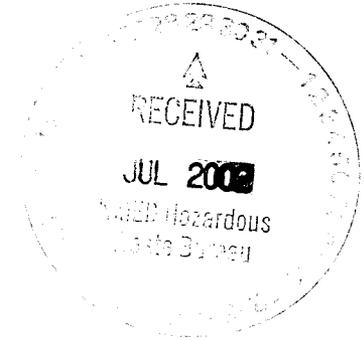




Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221

July 26, 2002

ENTERED



Mr. Steve Zappe, Project Leader
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Bldg. 1
Santa Fe, New Mexico 87505-6303

Re: Transmittal of the Amended Certification Audit Report for the Savannah River Site (A-2-20)

Dear Mr. Zappe:

This letter transmits the Savannah River Site Audit Report for three additional processes performed to characterize and certify waste as required by Section II.C.2.c of the WIPP Hazardous Waste Facility Permit. The audit was conducted March 13-14, 2002.

I certify under penalty of law that this document and all enclosures 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, or those persons directly responsible for gathering the information, 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.

Please contact the Carlsbad Field Office Quality Assurance Manager, Ava L. Holland, at (505) 234-7423 should you have any questions concerning this audit report.

Sincerely,

Dr. Ines R. Triay
Manager

Enclosure



Mr. Steve Zappe

-2-

July 26, 2002

cc w/o enclosure:

T. Harms, DOE-HQ
A. Holland, CBFO
D. Miehl, CBFO
K. Watson, CBFO
J. Schneider, RFFO
J. Kieling, NMED
J. Bearzi, NMED
J. D'Amelio, SRS
M. Mason, SRS
J. Lee, WTS
C. Riggs, CTAC
T. Bowden, CTAC

cc w/enclosure:

P. Roush, WTS
C. Walker, Techlaw
CBFO M&RC

U.S. DEPARTMENT OF ENERGY
CARLSBAD FIELD OFFICE

AMENDED FINAL AUDIT REPORT

OF THE

SAVANNAH RIVER SITE (SRS)

AIKEN, SOUTH CAROLINA

AUDIT NUMBER A-02-20

March 13-14, 2002

FINAL AUDIT REPORT OF TRU WASTE CHARACTERIZATION USING
NEW HEADSPACE GAS SAMPLING AND ANALYSIS SYSTEMS
AND PROCESSES IN ACCORDANCE WITH THE
HAZARDOUS WASTE FACILITY PERMIT



Prepared By: Charles L. Riggs

Charles L. Riggs
Audit Team Leader, CTAC

Date: 7/18/02

Approved By: Ava L. Holland

Ava L. Holland
Quality Assurance Manager

Date: 7/23/02

1.0 EXECUTIVE SUMMARY

Carlsbad Field Office (CBFO) Audit A-02-20 was conducted to evaluate the adequacy, implementation, and effectiveness of Savannah River Site (SRS) transuranic (TRU) waste characterization activities for new headspace gas (HSG) sampling and analysis systems and processes relative to the requirements detailed in the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit (HWFP) and the CBFO Quality Assurance Program Document (QAPD).

The audit was conducted at the SRS facility March 13-14, 2002. The audit team concluded that the overall SRS technical and quality assurance (QA) programs, as applicable to compositing with the currently certified HSG analysis equipment and the new canister cleaning station, were adequate and satisfactory in meeting requirements. The audit team also concluded that overall, the defined QA and technical programs for these activities were satisfactorily implemented, in accordance with the SRS Quality Assurance Project Plan (QAPJP) and its implementing procedures, and that the processes were effective.

The status of the new HSG analysis equipment at Building 305-A, Sea-Land storage units, and the NucFil HSG sampling port dart installation system, was indeterminate. Status of these equipment and systems will be submitted to the New Mexico Environment Department (NMED) at a later date.

The new HSG analysis equipment at Building 305-A (System 2) has now been operated, producing Batch Data Report 02-HSGA-019, and has successfully passed Performance Demonstration Program (PDP) Cycle 16A. The procedures have been finalized and site safety concerns resolved for the NucFil HSG sampling port dart installation system and Sea-Land storage units. Information concerning these activities appears in **RED** throughout this report and supporting documentation (such as the B6 checklist and content map).

The audit team did not identify any conditions adverse to quality. No Corrective Action Reports (CARs) or Observations were issued, no deficiencies were Corrected During the Audit (CDA), and no Recommendations are being offered for SRS management consideration.

2.0 SCOPE AND PURPOSE

2.1 Scope

The audit team evaluated the adequacy, implementation, and effectiveness of the SRS TRU waste characterization activities, in particular, additional HSG sampling and analysis systems and processes, relative to the requirements contained in the WIPP HWFP, attachments B through B6. Compliance was documented by completing the attachment B6 checklist for the applicable SRS activities. The following SRS program elements were evaluated in accordance with the HWFP:

Quality

Nonconformances

Training

Records

Technical

Headspace Gas

- Compositing with the currently certified HSG analysis equipment
- New cleaning station
- New HSG analysis equipment at Building 305-A
- NucFil HSG Sampling Port Dart Installation System
- Sea-Land Storage Units

The evaluation of SRS TRU waste activities and documents was based on current revisions of the following documents:

Waste Isolation Pilot Plant Hazardous Waste Facility Permit

Quality Assurance Program Document, CAO-94-1012

Savannah River Site WIPP Disposal Program Quality Assurance Project Plan, WSRC-RP-99-01097

Savannah River Site WIPP Disposal Program Quality Assurance Program Document, WSRC-RP-99-01119

Related SRS technical and quality assurance implementing procedures

2.2 Purpose

Audit A-02-20 was conducted to assess whether SRS's additional HSG characterization activities complied with the WIPP HWFP requirements.

