. Figure 3 presents the area known as the GSA. The GSA is located atop a ridge running southwest-northeast that forms the drainage divide between Upper Three Runs to the north and Fourmile Branch to the south.

Much of SRS lies within the Aiken Plateau, which slopes to the southeast at approximately 5 feet per mile. The Plateau is bounded by the Savannah and Congaree Rivers and extends from the fall line to the Orangeburg Escarpment. The highly dissected surface of the Aiken Plateau is characterized by broad interfluvial areas with narrow, steep-sided valleys.

VI. CURRENT AND POTENTIAL FUTURE SITE AND RESOURCE USES

Land Uses

According to the Savannah River Site Future Use Project Report [DOE_01-29-1996], residential uses of SRS land should be prohibited. The FTF is located in an area designated exclusively for industrial use. The FTF is currently in an operational phase. The future land use of the FTF OU is reasonably anticipated to remain industrial with USDOE maintaining control of the land. No current or projected future development of the FTF is planned. The Land Use Control Implementation Plan (LUCIP) will be deferred until final closure of the entire FTF OU.

Groundwater Uses/Surface Water Uses

There is no current or projected future use of the groundwater or surface water as a drinking water source at the FTF OU. According to the Land Use Control Assurance Plan [WSRC-RP-98-4125], SRS property is to be owned and institutionally controlled by USDOE.

VII. SUMMARY OF OPERABLE UNIT RISKS

The FTF is located in an area designated exclusively for industrial use. The FTF is currently in an operational phase. Because of ongoing operations, a CERCLA risk assessment has not been conducted and is not required to support this interim action. Pursuant to DOE Order 435.1, a performance assessment has been prepared and has determined that exposure to stabilized residual material in the tanks is unlikely during the interim period [SRS-REG-2007-00002]. The potential risk lies in the premature degradation of the engineered barriers which could increase the likelihood of exposure. More specific findings from a baseline risk assessment and exposure levels for the FTF will be included for all media in the subsequent final action ROD.

VIII. REMEDIAL ACTION OBJECTIVES AND REMEDIAL GOALS

Remedial action objectives (RAOs) are media- or OU-specific objectives for protecting human health and the environment. RAOs describe what the remediation must accomplish and are used as a framework for developing remedial alternatives. The RAOs are based on the nature and extent of contamination, threatened resources, and the potential for human and environmental exposure.

The interim RAO for FTF Waste Tanks 17 and 20 is to conduct annual visible engineered barriers inspections and maintenance of the waste tanks that have been operationally closed and removed from service. If evidence of premature degradation is found, appropriate action, including any necessary maintenance or repairs, will be taken. Following removal from service of all FTF waste tanks and ancillary structures, an evaluation will be conducted for all media (e.g., soils, structures, equipment) in the FTF OU and additional RAOs will be established at that time.

Remedial Goals

Remedial goal options (RGOs) provide a range of cleanup goals and are typically identified along with the RAOs. The final cleanup goals or remedial goals (RGs) for the selected remedy are chosen from the RGOs and documented in a ROD. RGs are either concentration levels that correspond to a risk or hazard or are based on Applicable or Relevant and Appropriate Requirements (ARARs). Since this interim action does not require the cleanup of contaminated media (e.g., soils, sediment or groundwater), no quantitative RGs are specified.

Applicable or Relevant and Appropriate Requirements

Section 121(d) of CERCLA, as amended by the Superfund Amendments and Reauthorization Act (SARA), requires that remedial actions for cleanup of hazardous substances must comply with requirements and standards set forth

under federal and state environmental laws and regulations that are applicable or relevant and appropriate (i.e., ARARs). ARARs include only federal or state environmental or facility laws and regulations and do not include occupational safety or worker protection requirements. SARA requires that the remedial action for a site meet all ARARs unless a waiver is invoked.

ARARs consist of two sets of requirements: those that are applicable, and those that are relevant and appropriate. Applicable requirements are those substantive standards that specifically address the situation at a CERCLA site and are promulgated under federal or state environmental laws. If a requirement is not applicable, it may still be relevant and appropriate. "Applicability" is a legal and jurisdictional determination, while the determination of "relevant and appropriate" relies on professional judgment, considering environmental and technical factors at the site. A requirement may be "relevant" in that it covers situations similar to that at the site, but may not be "appropriate" to apply for various reasons and, therefore, not well suited to the site. In some situations, only portions of a requirement or regulation may be judged relevant and appropriate; if a requirement is applicable, however, all substantive parts must be followed. In addition to ARARs, many federal and state environmental and public health programs include criteria, guidance, and proposed standards that are not legally binding, but provide useful approaches or recommendations. Such information is required to be considered when remedial goals are developed.

There are no ARARs for the preferred interim remedial alternative, which is annual visible engineered barriers inspections and maintenance for stabilized FTF Waste Tanks 17 and 20. USDOE will continue to implement requirements for appropriate inspections, as described in USDOE Order 435.1 and its associated manual and guide for the operation of the FTF. USDOE Order 435.1 is a To-Be-Considered criterion for inspections.

Alternative A-3 includes the maintenance activities described for Alternative A-2, but increases the frequency of the inspections to every year for consistency with the requirements of the FTF General Closure Plan.

The detailed cost estimates for the interim remedial alternatives are provided in Appendix B.

X. COMPARATIVE ANALYSIS OF ALTERNATIVES

The NCP [40 CFR 300.430(e)(9)] sets forth nine evaluation criteria to provide the basis for evaluation of alternatives and selection of a remedy. The nine criteria were derived from the statutory requirements of CERCLA Section 121 and fall into categories of threshold criteria, primary balancing criteria, and modifying criteria. Modifying criteria (i.e., state or support agency acceptance and community acceptance) will be evaluated after the public comment period for the IASB/PP. The nine evaluation criteria are detailed in Table 1.

Comparative Analysis of FTF Waste Tanks 17 and 20 Alternatives

A comparative analysis of the three interim remedial alternatives evaluated is provided in Table 2. Below is a summary of the comparison of alternatives.

Overall Protection of Human Health and the Environment

The remedial alternatives are assessed to determine the degree to which each alternative eliminates, reduces, or controls threats to human health and the environment through treatment, engineering methods, or institutional controls. Alternative A-1 is protective of human health and the environment because of the engineering controls (i.e., tank cleaning and grouting) implemented under the FTF General Closure Plan and waste tank-specific closure modules. Alternative A-2 provides additional protection with visual inspections and maintenance to prevent premature degradation associated with stabilization actions. The frequency of every three years for the visual inspections is sufficient because the remainder of the FTF waste tanks will be operational and other inspection activities will be taking place in the general area of the stabilized waste tanks. Alternative A-3 increases the frequency of the inspections to annually.

