LUCIP for the Silverton Road Waste Unit (731-3A)

Section 2.0 of Final Remediation Report
for the Silverton Road Waste Unit (731-3A)

WSRC-RP-97-153, Revision 1.1, March 1998

United States Department of Energy

Savannah River Site

Final Remediation Report for the Silverton Road Waste Unit (731-3A) (U)

WSRC-RP-97-153
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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Prepared for
U. S. Department of Energy
and
Westinghouse Savannah River Company
Aiken, South Carolina

CERTIFICATION PAGE

Final Remediation Report for the Silverton Road Waste Unit (731-3A) (U)
WSRC-RP-97-153, 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: 28APR98 Signature:
Title: Richard R. Harbert, Vice President and General Manager
Environmental Restoration Division
Westinghouse Savannah River Company
Co-operator for the U.S. Department of Energy
Savannah River Operations

Date: 5/13/98 Signature:
Title: Cynthia V. Anderson, Director
Environmental Restoration Division
U.S. Department of Energy
Savannah River Field Office
Owner and Co-operator

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LIST OF ACRONYMS

CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
DOE	Department of Energy
EPA	U.S. Environmental Protection Agency
FFA	Federal Facility Agreement
MCLs	Maximum Contaminant Levels
PCE	Tetrachloroethylene
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
SCDHEC	South Carolina Department of Environmental Control
SDWA	Safe Drinking Water Act
SRS	Savannah River Site
SRWU	Silverton Road Waste Unit
TCE	Trichloroethylene
WSRC	Westinghouse Savannah River Company

1.0 GENERAL DESCRIPTION OF THE SILVERTON ROAD WASTE UNIT

The Silverton Road Waste Unit (SRWU), Building 731-3A, comprises a Resource Conservation and Recovery Act (RCRA)/Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) waste unit and is located in the northwestern part of the Savannah River Site (SRS) in Aiken County (Figure 1), approximately 1.5 miles southwest of A/M Area. The SRWU area is an irregular quadrilateral, unlined earthen depression dug into surficial soils that was later filled with various waste materials. This area has been designated as an "excavated area (filled)" as depicted in Figure 2.

The SRWU is located on the southwestern flank of an interstream divide between Upper Three Runs Creek (approximately 4.5 miles to the southeast) and the flood plain of the Savannah River (approximately 1.5 miles to the west). The ground surface elevation at the unit averages 350 feet above mean sea level. Surface drainage is southwestward, along a series of dry-wash tributaries, into the flood plain of the Savannah River. The water table at the SRWU ranges from about 40 feet below ground level to the southwest to about 130 feet below ground level to the northeast.

The SRWU was first used before construction of the SRS. Municipal, agricultural, and commercial trash, rubbish, garbage, debris, and refuse probably constituted the waste stream until the early 1950's. After procurement by the Federal government, the SRWU land continued to be used as an open dump for the disposal of metal shavings, 55-gallon drums, cardboard drums, tires, lumber, etc. No records of waste disposal activities were kept. In 1974, disposal of the waste at the SRWU ceased, and the area was bulldozed, graded, covered with soil, and planted with grasses.

The contact person (title, address, and phone number) for the SRWU 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

Based on the SRWU RCRA Facility Investigation/Remedial Investigation Report (WSRC, 1996b) and the Baseline Risk Assessment (WSRC, 1996a), the SRWU poses no significant risk to the environment and minimal risk to human health. Fate and transport analyses indicated that residual contaminants in the soils will not migrate to the groundwater. However, the presence of surface soil contamination prohibits this waste unit for residential use. Therefore, a determination has been made that institutional controls are sufficient for protection of human health and the environment for the SRWU soils. This alternative is considered to be the least cost option, which is still protective of human health and the environment.

Implementation of this alternative will require both near- and long-term actions. For the near term, signs will be posted at the waste unit to indicate that this area was used for disposal of waste material and contains buried waste. In addition, existing SRS access controls will be used to maintain this site for nonresidential use. Further, excavation below 8 feet will be prohibited.

