LUCIP for the F-Area Burning/Rubble Pits (231-F, 231-lF, and 231-2F)

Section 2.0 of Final Remediation Report for the
F-Area Burning/Rubble Pits (231-F, 231-lF, and 231-2F)

WSRC-RP-97-193 Revision 1.1, March 1998

United States Department of Energy

Savannah River Site

Final Remediation Report for the F-Area Burning/Rubble Pits (231-F, 231-1F, and 231-2F) (U)

WSRC-RP-97-193
Revision 1.1
March 1998

Westinghouse Savannah River Company
Savannah River Site
Aiken, SC 29808

SAFETY • RESPONSIBILITY • SECURITY
SRS
SAVANNAH RIVER SITE

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

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Printed in the United States of America

Prepared for
U. S. Department of Energy
and
Westinghouse Savannah River Company
Aiken, South Carolina

904848

CERTIFICATION

FINAL REMEDIATION REPORT
FOR THE
F-AREA BURNING/RUBBLE PITS
(231-F, 231-1F, and 231-2F) (U)
WSRC-RP-97-193
Revision 1.1
March 1998

"I certify under the penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

Date: 11 MAY 98 Signature:

Richard R. Harbert
Vice President and General Manager
Environmental Restoration Division
Westinghouse Savannah River Company
Co-operator for the U.S. Dept. of Energy
Savannah River Operations

Date: 5/13/98 Signature:

C. V. Anderson,
Director
Environmental Restoration Division
U.S. Department of Energy
Savannah River Field Office
Owner and Co-operator

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ACRONYMS

CERCLA	Comprehensive Environmental Response, Compensation and Liability Act, 1980
DOE	United States Department of Energy
EPA	United States Environmental Protection Agency
FBRP	F-Area Burning/Rubble Pits (231-F and 231-1F) and Rubble Pit (231-2F) Source Operable Unit
FBP	F-Area Burning Pit Groundwater Monitoring Well Series
FFA	Federal Facility Agreement
RCRA	Resource Conservation and Recovery Act, 1976
ROD	Record of Decision
SCDHEC	South Carolina Department of Health and Environmental Control
SRS	Savannah River Site
WSRC	Westinghouse Savannah River Company

1.0 GENERAL DESCRIPTION OF THE F-AREA BURNING/RUBBLE PITS

The F-Area Burning/Rubble Pits (231-F and 231-1F) and Rubble Pit (231-2F) (FBRP) comprise a RCRA/CERCLA source unit located within the Savannah River Site (SRS) (Figure 1), approximately 3000 feet west of F-Area and 1100 feet north of SRS Road C. Upper Three Runs is located approximately 2,300 feet northwest of the pits. The local topography of the area is flat upland and the pits are at an elevation of 290 feet above mean sea level and 170 feet above Upper Three Runs. The water table is 70 to 100 feet below ground surface in the area of the FBRP. Surface drainage is to the northwest toward an ephemeral tributary of Upper Three Runs about 7.5 miles upstream of its confluence with the Savannah River.

The two contiguous burning/rubble pits (Figure 2), which cover a total area of 1.05 acres, are designated as 231-F and 231-1F; a twenty foot wide berm of undisturbed soil separates these two pits. The rubble pit (231-2F) covers about 0.13 acre. The approximate dimensions of the pits are:

- o 231-F: 275 feet x 62 feet x 10 feet
- o 231-1F: 325 feet x 89 feet x 10 feet
- o 231-2F: 165 feet x 33 feet x 4-9 feet.

Between 1951 and 1973, SRS used Pits 231-F and 231-1F to burn a variety of wastes which were considered non-hazardous at that time. Waste was usually burned on a monthly basis. The chemical composition and volumes of the disposed waste are unknown, but waste materials burned included paper, plastics, wood, rubber, rags, cardboard, oil, degreasers, and spent organic solvents. No known or suspected radioactive materials were allowed in the burning pits.

Burning of waste in the SRS pits was discontinued by October 1973. A layer of soil was then placed over the residue in the pits and they were subsequently used as rubble pits. Materials allowed in the rubble pits included concrete, bricks, tile, asphalt, plastic, metal, empty drums, wood products, and rubber.