Compliance with ARARs

ARARs are cleanup standards, standards of control and other substantive requirements, criteria or limitations promulgated under federal, state, or local environmental laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site. Section 121(d) of CERCLA, as amended by the SARA requires that remedial actions comply with requirements and standards set forth under federal and state environmental laws.

There are no ARARs for the preferred interim remedial alternative, which is annual inspections for stabilized FTF Waste Tanks 17 and 20. USDOE will continue to implement requirements for appropriate inspections, as described in USDOE Order 435.1 and its associated manual and guide for the operation of the FTF. DOE Order 435.1 is a To Be Considered criterion for inspection.

Short-Term Effectiveness

The remedial alternatives are assessed considering factors relevant to implementation of the remedial action, including risks to the community during implementation, impacts to workers, potential environmental impacts (e.g., air emissions), and the time until protection is achieved. Alternative A-1 is effective for the interim period because of the engineering controls (i.e., tank cleaning and grouting) implemented under the FTF General Closure Plan and waste tank-specific closure modules. Alternative A-1 poses no short-term risk to human receptors or the environment as a result of tank stabilization and this alternative requires no time to implement. Alternative A-2 and Alternative A-3 pose no additional risk to human health or the environment and will be protected by health and safety plans and procedures. Both Alternatives A-2 and A-3 are readily implemented following waste tank stabilization. Inspections and maintenance required by Alternatives A-2 and A-3 will assure protection of workers and

identify potential environmental impacts during the interim period until such time as all tanks are closed and a final ROD is implemented.

Long-Term Effectiveness and Permanence

The remedial alternatives are assessed based on their ability to maintain reliable protection of human health and the environment after implementation. Because this is an interim measure, long-term effectiveness and permanence do not apply to any of the three alternatives.

Reduction of Toxicity, Mobility, or Volume through Treatment

The remedial alternatives are assessed based on the degree to which they employ treatment that reduces toxicity (the harmful nature of the contaminants), mobility (the ability of the contaminants to move through the environment), or volume of contaminants associated with the unit. This interim measure does not involve treatment so the reduction of toxicity, mobility, or volume through treatment does not apply to any of the three alternatives. Stabilization of the tanks and residual waste, which did reduce the volume and mobility of the waste (i.e., tank cleaning and grouting in accordance with the General Closure Plan and tank-specific closure modules), is not part of this interim response action.

Implementability

The remedial alternatives are assessed by considering the difficulty of implementing the alternative, including technical feasibility, constructability, reliability of technology, ease of undertaking additional remedial actions (if required), monitoring considerations, administrative feasibility (regulatory requirements), and availability of services and materials. No implementation is associated with Alternative A-1. Alternatives A-2 and A-3 are readily implemented following waste tank stabilization.

Cost

The evaluation of remedial alternatives must include capital and operations and maintenance costs. Present value costs are estimated within +50 and -30% according to USEPA guidance, with a graduated discount factor for increasing operations and maintenance time. There is no interim action cost for Alternative A-1 because no additional action is taken. The cost estimates for Alternatives A-2 and A-3 were prepared from information available at the time of the estimate and the final costs may vary from the estimates presented in Appendix B. Currently, the assumed time frame for Alternatives A-2 and A-3 is 14 years, at which time a final ROD will be issued for the FTF OU.

Alternative A-1 (\$0) is less expensive than Alternative A-2 (\$126,568) and Alternative A-3 (\$214,737).

XI. THE SELECTED REMEDY

The selected interim action alternative for FTF Waste Tanks 17 and 20 is Alternative A-3, to conduct annual visible engineered barriers inspections and maintenance necessary as a result of inspections in the interim period until final remedial actions for the FTF OU are determined. Although Alternative A-3 is more expensive, this alternative is preferred over Alternative A-2 because the requirement for annual inspections is consistent with the maintenance and monitoring requirements of the FTF General Closure Plan and the Waste Tanks 17 and 20 Closure Modules.

Based on information currently available, the lead agency (USDOE) believes the selected alternative provides the best balance of tradeoffs among the other alternatives with respect to the evaluation criteria. The USDOE expects the selected alternative to satisfy the statutory requirements in CERCLA Section 121(b) to: (1) be protective of human health and the environment and (2) be cost-effective.

Cost Estimate for the Selected Remedy

A detailed, activity-based breakdown of the estimated costs associated with implementing and maintaining the selected remedy is presented in Appendix B. A summary of the costs is provided below:

Total Estimated Capital Cost: \$0

Total Estimated O&M Cost: \$214,737

Total Estimated Cost: \$214,737

The information in the cost estimate table is based on the best available information regarding the anticipated scope of the remedial alternative. Changes in the cost elements are likely to occur as a result of new information and data collected during the engineering design of the remedial alternative. Major changes may be documented in the form of a memorandum in the Administrative Record File, an ESD, or a ROD amendment. This is an order-of-magnitude engineering cost estimate that is expected to be within +50 and -30 percent of the actual project cost.

Estimated Outcomes of Selected Remedy

The interim RAO for FTF Waste Tanks 17 and 20 is to detect premature degradation of the engineered barriers associated with stabilization of the waste tanks that have been operationally closed and removed from service and implement any necessary maintenance actions to prevent degradation. The selected interim remedy meets the RAO through annual visual inspections of the engineered barriers and maintenance.

The current land use for the FTF is industrial. The FTF is currently in the operational phase and access is controlled by SRS facility security and administrative controls. Additional controls are not part of the interim action. A final remedial action will be evaluated and conducted in the future for the entire

FTF OU according to the requirements of the FFA. The LUCIP will be deferred until final closure of the entire FTF OU.

This IROD for FTF Waste Tanks 17 and 20 does not include the groundwater beneath the FTF or the soils surrounding the tanks. An FTF Groundwater Monitoring Plan (SRNS-RP-2011-00995), which describes the monitoring of the groundwater exiting the FTF in accordance with the FTF General Closure Plan, supports both the operations and operational closure of the FTF waste tanks and includes requirements for reporting the monitoring results. Groundwater will be addressed in the final ROD for the FTF OU.