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

Figure 1. Location of the Silverton Road Waste Unit at the Savannah River Site

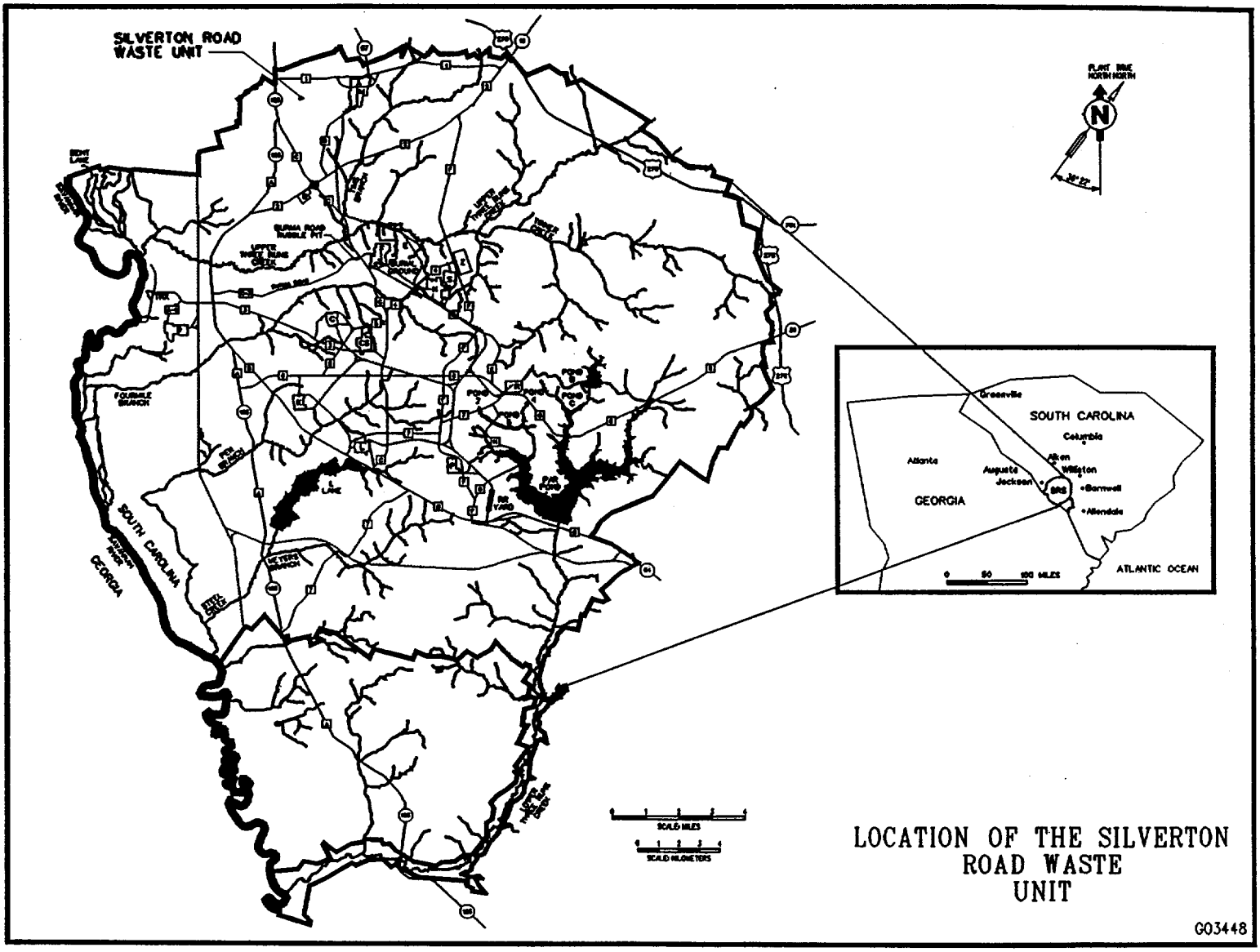
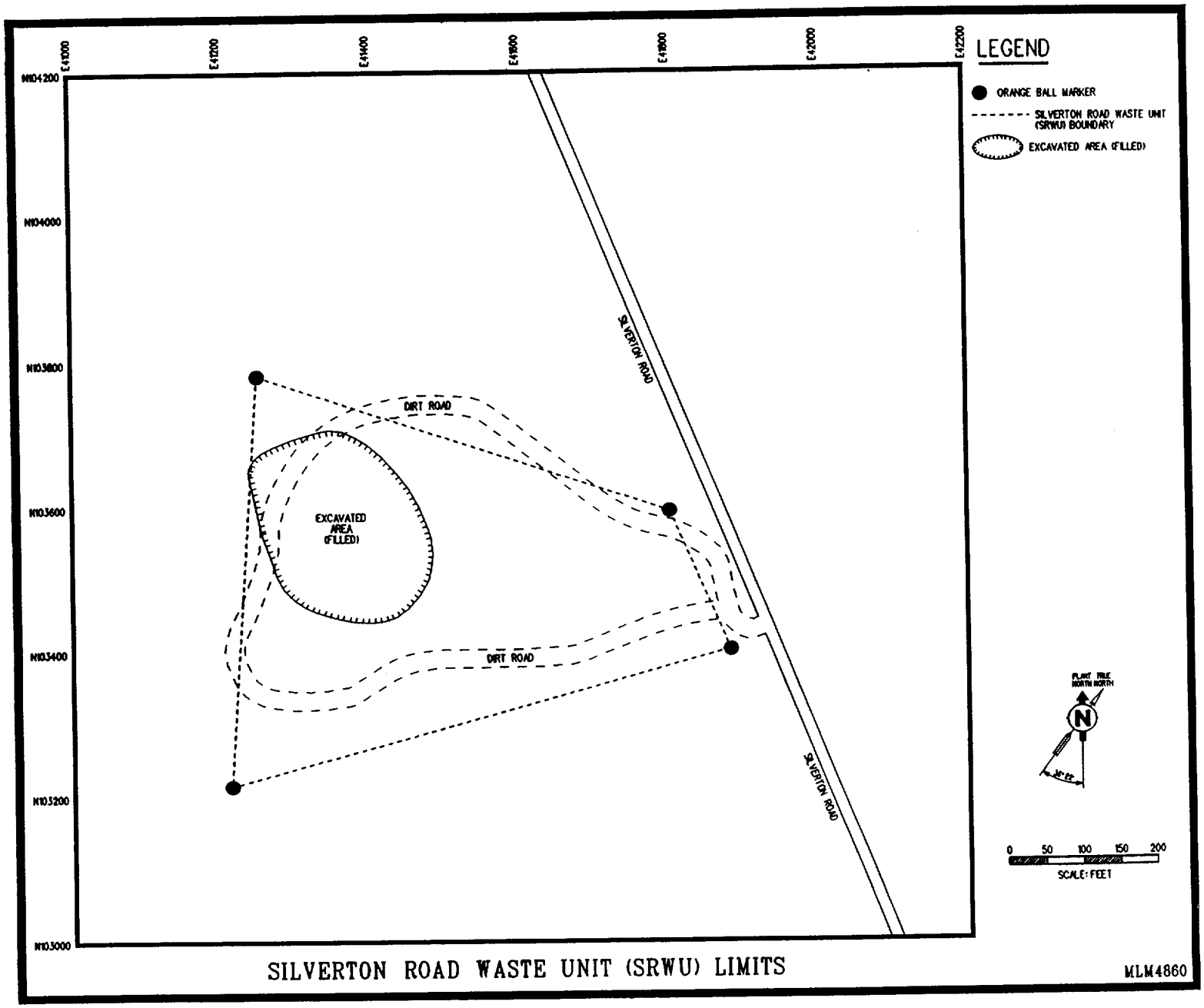


Figure 2. General Configuration of the Silverton Road Waste Unit



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 construction debris and other materials, including hazardous substances. 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 property 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.