When the pits were filled to capacity in 1978, a layer of clayey soil was placed over the contents and the surface was compacted and mounded. Vegetation has been established to reduce erosion.

Contact information (person, title, address, and phone number) for the FBRP is as follows:

Westinghouse Savannah River Company
Manager, Post Closure Maintenance
Building 730-2B
Aiken, SC 29808
(803) 952-6882

2.0 DESCRIPTION OF THE SELECTED REMEDY

The selected remedy at the FBRP source control operable unit is institutional controls. Implementation of this remedy will require both near- and long-term actions. For the near-term, signs will be posted indicating that this area was used to manage hazardous materials. In addition, existing SRS access controls will be used to maintain use of this site exclusively for nonresidential activities.

Figure 1 **Location of the F-Area Burning/Rubble Pits (231-F and 231-1F) and Rubble Pit (231-2F) in Relation to Major Savannah River Site Facilities**

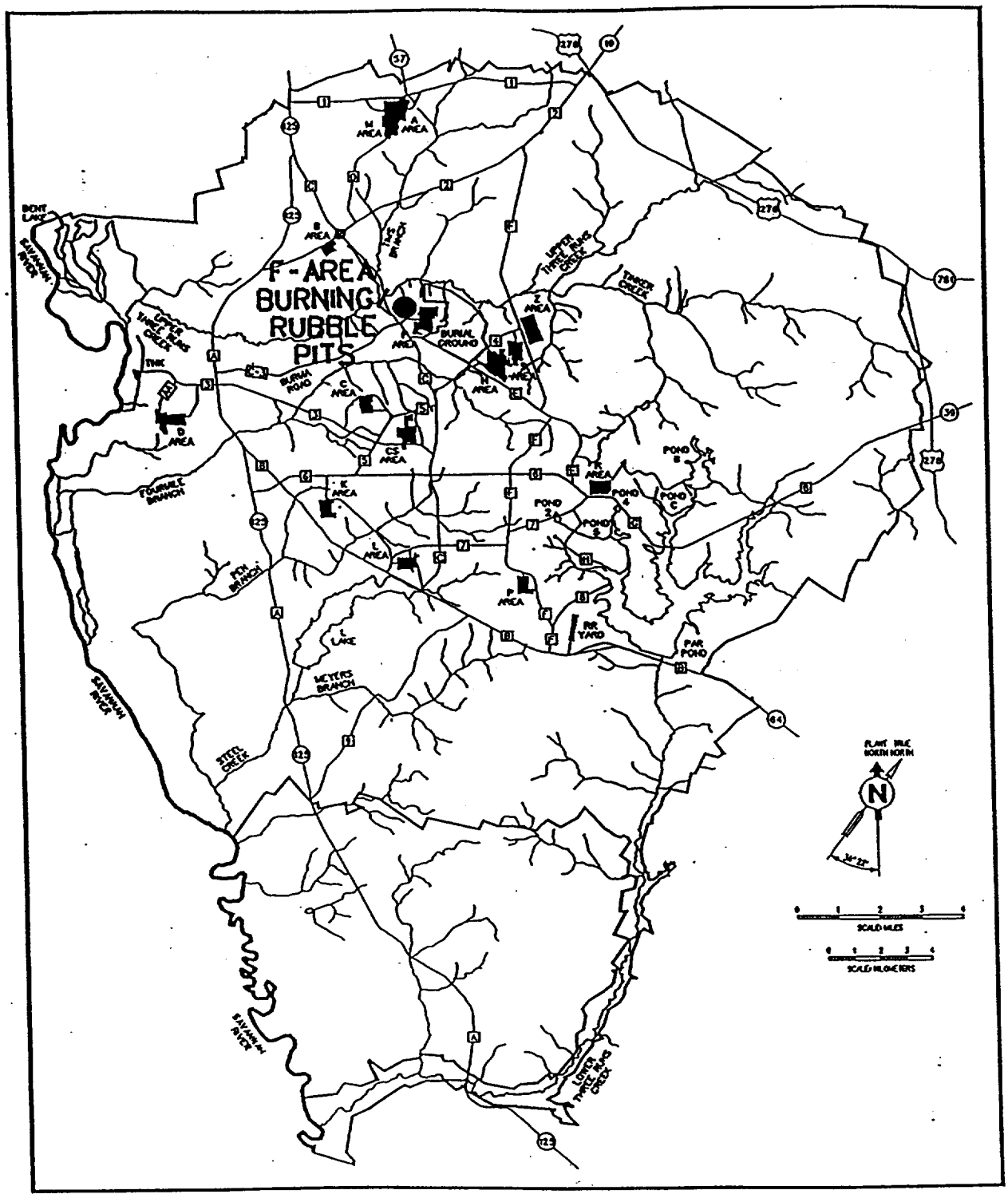
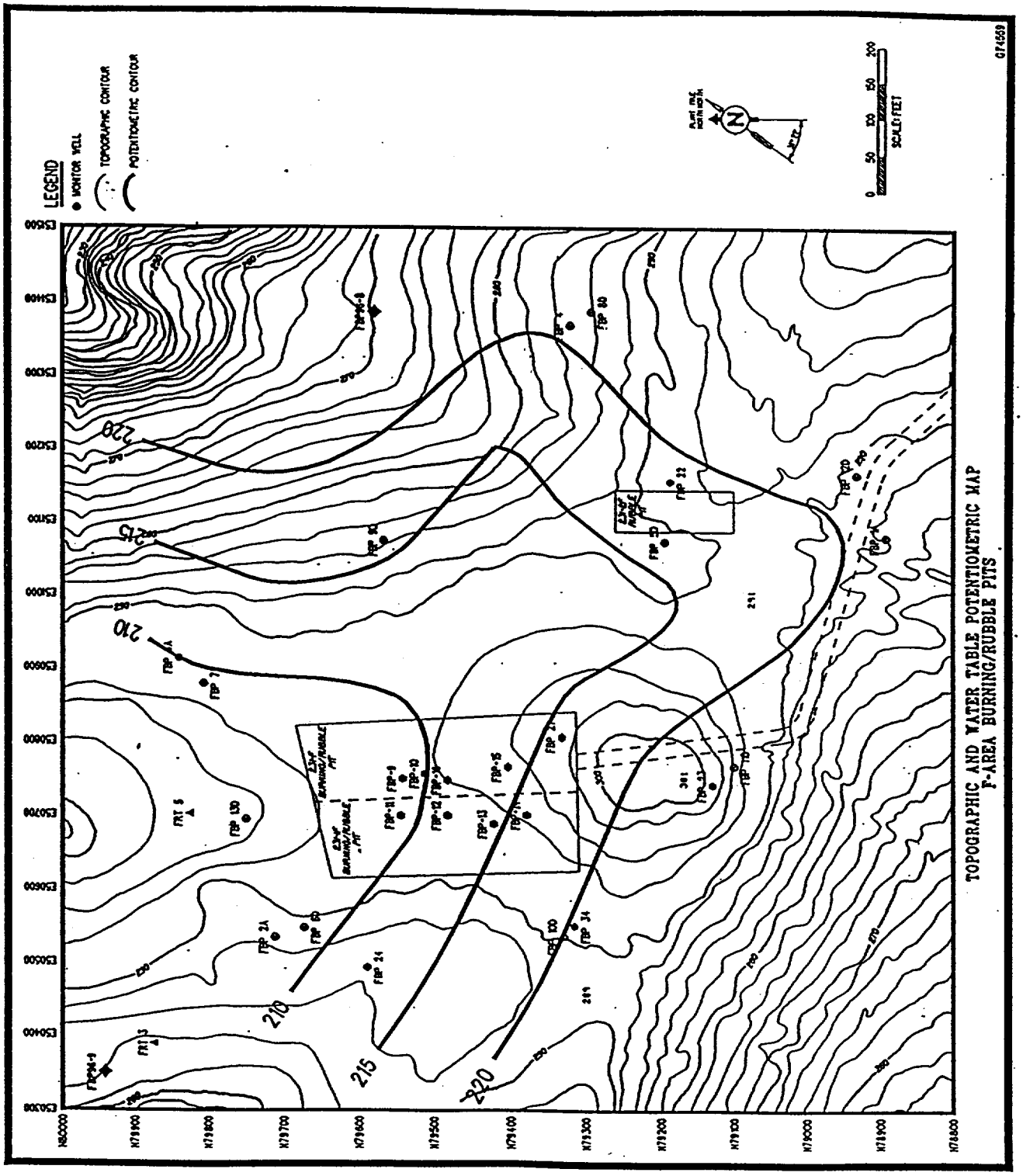