Waste Disposal and Transport

Because the selected interim remedial action is annual visible engineered barriers inspection and maintenance, there will be no waste streams generated during the interim remedial action.

XII. STATUTORY DETERMINATIONS

This interim action was selected because it is protective of human health and the environment, complies with Federal and State requirements that are legally applicable or relevant and appropriate to the limited-scope remedial action, and is cost-effective. This action is interim and is not intended to utilize permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable for this OU. Because this action does not constitute the final remedy for the FTF, the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as a principal element will be addressed by the final response action. Subsequent actions may be needed to fully address the threats posed by the conditions at the FTF OU.

In accordance with Section 121(c) of CERCLA and NCP §300.430(f)(5)(iii)(c), a statutory review will be conducted within 5 years of initiation of the remedial

action, and every 5 years thereafter, to ensure that the remedy continues to be protective of human health and the environment.

XIII. EXPLANATION OF SIGNIFICANT CHANGES

The interim remedy selected in this IROD does not contain any significant changes from the preferred alternative presented in the IASB/PP.

XIV. RESPONSIVENESS SUMMARY

The Responsiveness Summary is included as Appendix A of this document. One comment was received during the public comment period.

XV. POST-ROD DOCUMENT SCHEDULE AND DESCRIPTION

The interim remedial action schedule is provided in Figure 5. An Interim Corrective Measures Implementation/Remedial Action Implementation Plan (ICMI/RAIP) is scheduled to be submitted in July 2013 followed by an Interim Remedial Action start date upon approval of the ICMI/RAIP.

XVI. REFERENCES

DHEC_01-25-1993, *Construction Permit #17,424-IW, SRS F/H-Area, Aiken and Barnwell County*, South Carolina Department of Health and Environmental Control, Columbia, SC, January 25, 1993.

DOE_01-29-1996. *SRS Future Use Project Report, Stakeholder Preferred Recommendations for SRS Land Use Facilities*, United States Department of Energy, Savannah River Operations Office, Aiken, SC, January 1996.

DOE-EIS-0303 ROD, *High Level Waste Tank Closure Final Environmental Impact Statement Record of Decision*, Savannah River Operations Office, Aiken, SC, Rev. 0, August 19, 2002.

DOE-EIS-0303, *Savannah River Site High-Level Waste Tank Closure Final Environmental Impact Statement*, May 2002, and the *High-Level Waste Tank Closure Final Environmental Impact Statement for the Savannah River Site Supplement Analysis*, (DOE/EIS-0303-SA-01), Savannah River Operations Office, Aiken, SC, Rev. 0, September 2011.

DOE/SRS-WD-2012-001, *Basis for Section 3116 Determination for Closure of F-Tank Farm at the Savannah River Site*, Savannah River Site, Aiken, SC, Rev. 0, April 2012.

LWO-RIP-2009-00009, *Industrial Wastewater General Closure Plan for F-Area Waste Tank Systems*, Savannah River Site, Aiken, SC, Rev. 3, January 2011.

PIT-MISC-0002, *Industrial Wastewater Closure Module for the High-Level Waste Tank 20 System*, Savannah River Site, Aiken, SC, Rev. 1, January 8, 1997.

PIT-MISC-0004, *Industrial Wastewater Closure Module for the High-Level Waste Tank 17 System*, Savannah River Site, Aiken, SC, Rev. 2, August 26, 1997.

PIT-MISC-0006, *Industrial Wastewater Closure Plan for F- and H-Area High-Level Waste Tank Systems*, Savannah River Site, Aiken, SC, Rev. 1, July 10, 1996.

SRR-CWDA-2011-00103, *Interim Action Statement of Basis/Proposed Plan for the F-Area Tank Farm, Waste Tanks 17 and 20*, Savannah River Site, Rev. 1, May 2012.

SRS-REG-2007-00002, *Performance Assessment for the F-Tank Farm at the Savannah River Site*, Savannah River Site, Rev. 1, March 31, 2010.

SRNS-RP-2011-00995, *F-Area Tank Farm Groundwater Monitoring Plan*, Revision 0, Savannah River Site, Aiken, SC 29802, May 2011.

WSRC-OS-94-42, *Federal Facility Agreement for the Savannah River Site*, Administrative Document No. 89-05-FF, August 16, 1993.

WSRC-RP-96-120, *Savannah River Site Federal Facility Agreement Community Involvement Plan (U)*, Rev. 7, Savannah River Site, Aiken, SC, February 2011.

WSRC-RP-98-4125, *Land Use Control Assurance Plan for the Savannah River Site*, Revision 1.1, August 1999, , Savannah River Site, Aiken, SC, updated October 2011.