In the "M Area" (water table) groundwater aquifer, low levels of contaminants have been detected which minimally and infrequently exceed maximum contaminant levels (MCLs). The probable condition for the "M Area" groundwater aquifer is no significant groundwater contamination resulting from the SRWU. As a result, no remedial action is deemed appropriate for the SRWU "M Area" groundwater aquifer. However, a confirmatory groundwater monitoring program will be established to ensure that this is the appropriate remedial action for the "M Area" groundwater aquifer. In the event that the probable condition is no longer appropriate, the Department of Energy (DOE), EPA, and SCDHEC will evaluate the need for remedial action.

Under this groundwater monitoring program, additional background monitoring wells will be installed. One of the original background wells for the "M Area" (water table) groundwater unit went dry and was never monitored. The background wells will be used to further evaluate the upgradient concentrations of the contaminants in the "M Area" (water table) groundwater unit. In addition to the new background wells, the existing background well and approximately six existing "M Area" (water table) wells will also be monitored. This monitoring is intended to evaluate trends in groundwater contamination. However, at the five-year Record of Decision (ROD) review, the groundwater monitoring data will be evaluated to determine if any changes in the groundwater remedy are appropriate.

The SCDHEC has modified the SRS RCRA permit to incorporate the selected remedy. This proposal is consistent with EPA guidance and is an effective use of risk management principles.

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 monitoring and reporting.

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

2.1 Deed Notification

A deed notification shall be filed in the appropriate 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.

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, 1996c), 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 SRWU 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 (Figure 3). The signs will be legible from a distance of at least 25 feet. The signs will read:

> Silverton Road Waste Unit (731-3A)
> "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

Site-specific access controls (i. e., fences) are not required for the Silverton Road Waste Unit 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.