Figure 2 **Topographic and Water Table Potentiometric Map for the F-Area Burning/Rubble Pits**



In the long-term, if the property is ever transferred to non-Federal ownership, the U.S. Government will take those actions necessary pursuant to CERCLA Section 120(h). These actions will include a deed notification disclosing former waste management and disposal activities, as well as remedial actions taken at the waste unit, and any continuing groundwater monitoring commitments. The deed notification will, in perpetuity, notify any potential purchaser that the property has been used for the management and disposal of non-hazardous, inert construction debris, and that wastes containing hazardous substances, such as degreasers and solvents, were also managed and burned on the site. These requirements are also consistent with the RCRA deed notification required at final closure of the RCRA facility, if contamination will remain at the site. The deed will also include restrictions precluding residential use of the property. However, the need for these deed restrictions may be reevaluated at the time of transfer in the event that exposure assumptions differ and/or contamination no longer poses an unacceptable risk under residential use. The Environmental Protection Agency (EPA) and the South Carolina Department of Health and Environmental Control (SCDHEC) will have to concur with this reevaluation before the deed restrictions are altered. In addition, if the site is ever transferred to non-Federal ownership, a survey plat of the area will be prepared, certified by a professional land surveyor, and recorded with the appropriate county recording agency. The institutional controls remedy is intended to be the final action for the FBRP source unit. The solution is intended to be permanent and effective in both the long and near terms.

This proposal is consistent with EPA guidance and the National Contingency Plan for sites that have relatively large volumes of waste with low levels of contamination and is an effective use of risk management principles. The SCDHEC has modified the SRS RCRA permit to incorporate the selected remedy.

Since the initial groundwater assessment did not conclusively determine the source of groundwater contamination in the FBRP area, further assessment of the groundwater contamination is being conducted under the groundwater assessment program addenda to the Work Plan (WSRC 1996b and in preparation) to determine whether the FBRP source unit is the source of the contamination.

The elements of the institutional controls corrective action (which consists of land restriction without any engineering controls) are comprised of deed notifications, access controls which include posting of identification signs, field walkdowns for general site conditions, and groundwater characterization.

Each element of the institutional controls corrective action is discussed below.

2.1 Deed Notification

A deed notification shall be filed in the Aiken County Records in accordance with CERCLA 120(h), which requires the government to create a deed when land on which any hazardous substance was stored, released, or disposed is transferred to non-Federal ownership. Per CERCLA 120(h)(3)(A), the deed shall contain, to the extent practical, such information as is available based on the complete search of agency files, to include

- a notice of the type and quantity of such hazardous substances;
- notice of the time at which such storage, release, or disposal took place;
- a description of the remedial action taken, if any;
- a description of any continuing groundwater monitoring requirements.

Per CERCLA 120(h)(3)(B), the deed shall also contain a covenant warranting that

- all remedial action necessary to protect human health and the environment with respect to any such substance remaining on the property has been taken before the date of such transfer;
- any additional remedial action found to be necessary after the date of such transfer shall be conducted by the United States Government;
- a clause granting the United States Government access to the property in any case in which remedial action or corrective action is found to be necessary after the date of such transfer.

This proposal is also consistent with the RCRA permit requirements to insure protection of human health and the environment by maintaining documentation of property restrictions and institutional control requirements through the use of a deed notification.