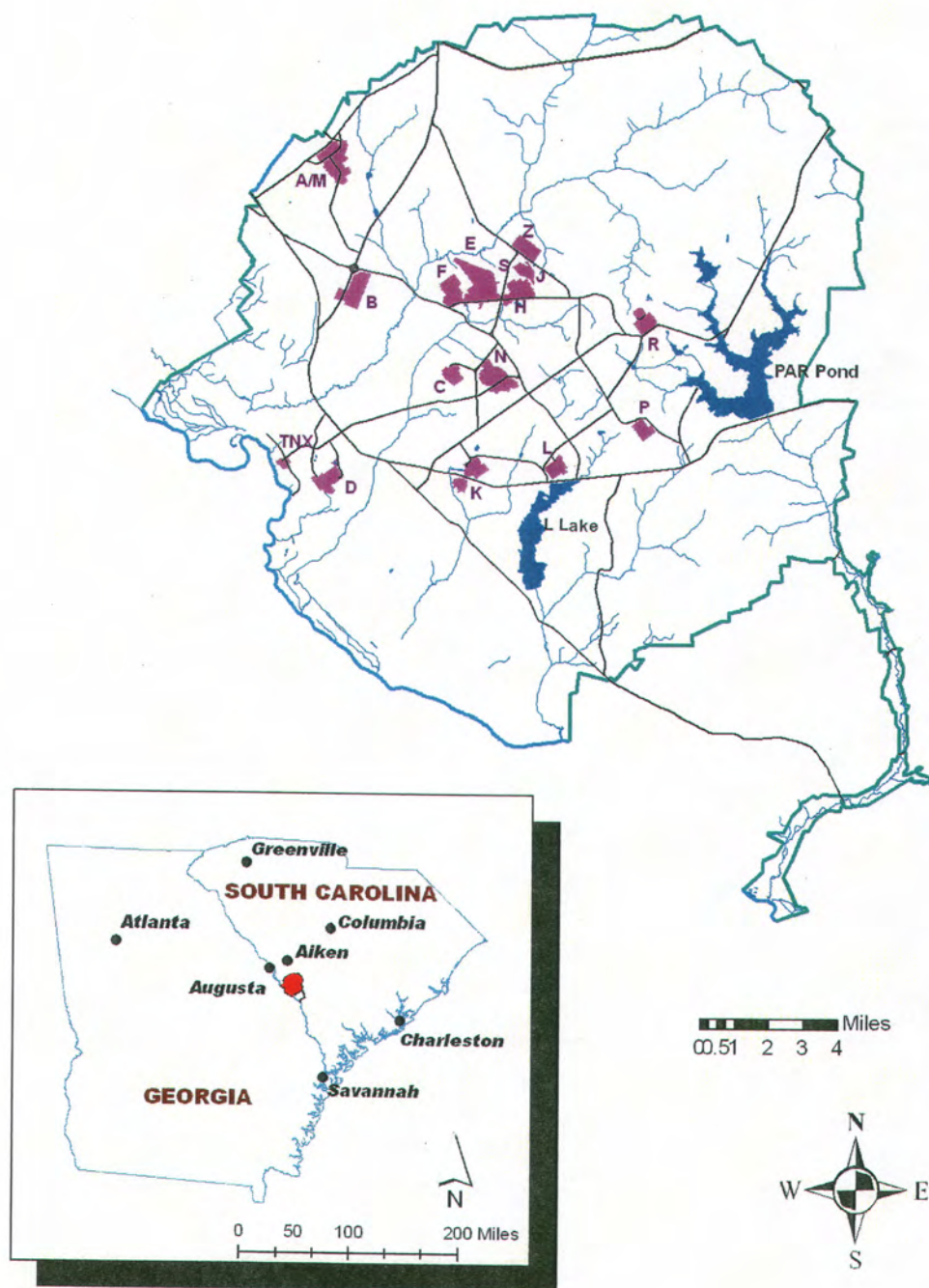


Figure 1. Location of the Savannah River Site

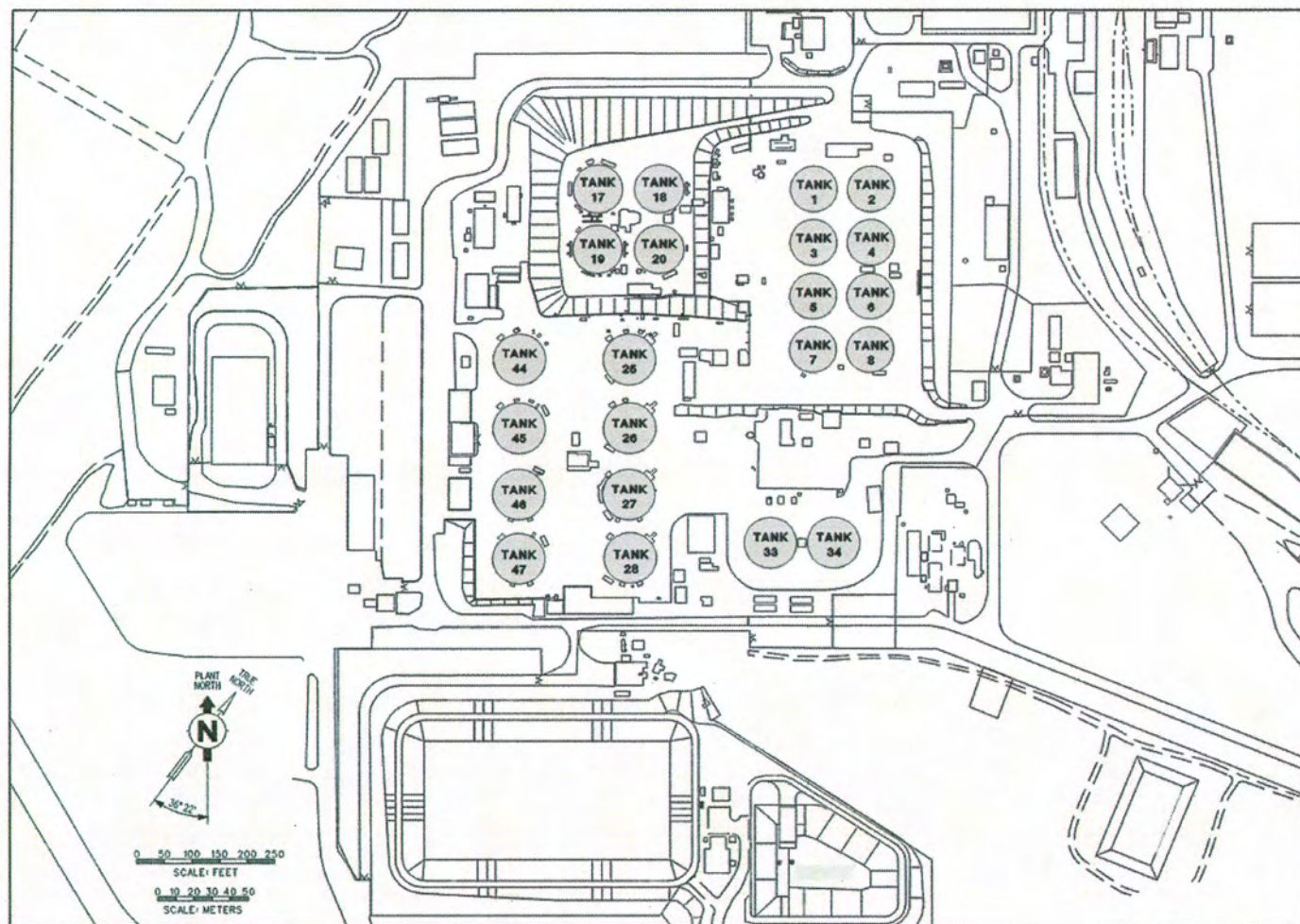


Figure 2. Layout of the F-Area Tank Farm

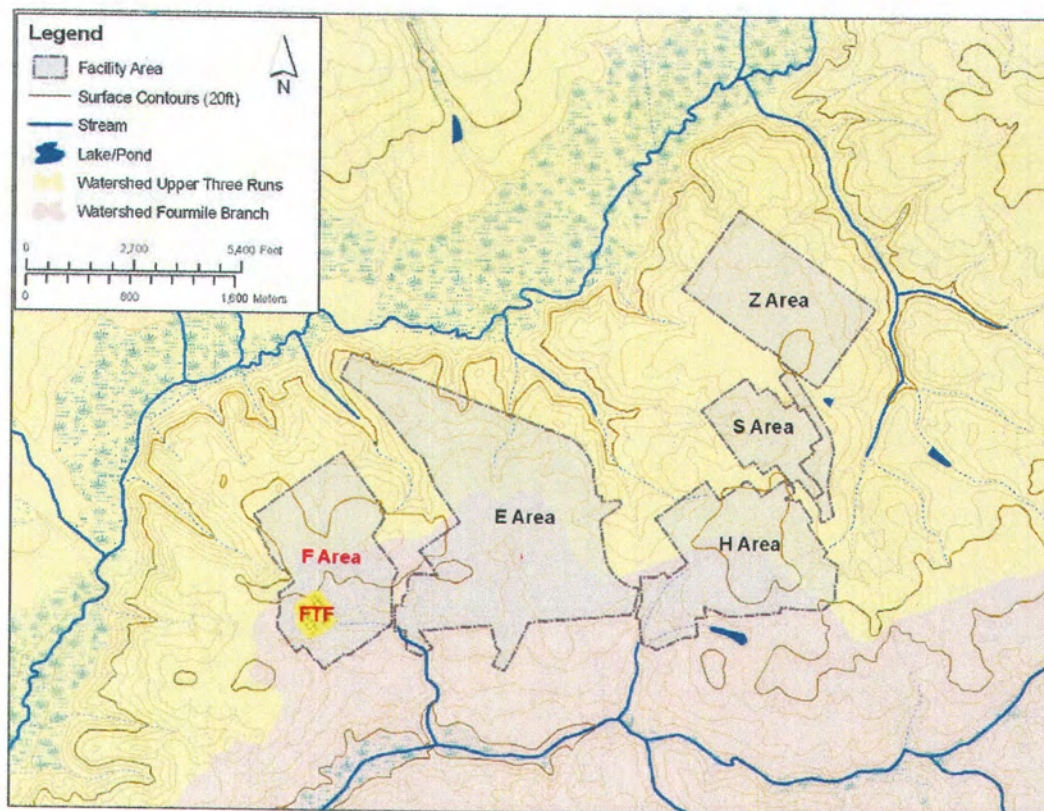


Figure 3. Layout of the General Separations Area

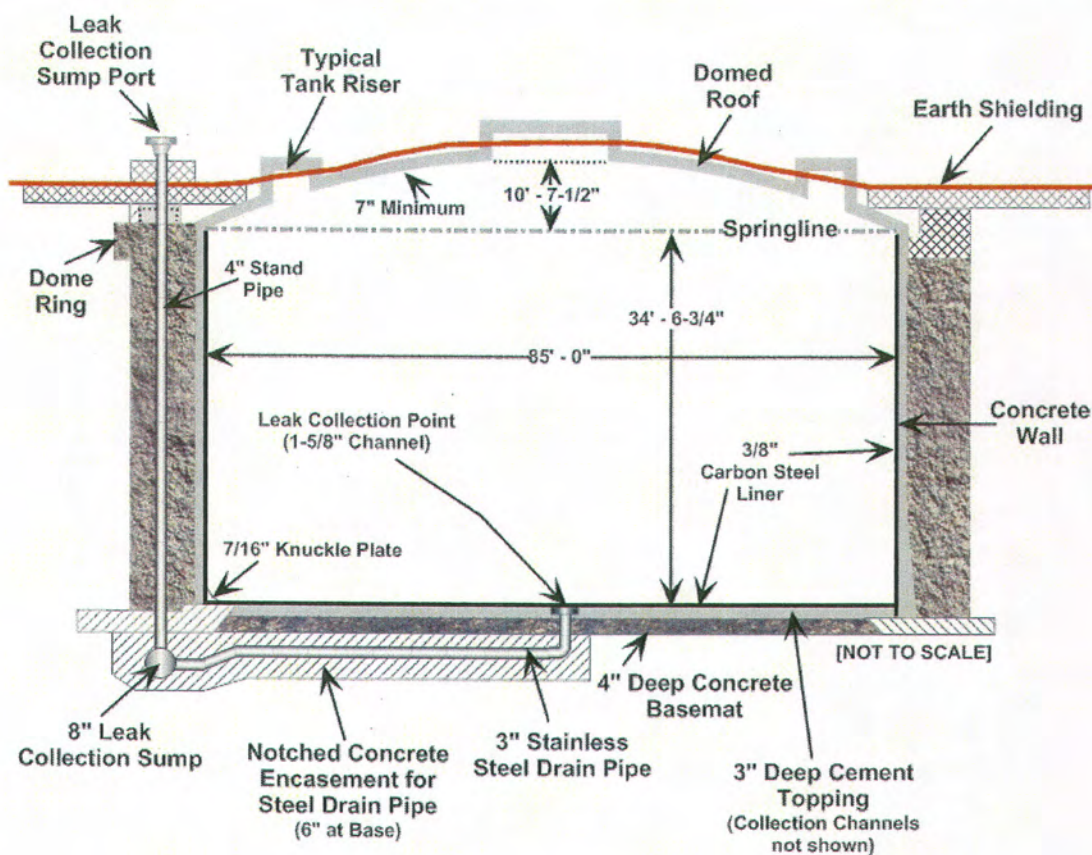


Figure 4. Cross-Sectional View of Typical Type IV Tank

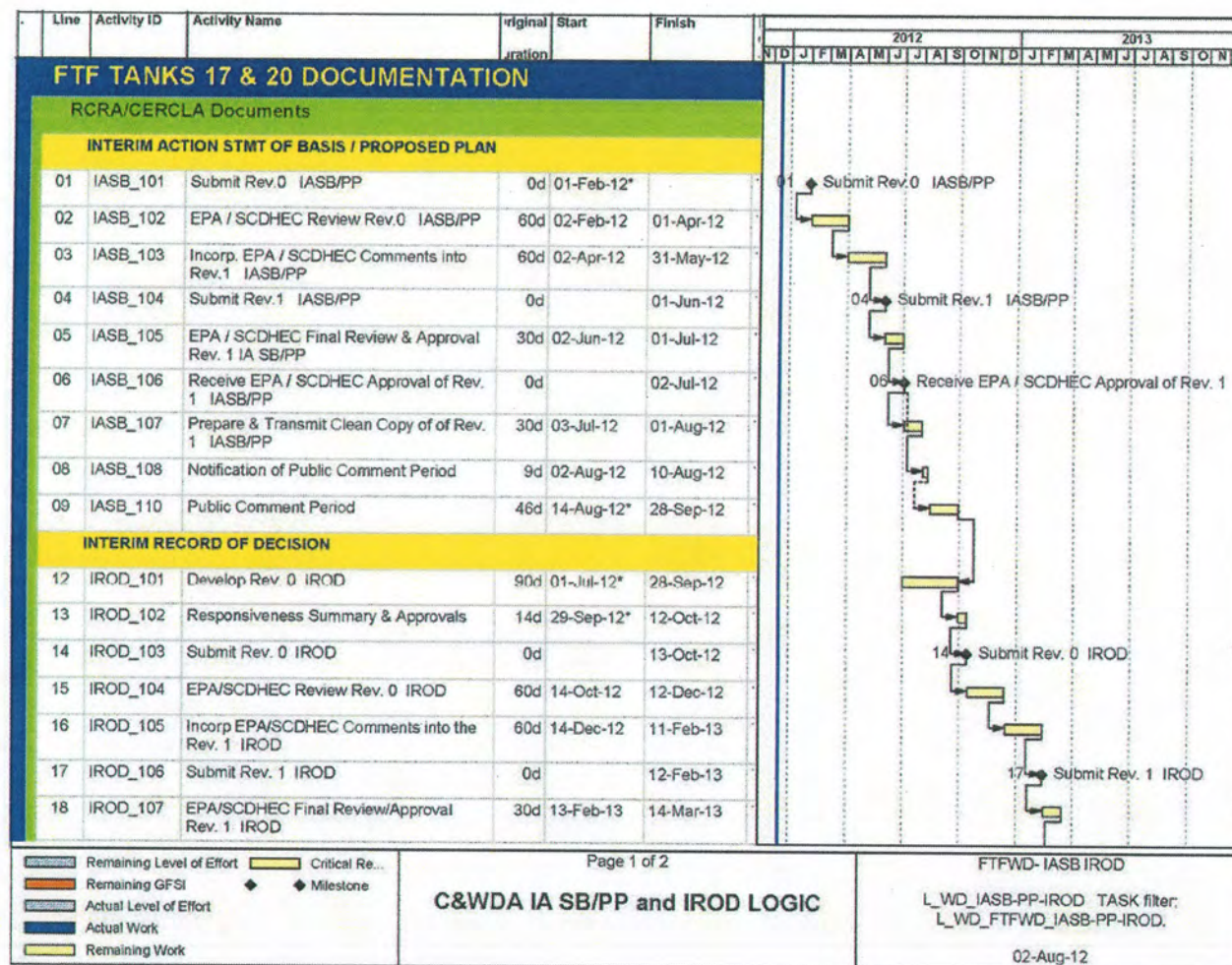
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Figure 5: Post-ROD Schedule



Line	Activity ID	Activity Name	Original Duration	Start	Finish
19	IROD_108	Receive EPA/SCDHEC Approval Rev. 1 IROD	0d	15-Mar-13	
20	IROD_110	DOE Obtain Signature on IROD	30d	16-Mar-13	14-Apr-13
22	IROD_111	EPA Obtain Signature on IROD	30d	16-Apr-13	15-May-13
23	IROD_112	SCDHEC Obtain Signature on IROD	30d	17-May-13	15-Jun-13
24	IROD_113	Prepare for Public Notice	14d	17-Jun-13	30-Jun-13
25	IROD_114	Issue IROD	0d	01-Jul-13	
INTERIM CORREC MEASURE IMPL / REMEDIAL ACTION IMPL PLAN					
28	ICMI_101	Develop Rev. 0 IRAIP	90d	09-Apr-13*	07-Jul-13
29	ICMI_102	Submit Rev. 0 IRAIP	0d		07-Jul-13
30	ICMI_103	EPA/SCDHEC Review Rev. 0 IRAIP	90d	09-Jul-13	06-Oct-13
31	ICMI_104	Incorp EPA/SCDHEC Comments into Rev. 1 IRAIP	60d	07-Oct-13	05-Dec-13
32	ICMI_105	Submit Rev. 1 IRAIP	0d		05-Dec-13
33	ICMI_106	EPA/SCDHEC Final Review/Approval Rev. 1 IRAIP	30d	07-Dec-13	05-Jan-14
34	ICMI_107	Receive EPA/SCDHEC Approval Rev. 1 IRAIP	0d		06-Jan-14