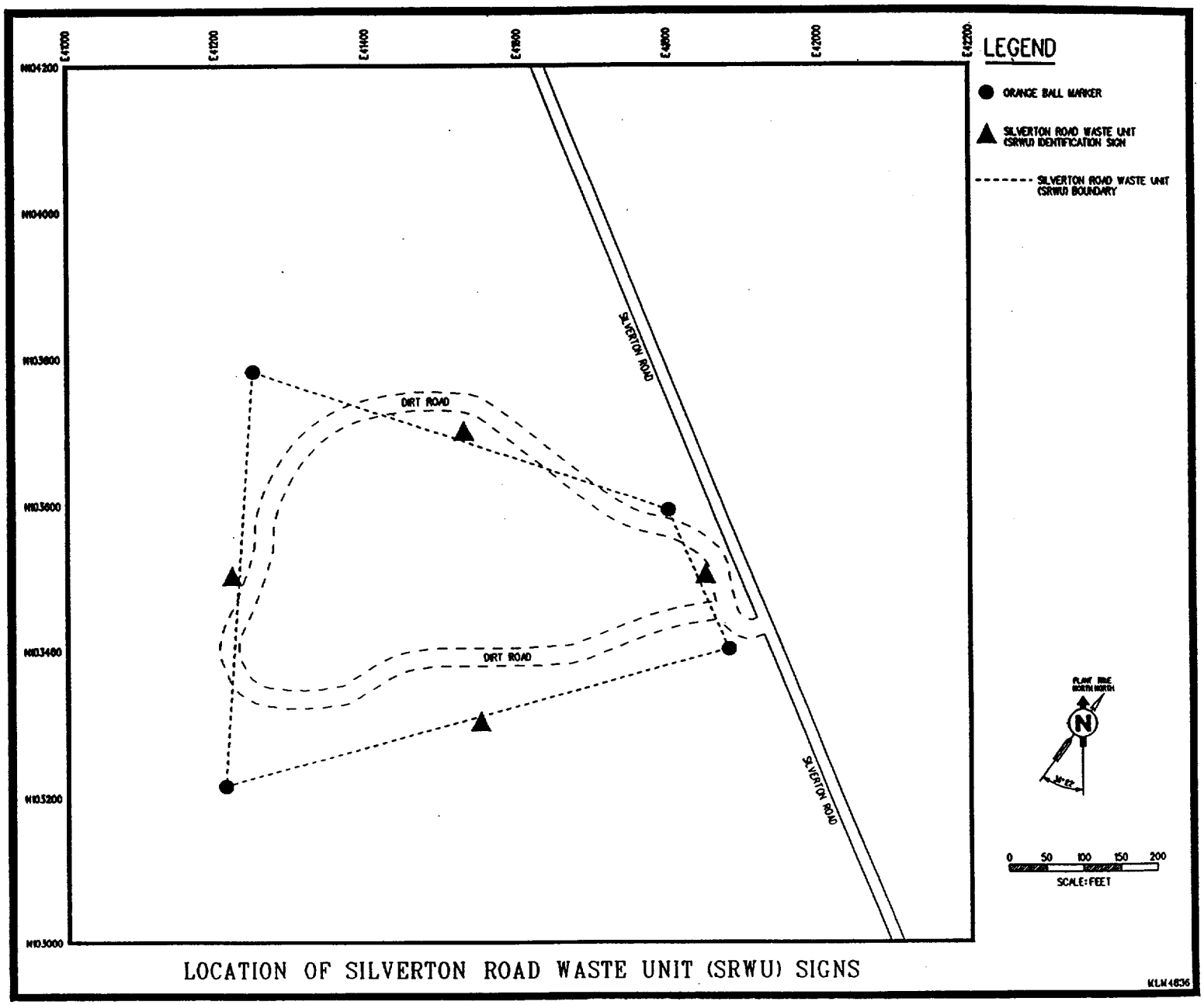
2.3 Field Walkdowns

Field walkdowns of the SRWU, 731-3A, 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 could 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. The 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 SRWU is currently being restricted per the institutional controls corrective action described in the approved *Record of Decision Remedial Alternative Selection for the Silverton Road Waste Unit (731-3A) (U)*, WRSC-RP-96-171, Revision 1, February 1997 (WSRC, 1997). This certification shall be included in the FFA Annual Progress Report.

Figure 3. Locations of the Silverton Road Waste Unit Identification Signs



2.5 Groundwater Monitoring and Reporting

Groundwater monitoring will be performed as identified in the SRWU ROD (WSRC, 1997). The post-ROD groundwater monitoring reports, which will be provided in the FFA Annual Progress Report, will discuss the analytical results for the proposed analytes and any trends in the data (i.e., concentrations are decreasing in the wells, upgradient vs. downgradient results, etc.).

Two new wells (SRW-18 and SRW-19) will be installed at the SRWU at locations to intercept the upgradient "M-Area" aquifer groundwater flow. In addition, background well SRW-17D will be replaced with a new well, SRW-17DR. SRW-17D went dry and was never sampled during the characterization of the unit. The replacement well and the new wells will not be installed until approved by the regulators. The existing wells to be monitored include SRW-2, SRW-4, SRW-7, SRW-8, SRW-9, SRW-12C, and SRW-16C (background well) (Figure 4).

The wells will be monitored for 1,2-dichloroethane, carbon tetrachloride, dichloromethane, tetrachloroethylene (PCE), and trichloroethylene (TCE) (Table 1) due to their sporadic exceedances of Safe Drinking Water Act (SDWA) MCLs. The wells will be monitored on a semi-annual basis during the 2nd and 4th quarters of each calendar year.

Analytes not exceeding background concentrations or SDWA MCLs, as applicable, for four (4) sequential monitoring events will be proposed for removal from the list for subsequent monitoring with concurrence by the EPA and the SCDHEC. The request for concurrence/approval of the removal of analytes shall be submitted under separate cover. In addition, a full evaluation of all the groundwater data collected during a five-year monitoring and review cycle will be performed as part of the five-year ROD review.