2.2 Access Controls

2.2.1 On-Site Workers

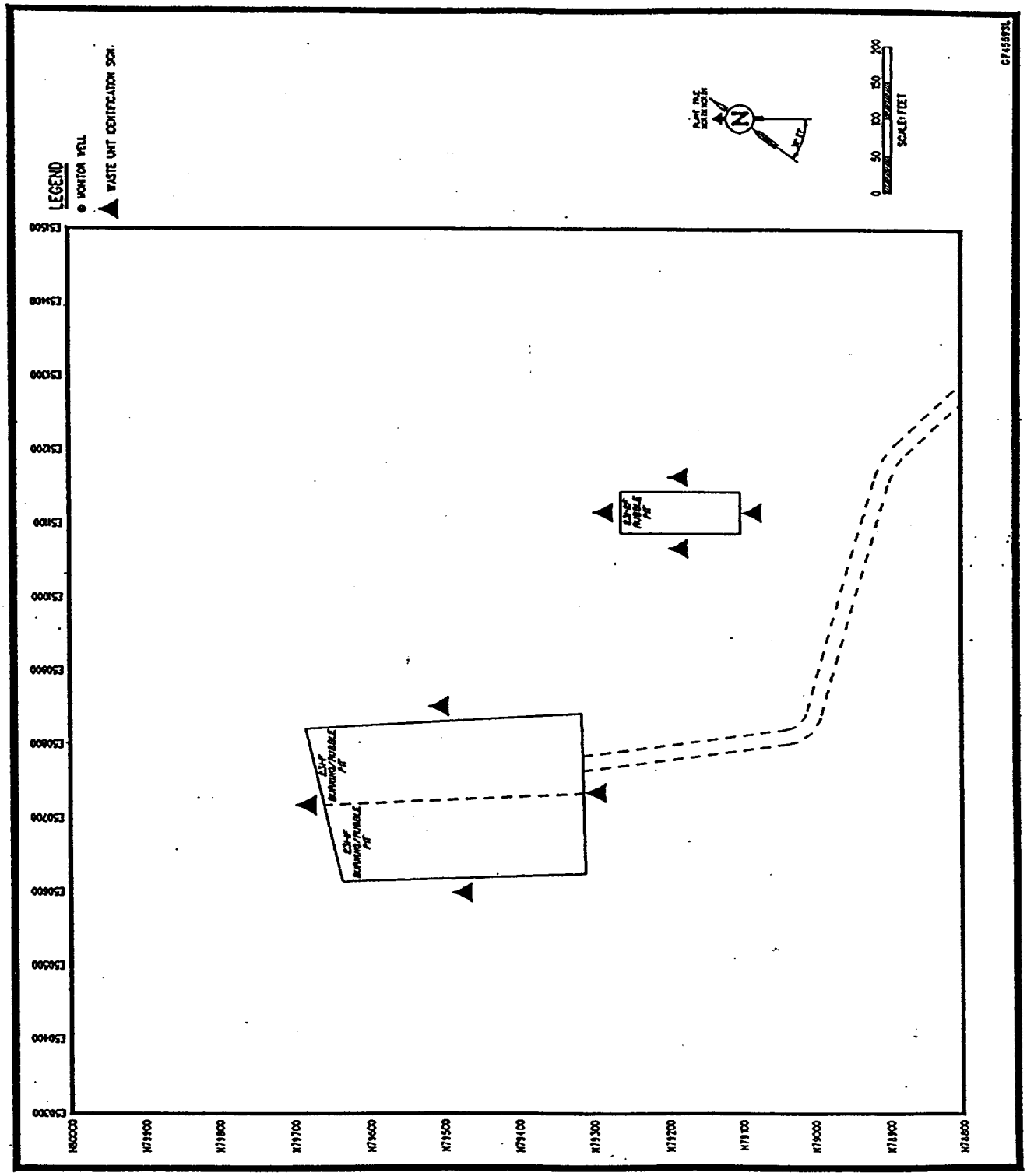
In accordance with WSRC 1D, *Site Infrastructure and Services Manual*, Procedure 3.02, *Site Real Property Configuration Control* (WSRC 1996), use of all lands and waters on the SRS shall be coordinated via the Site Use Program. No use of land (i.e., excavation or any other land use) shall be undertaken without prior approval documented by a Site Use Permit. Also, in accordance with Procedure 3.02, all work at SRS that adds to or modifies features or facilities portrayed on the SRS development maps (i.e., plot plans of facilities/utilities at SRS) is authorized by a Site Clearance Permit before execution. All Site Clearance requests are reviewed to verify that either an approved Site Use Permit has been obtained, or that an existing Site Use Permit has sanctioned the request. Verification of DOE approval for intended land use must be obtained before issuance of a Site Clearance Permit. The Site Use and Site Clearance processes are applicable to all activities and personnel on site (including subcontractors). The processes are controlled within the SRS Quality Assurance Program.