35	ICMI_108	Prepare Notification of Pre-Construction Fact Sheet	14d	07-Jan-14	20-Jan-14
36	ICMI_109	Publish Pre-Construction Fact Sheet	0d		21-Jan-14
INTERIM REMEDIAL ACTION START					
38	ICMI_110	Interim Remedial Action Start	0d		21-Jan-14

Legend:

- Remaining Level of Effort
- Remaining GFSI
- Actual Level of Effort
- Actual Work
- Remaining Work
- Critical Re...
- Milestone

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C&WDA IA SB/PP and IROD LOGIC

FTFWD- IASB IROD

L_WD_IASB-PP-IROD TASK filter:
L_WD_FTFWD_IASB-PP-IROD.

02-Aug-12

Table 1: Description of CERCLA Evaluation Criteria

Threshold Criteria:
• <i>Overall Protectiveness of Human Health and the Environment</i> determines whether an alternative eliminates, reduces, or controls threats to public health and the environment through institutional controls, engineering controls, or treatment. • <i>Compliance with ARARs</i> evaluates whether the alternative meets Federal and State environmental statutes, regulations, and other requirements that pertain to the site. ARARs may be waived under certain circumstances. ARARs are divided into chemical-specific, location-specific, and action-specific criteria.
Primary Balancing Criteria:
• <i>Long-Term Effectiveness and Permanence</i> considers the ability of an alternative to maintain protection of human health and the environment over time. It evaluates magnitude of residual risk and adequacy of reliability of controls. • <i>Reduction of Toxicity, Mobility, or Volume of Contaminants through Treatment</i> evaluates an alternative's use of treatment to reduce the harmful effects of principal contaminants, their ability to move in the environment, and the amount of contamination present. • <i>Short-Term Effectiveness</i> considers the length of time needed to implement an alternative and the risks the alternative poses to workers, residents, and the environment during implementation. • <i>Implementability</i> considers the technical and administrative feasibility of implementing the alternative, including factors such as the relative availability of goods and services. • <i>Cost</i> includes estimated capital and annual operations and maintenance costs, as well as present worth cost. Present worth cost is the total cost of an alternative over time in terms of today's dollar value. Cost estimates are expected to be accurate within a range of +50 to -30 percent.
Modifying Criteria:
• <i>State Support/Agency Acceptance</i> considers whether USEPA and SCDHEC agree with the analyses and recommendations by the USDOE. • <i>Community Acceptance</i> considers whether the local community agrees with the Preferred Alternative. Comments received on the Proposed Plan during the public comment period are an important indicator of community acceptance.