3.0 SCHEDULE

The remedial actions to be implemented at the SRWU include the installation of four identification signs as well as two new groundwater monitoring wells. One of the original background wells (SRW-17D) for the water table aquifer will also be replaced. The installation of the identification signs, as described in Section 2.2.1 and the installation of the new and replacement wells are planned to occur during the 2nd quarter of CY98. Groundwater monitoring and semi-annual site inspections are planned to also begin with the 2nd quarter of CY98. The date for the installation of the signs and wells in addition to the groundwater monitoring and site inspections is dependent on regulatory approval of the SRWU Final Remediation Report.

4.0 REFERENCES

WSRC (Westinghouse Savannah River Company), 1996a. *Final Baseline Risk Assessment for the Silverton Road Waste Unit (U)*, WSRC-RP-95-215, Rev. 1.1, Westinghouse Savannah River Company, Aiken, SC (January).

WSRC, 1996b. *Final RFI/RI Report for the Silverton Road Waste Unit (U)*, WSRC-RP-95-214, Rev. 1.2, Westinghouse Savannah River Company, Aiken, SC (April).

WSRC, 1996c. "Procedure 3.02, Site Real Property Configuration Control" located in WSRC 1D, *Site Infrastructure and Services Manual*, Westinghouse Savannah River Company, Aiken, SC (latest revision).

WSRC, 1997. *Record of Decision Remedial Alternative Selection for the Silverton Road Waste Unit (731-3A) (U)*, WSRC-RP-96-171, Rev. 1, Westinghouse Savannah River Company, Aiken, SC (February).

Figure 4. Locations of the Silverton Road Waste Unit Post-ROD Groundwater Monitoring Wells