The SRS identifies all buildings and facilities on maps used in the Site Use/Site Clearance Program and includes a 200-foot buffer zone around each facility. This waste unit is identified on these maps as a RCRA/CERCLA facility.

Any work proposed in these areas will be strictly controlled and workers will be appropriately trained and briefed about health and safety requirements if work is deemed necessary for maintenance. Any changes in the use or disturbance of the FBRP will be cleared with the EPA and SCDHEC before the disturbance occurs. To prevent unknowing entry and to ensure that unrestricted use of the waste unit does not occur while under ownership of the government, identification signs will be posted at the waste unit access points (see Figure 3). The signs will be legible from a distance of at least 25 feet. The signs will read:

F-Area Burning/Rubble Pits (231-F and 231-1F) and Rubble Pit (231-2F)
"Danger - Unauthorized Personnel Keep Out.
This waste unit was used to manage hazardous substances.
Do not dig or excavate. Do not enter without contacting
the waste site custodian."
Custodian: Manager, Post Closure Maintenance
Phone: (803) 952-6882

Figure 3 **Location of Waste Unit Identification Signs at the F-Area Burning/Rubble Pits**



Site-specific access controls (i. e., fences) are not required for the FBRP since exposure to the casual worker or trespasser as calculated in the Baseline Risk Assessment does not warrant this level of protection.

2.2.2 Trespassers

Additionally, while under the ownership of the DOE, access control of the entire SRS will continue to be maintained in accordance with the 1992 RCRA Part B Permit Renewal Application, Volume I, Section F.1. This section describes the 24-hour surveillance system (R.61-79.264.14(b)(1)), artificial or natural barriers (R.61-79.264.14(b)(2)(i)), control entry systems (R.61-79.264.14(b)(2)(ii)), and warning signs (R.61-79.264.14(c)) in place at the SRS boundary to comply with the security requirements for a RCRA-permitted facility.

2.3 Field Walkdowns

Field walkdowns of the FBRP, will be conducted semi-annually for items such as accuracy and legibility of identification signs, visible subsidence or erosion of the waste unit, proper vegetation growth, mowing, etc. Subsidence or erosion will be corrected by backfilling the affected area with clean soil and seeding the area to prevent direct exposure of the waste or creation of an exposure pathway. The results of any events and/or actions that would indicate some potential compromise of institutional controls will be documented in the Federal Facility Agreement (FFA) Annual Progress Report. All other routine maintenance activities (i.e., mowing, etc.) will be documented and maintained in files, which are subject to EPA and SCDHEC review and audit. A typical field inspection checklist is included in this document as Attachment A.

2.4 Certification Mechanism

The Vice-President and General Manager of the Environmental Restoration Division, Westinghouse Savannah River Company, and the Director of the Environmental Restoration Division, U.S. Department of Energy, shall certify on an annual basis that the FBRP is currently being restricted per the institutional controls corrective action described in the approved *Record of Decision, Remedial Alternative Selection for the F-Area Burning/Rubble Pits (231-F, 231-1F, and 231-1F) (U)*, WSRC-RP-96-868, Revision 1, February 1997 (WSRC 1997a). This certification shall be included in the FFA Annual Progress Report.

2.5 Additional Groundwater Characterization

Additional groundwater characterization will be performed in the area surrounding the FBRP in an effort to determine the source of trichloroethylene and tetrachloroethylene found in the groundwater in the FBP Groundwater Monitoring Well Series. These activities, listed in the June 12, 1997 letter from DOE to EPA and SCDHEC (DOE 1997), include

- sampling of cone penetrometer locations
- sampling at the seeplines
- installation and sampling of additional monitoring wells

Specific details of these activities were proposed in the Rev 2.3 Workplan Addendum submitted to EPA and SCDHEC in December 1997 (WSRC 1997b). The Program Plan was submitted to EPA and SCDHEC in March 1998.