Table 2: Comparison of Interim Remedial Alternatives against the Nine Criteria

Criteria	Alternative A-1 No Action	Alternative A-2 Triennial Visible Engineered Barriers Inspection and Maintenance	Alternative A-3 Annual Visible Engineered Barriers Inspection and Maintenance
Overall protection of human health and the environment	Controls in place are adequate and protective.	Maintenance of area provides additional protection.	Maintenance of area provides additional protection
Compliance with ARARs	Not applicable	Not applicable	Not applicable
Long-term effectiveness and permanence	Not applicable	This is an interim remedy and long term effectiveness does not apply. Long term remedies will be evaluated following removal from service of all tanks and ancillary structures.	This is an interim remedy and long term effectiveness does not apply. Long term remedies will be evaluated following removal from service of all tanks and ancillary structures
Reduction of toxicity, mobility, or volume through treatment	No treatment	No treatment	No treatment
Short-term effectiveness	Not applicable	Visual inspections meet remedial action objective.	Visual inspections meet remedial action objective.
Implementability	No implementation	Readily implemented	Readily implemented
Cost	\$0	\$126,568	\$214,737
State acceptance	This criterion will be completed following state review.	This criterion will be completed following state review.	This criterion will be completed following state review.
Community acceptance	This criterion will be completed following public review.	This criterion will be completed following public review.	This criterion will be completed following public review.

**APPENDIX A –
RESPONSIVENESS SUMMARY**

Responsiveness Summary

The 45-day public comment period for the IASB/PP for the FTF Waste Tanks 17 and 20 began on August 14, 2012 and ended on September 28, 2012.

After reading the IASB/PP, one member of the public responded with a comment that the information he was expecting to find (i.e., remaining tank inventory, tank cleaning details, etc.) was not in the document. The information he was seeking is contained in another document that was provided upon request. No changes were made to the IASB/PP in response to this comment.

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From: "Lee Poe" <leepoe@mindspring.com>
To: <mark.mahoney@srs.gov>, <HAYNESRA@dhec.sc.gov>, <donaalbridges@gmail.com>, "Paul Sauerborn" <paul.sauerborn@srs.gov>, <dean.campbell@srs.gov>
Date: 08/28/2012 02:40 PM
Subject: Public Comment on F-Area Tank Farm (Waste Tanks 17-20) Interim Action Statement of Basic Proposed Plan

Attached are my comments (Public Comments) on Interim Action Statement of Basis/Proposed Plan for F-Area Tank Farm (Tanks 17 thru 20) as requested in Volume 24, Number 11 dated August 14, 2012.

Mr. Dean Campbell
SR Remediation
Savannah River Site
Bldg 766-H
Aiken, SC 29808

Copies to:

Paul Sauerborn
Mark Mahoney
Richard Haynes (DHEC)
Don Bridges (CAB)

Re: Public Comments on F-Area Tank Farm (Waste Tanks 17-20) Interim Action Statement of Basic Proposed Plan.

Thanks for having Mark Mahoney send me a copy of SRNS J2000-2012-00447 as I requested.

I reviewed the Proposed Plan and found it was a very dull regulatory document on closure of Waste Tanks 17-20. I was looking for technical information how many radionuclides were left in the tanks and found the reviewed document was not the document that contained that type of information. I did learn those Type IV tanks had been cleaned-filled and filled in the process of closing them in a walk away mode. Filling them with grout included stabilizing the concrete doomed roof of each tank.

Remedial Alternative A-3 was selected to allow yearly inspection at a cost of \$214,000. Since only part of the Tank Farm is closed and operation folks are housed in the tank Farm Area, only a few hundred feet from the stabilized tanks, the cost of this alternative seems high. The document is not designed to be a cost document so I couldn't see the cost components of the \$214,000. (I would have assumed the Alternative cost would be lower.) I realize the document does not identify specific operations required. Those specific operations must account for the cost. (I would have assumed this surveillance could be done at no additional costs or very little incremental cost as long as the rest of the tank farm is continuously occupied.

I would have thought the document would contain the amount of radionuclides left and the condition of tank closure. I assume regulators, to whom the document is written are quite familiar with those facts. A much abbreviated document written to get public input would be more useful than asking the public to review this jargon filled document. I expect very few members of the public will read this document and provide comments.

If members of the public read this document they will probably not read future similar documents.

Dean, I am sure this document meets the SRS requirement to the regulators so these comments are meant for them. If the purpose of this document is to get public buy-in on the surveillance alternatives they need alternative component costs be discussed in more detail.

I look forward to being informed on the cleaning of Type III waste tanks in F-Area. Mark tells me there is a lot of interesting information being developed and will be used in the closure of these Type III waste tanks. I hope to see this information soon. Points of concern to me are:

- Cleaning of space between the primary tank bottom and the top surface of the annular pan to minimize radionuclide leakage and stabilize those radionuclides.
- Cleaning tanks with interfering forest of cooling coils
- Closure of both leaking and sound cooling coils
- How will the tank construction pad be monitored for radionuclide migration (channeling)?

I hope these and other subjects on the FTF closure will be discussed at public meetings (perhaps the CAB or other meeting types) so the public can be informed on these subjects. The discussion should be condition related and not the stilted regulatory document.