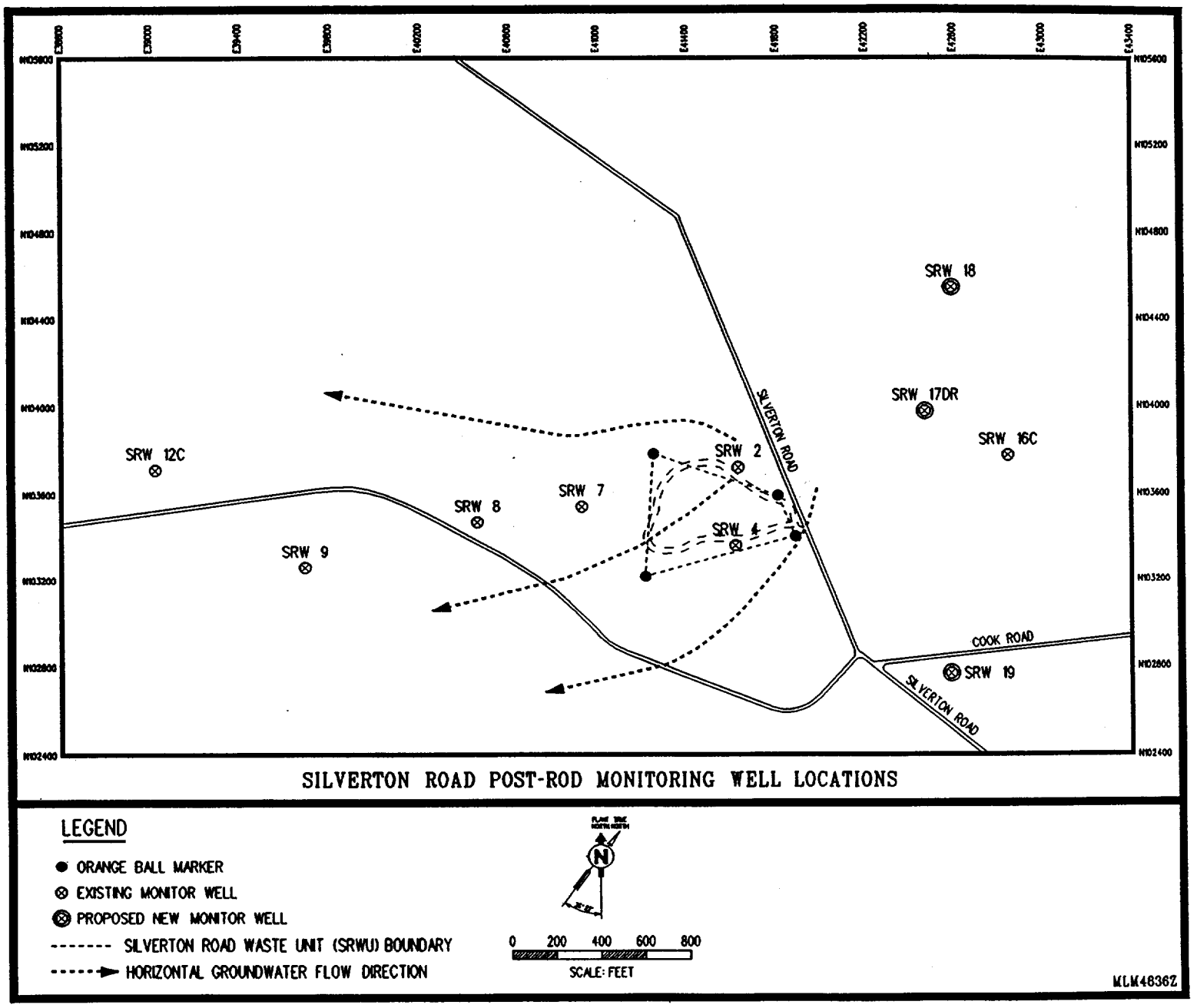


Table 1. Silverton Road Waste Unit Groundwater Monitoring Constituents

Constituents	Wells to be Monitored	Sampling Frequency	Reporting Frequency
1,2-Dichloroethane	SRW-2, SRW-4, SRW-7, SRW-8, SRW-9, SRW-12C, SRW-16C*, SRW-17DR*, and 2 new wells	Semi-Annual	Annual
Carbon tetrachloride	SRW-2, SRW-4, SRW-7, SRW-8, SRW-9, SRW-12C, SRW-16C*, SRW-17DR*, and 2 new wells	Semi-Annual	Annual
Dichloromethane	SRW-2, SRW-4, SRW-7, SRW-8, SRW-9, SRW-12C, SRW-16C*, SRW-17DR*, and 2 new wells	Semi-Annual	Annual
Tetrachloroethylene (PCE)	SRW-2, SRW-4, SRW-7, SRW-8, SRW-9, SRW-12C, SRW-16C*, SRW-17DR*, and 2 new wells	Semi-Annual	Annual
Trichloroethylene (TCE)	SRW-2, SRW-4, SRW-7, SRW-8, SRW-9, SRW-12C, SRW-16C*, SRW-17DR*, and 2 new wells	Semi-Annual	Annual

*** Background wells. SRW-17DR is a replacement well for SRW-17D, which went dry before it could be sampled.**

ATTACHMENT A

FIELD INSPECTION CHECKLIST

TYPICAL

ER INSPECTION DATA SHEET FOR WASTE SITES

Page 1 of 3

Waste Site: _____ **A = Satisfactory** **X = Unsatisfactory (Comments required)**	**A or X**	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

ER INSPECTION DATA SHEET FOR WASTE SITES

Page 2 of 3

Waste Site: _____ **A = Satisfactory** **X = Unsatisfactory (Comments required)**	**A or X**	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.61-71.6.H?		
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

ER INSPECTION DATA SHEET FOR WASTE SITES

Page 3 of 3

Waste Site: _____ **A = Satisfactory** **X = Unsatisfactory (Comments required)**	**A or X**	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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