3.0 SCHEDULE

Waste site identification signs, as described in Section 2.2.1, will be installed during the second calendar quarter of 1998. Semi-annual field walkdowns will be conducted beginning the second calendar quarter of 1998. Additional groundwater characterization will be conducted under the schedule proposed in the June 12, 1997 letter from DOE to EPA and SCDHEC (DOE 1997). Results of additional groundwater characterization will be reported to EPA and SCDHEC as a technical memorandum during the fourth calendar quarter of 1998.

4.0 REFERENCES

DOE 1997. Correspondence: Hennessey, B. T. (DOE) to K. A. Collinsworth (SCDHEC) and J. L. Crane (EPA). "Submittal of the Proposed Revision 2.2 Workplan Addendum Schedule for the F-Area Burning/Rubble Pits (231-F, 231-1F, and 231-2F)." Department of Energy; Savannah River Operations Office; Aiken, South Carolina (June 12).

WRSC 1996. "Procedure 3.02 Site Real Property Configuration Control" in *WSRC 1D Site Infrastructure and Services Manual.* Westinghouse Savannah River Company; Aiken, South Carolina.

WSRC 1997a. *Record of Decision, Remedial Alternative Selection for the F-Area Burning/Rubble Pits (231-F, 231-1F, and 231-2F) (U).* WSRC-RP-96-868, Rev. 1, Westinghouse Savannah River Company; Aiken, South Carolina (February).

WSRC 1997b. *Phase II, RCRA Facility Investigation/Remedial Investigation Plan for the F-Area Burning/Rubble Pits (231-F and 231-1F) and Rubble Pit (231-2F) (U).* WSRC-RP-90-486, Rev. 2.3, Westinghouse Savannah River Company; Aiken, South Carolina (December).

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ATTACHMENT A

FIELD INSPECTION CHECKLIST

TYPICAL

TYPICAL

ER INSPECTION DATA SHEET FOR WASTE SITES

Page 1 of 3

Waste Site: _____ **A = Satisfactory** **X = Unsatisfactory (Comments required)**		Comments or Corrective Action Taken (See Maintenance Register for Corrected Items)
Check for potential encroachments (Ensure that there is no building on the site).		
Does the site have brush or woody vegetation that needs cutting and disposal?		
Does the site need grass cut?		
Verify that the wells and roads are accessible.		
Are the wells properly locked per R.61-71.11.C.6?		

TYPICAL

TYPICAL

ER INSPECTION DATA SHEET FOR WASTE SITES

Page 2 of 3

Waste Site: _____ **A = Satisfactory** **X = Unsatisfactory (Comments required)**		Comments or Corrective Action Taken (See Maintenance Register for Corrected Items)
Is the concrete pad cracked or broken? Is the pad undercut or silted over?		
Is the well properly identified per R.61-71.6H?		
Verify that the wells' posts and protective covers are in place.		
Verify that the waste units' signs have the correct and legible information.		
Does the site show signs of erosion or subsidence? Are there any signs of burrowing animals (holes)?		
Verify that the orange ball markers are in place.		

TYPICAL

TYPICAL

ER INSPECTION DATA SHEET FOR WASTE SITES

Page 3 of 3

Waste Site: _____ **A = Satisfactory** **X = Unsatisfactory (Comments required)**		Comments or Corrective Action Taken (See Maintenance Register for Corrected Items)
Verify that the fence is locked and in good condition (if applicable).		
Check the integrity of drainage ditches (if any) for presence of excessive erosion, sediment buildup, and any debris restricting water flow.		
Does the site need general clean up (housekeeping)?		
Comments:		

Inspected By:_____/_____Date:_____Time:_____
(Print Name) (Signature)

Reviewed By:_____/_____Date:_____Time:_____
PM or Designee (Print Name) (Signature)

Note: EPA and SCDHEC most be notified within 30 days of identification of any area where any breach or compromise or compromise of restrictions placed on this institutional control operable unit has occurred.

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