Sincerely

W. Lee Poe, Jr.
807 E. Rollingwood Rd.
Aiken, SC 29801

**APPENDIX B –
COST ESTIMATES OF ALTERNATIVES**

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Alternative A-1: IASB/PP for the F-Area Tank Farm, Waste Tanks 17 and 20

No Action

Savannah River Site

<u>Item</u>	<u>Quantity</u>	<u>Units</u>	<u>Unit Cost</u>	<u>Total Cost</u>
<u>Direct Capital Costs</u>				
No Action				
Subtotal - Direct Capital Cost				\$0 *
Mobilization/Demobilization	20%	of subtotal direct capital		\$0 *
Site Preparation/Site Restoration	20%	of subtotal direct capital		\$0 *
Total Direct Capital Cost		(sum of * items)		\$0
<u>Indirect Capital Costs</u>				
Engineering & Design	18%	of direct capital		\$0
Project/Construction Management	25%	of direct capital		\$0
Health & Safety	5%	of direct capital		\$0
Overhead	30%	of direct capital		\$0
Contingency	20%	of direct capital		\$0
Total Indirect Capital Cost				\$0
Total Estimated Capital Cost				\$0
<u>Direct O&M Costs</u>				
Annual Costs	2.1%	discount rate for costs > 200 years duration ¹		
	14	years O&M		Years 2013 - 2026
Subtotal - Annual Costs				\$0
Present Worth Annual Costs (2.1% Discount Rate)				\$0
Five Year Costs	0			
Remedy Review	0	ea	\$15,000	\$0
Subtotal - Five Year O&M Costs				\$0
Present Worth Five Year Costs				\$0
Total Present Worth Direct O&M Cost				\$0
<u>Indirect O&M Costs</u>				
Project/Admin Management	100%	of direct O&M		\$0
Health & Safety	30%	of direct O&M		\$0
Overhead	30%	of direct O&M		\$0
Contingency	15%	of direct O&M		\$0
Total Present Worth Indirect O&M Cost				\$0
Total Estimated Present Worth O&M Cost				\$0
TOTAL ESTIMATED COST				\$0

1. Interest rate for costs with duration < 200 years (i.e., before 2209) is based on SRNS's 25 August 2009 Technical Memorandum.

**IROD for the F-Area Tank Farm,
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**Alternative A-2: IASB/PP for the F-Area Tank Farm, Waste Tanks 17 and 20
Triennial Visible Engineer Barriers Inspection and Maintenance
Savannah River Site**

<u>Item</u>	<u>Quantity</u>	<u>Units</u>	<u>Unit Cost</u>	<u>Total Cost</u>
<u>Direct Capital Costs</u>				
No Action				
Subtotal - Direct Capital Cost				\$0
Mobilization/Demobilization	20%	of subtotal direct capital		\$0
Site Preparation/Site Restoration	20%	of subtotal direct capital		\$0
Total Direct Capital Cost		(sum of * items)		\$0
<u>Indirect Capital Costs</u>				
Engineering & Design	18%	of direct capital		\$0
Project/Construction Management	25%	of direct capital		\$0
Health & Safety	5%	of direct capital		\$0
Overhead	30%	of direct capital		\$0
Contingency	20%	of direct capital		\$0
Total Indirect Capital Cost				\$0
Total Estimated Capital Cost				\$0
<u>Direct O&M Costs</u>				
	2.1%	discount rate for costs > 200 years duration ¹		
Annual Costs	14	years O&M		Years 2013 - 2026
Triennial Inspections / Maintenance	14	1	1,333	\$1,333
Subtotal - Annual Costs				\$1,333
Present Worth Annual Costs (2.1% Discount Rate)				\$16,025
Five Year Costs	0			
Remedy Review	2	ea	\$15,000	\$30,000
Subtotal - Five Year O&M Costs				\$30,000
Present Worth Five Year Costs				\$30,000
Total Present Worth Direct O&M Cost				\$46,025
<u>Indirect O&M Costs</u>				
Project/Admin Management	100%	of direct O&M		\$46,025
Health & Safety	30%	of direct O&M		\$13,807
Overhead	30%	of direct O&M		\$13,807
Contingency	15%	of direct O&M		\$6,904
Total Present Worth Indirect O&M Cost				\$80,543
Total Estimated Present Worth O&M Cost				\$126,568
TOTAL ESTIMATED COST				\$126,568

1. Interest rate for costs with duration < 200 years (i.e., before 2209) is based on SRNS's 25 August 2009 Technical Memorandum.

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**Alternative A-3: IASB/PP for the F-Area Tank Farm, Waste Tanks 17 and 20
Annual Visible Engineer Barriers Inspection and Maintenance
Savannah River Site**

<u>Item</u>	<u>Quantity</u>	<u>Units</u>	<u>Unit Cost</u>	<u>Total Cost</u>
<u>Direct Capital Costs</u>				
No Action				
Subtotal - Direct Capital Cost				\$0
Mobilization/Demobilization	20%	of subtotal direct capital		\$0
Site Preparation/Site Restoration	20%	of subtotal direct capital		\$0
Total Direct Capital Cost		(sum of * items)		\$0
<u>Indirect Capital Costs</u>				
Engineering & Design	18%	of direct capital		\$0
Project/Construction Management	25%	of direct capital		\$0
Health & Safety	5%	of direct capital		\$0
Overhead	30%	of direct capital		\$0
Contingency	20%	of direct capital		\$0
Total Indirect Capital Cost				\$0
Total Estimated Capital Cost				\$0
<u>Direct O&M Costs</u>				
	2.1%	discount rate for costs > 200 years duration ¹		
Annual Costs	14	years O&M		Years 2013 - 2026
Annual Inspections / Maintenance	14	1	4000	\$4,000
Subtotal - Annual Costs				\$4,000
Present Worth Annual Costs (2.1% Discount Rate)				\$48,086
Five Year Costs	0			
Remedy Review	2	ea	\$15,000	\$30,000
Subtotal - Five Year O&M Costs				\$30,000
Present Worth Five Year Costs				\$30,000
Total Present Worth Direct O&M Cost				\$78,086
<u>Indirect O&M Costs</u>				
Project/Admin Management	100%	of direct O&M		\$78,086
Health & Safety	30%	of direct O&M		\$23,426
Overhead	30%	of direct O&M		\$23,426
Contingency	15%	of direct O&M		\$11,713
Total Present Worth Indirect O&M Cost				\$136,651
Total Estimated Present Worth O&M Cost				\$214,737
TOTAL ESTIMATED COST				\$214,737

1. Interest rate for costs with duration < 200 years (i.e., before 2209) is based on SRNS's 25 August 2009 Technical Memorandum.