3.0 AUDIT TEAM AND OBSERVERS

AUDITORS/TECHNICAL SPECIALISTS

Charlie Riggs	Audit Team Leader, CTAC
William (BJ) Verret	Technical Specialist, CTAC

4.0 AUDIT PARTICIPANTS

SRS individuals involved in the audit process are identified in Attachment 1. A preaudit meeting was held in SRS Building 724-7E on March 13, 2002. Daily interfaces were held with SRS management and staff to discuss issues and potential deficiencies. The audit was concluded with a postaudit meeting held in Building 724-7E on March 14, 2002.

5.0 SUMMARY OF AUDIT RESULTS

5.1 Program Adequacy and Implementation

This audit was performed to assess the compliance of SRS waste characterization processes for the new HSG canister cleaning station and compositing with the currently certified HSG analysis equipment. Data review, validation, and use of those results to perform data quality objective (DQO) reconciliation were assessed. The status of the new HSG analysis equipment at Building 305-A, Sea-Land storage units, and the NucFil HSG sampling port dart installation system, was indeterminate. Status of these equipment and systems will be submitted to the NMED at a later date.

The new HSG analysis equipment at Building 305-A (System 2) has now been operated, producing Batch Data Report 02-HSGA-019, and has successfully passed Performance Demonstration Program (PDP) Cycle 16A. The procedures have been finalized and site safety concerns resolved for the NucFil HSG sampling port dart installation system and Sea-Land storage units.

The audit team concluded that the applicable SRS TRU waste characterization activities for the new systems and processes audited, as described in the associated SRS implementing procedures, satisfactorily meet the requirements contained in the HWFP. Details of audit activities, including specific objective evidence reviewed, are presented below and are documented in the attached B6 checklist. The B6 checklist identifies the SRS program documents and procedures in which the WAP requirements are met. Attachment 2 contains examples of the objective evidence reviewed during the audit.

5.2 Technical Activities

Each technical area audited is discussed in detail in the following sections. The method used to select objective evidence is discussed, the objective evidence used to assess compliance with the WAP is cited briefly (and in detail on the checklist), and the results of the assessment are provided.

Objective evidence to evaluate the implementation of the associated characterization activities was selected and reviewed. Batch data reports, sampling records, and training documentation for TRU Waste Characterization Program (TWCP) personnel were included in the evaluation. The audit included direct observation of actual waste characterization activities (such as canister cleaning and compositing). Each characterization process involves:

- Collecting raw data
- Collecting quality assurance/quality control (QA/QC) samples or information
- Reducing the data to a useable format, including a standard report

- Reviewing the report (done by the data generation facility and the site project office (SPO))
- Comparing the data against program DQOs
- Reporting the final waste characterization information to WIPP

If a question could not be satisfactorily answered, an audit concern would have been identified. No concerns were identified during the audit.

5.2.1 Table B6-1 WAP Checklist

This audit was performed to assess SRS' ability to characterize waste using five additional HSG sampling and analysis systems and processes. These new systems and processes do not change the overall SRS program evaluated during audit A-01-01 for Summary Category Group S5000 retrievably stored debris waste. Therefore, there is no supplemental information to add to the B6-1 checklist.

5.2.2 Table B6-2 Solids and Soil/Gravel Sampling Checklist

No solids or soil/gravel waste streams are currently being processed by SRS. These areas were not audited; therefore, no SRS S3000 or S4000 waste will be accepted for disposal at WIPP until the procedures and processes have been audited and accepted by CBFO and a final audit report for those processes has been approved by NMED.

5.2.3 Table B6-3 Acceptable Knowledge Checklist

This audit was performed to assess the ability at SRS to characterize waste using five additional HSG sampling and analysis systems and processes. The additional HSG activities have no impact on the acceptable knowledge process; therefore, there is no supplemental information to add to the B6-3 checklist. SRS continues to satisfactorily meet the HWFP WAP acceptable knowledge requirements.

5.2.4 B6-4 Headspace Gas Checklist

HSG canister cleaning operations at SRS were observed for 6-liter (6L) Silco® canisters using a new 15-port canister cleaning station in Building 724-8E. The following procedures were evaluated:

- SW15.7-SOP-HSGA-01, *Headspace Gas Analysis Operations*
- SW18-WP-AP-0015, *Data Generation Level Validation and Verification for Headspace Gas Analysis*
- SW15.7-SOP-CCCP-02, *Canister Cleaning and Certification in 724-8E*

During the evaluation of canister cleaning, leak-checking activities and the implementation of chain-of-custody activities were also observed and evaluated. Documentation specific to these activities (e.g., chain-of-custody (COC) forms and

certification of cleanliness) was reviewed to ensure that the sampling operations and activities are being properly recorded. It was determined that these activities were conducted in accordance with the WAP requirements.

HSG compositing operations at SRS were observed, including the analysis of HSG samples collected in 6L Silco® canisters. The following procedures were evaluated:

- SW18-WP-AP-0020, *Headspace Gas Analysis Batch Data Review Reference Tables*
- SW15.7-SOP-HSGA-01, *Headspace Gas Analysis Operations*
- SW18-WP-AP-0015, *Data Generation Level Validation and Verification for Headspace Gas Analysis*

HSG compositing activities were audited by process observation and evaluation and review of available HSG batch data reports. Analytical batch data report 02-HSGA-009 was reviewed to evaluate analysis results in accordance with WAP requirements. HSG analysis operations were evaluated on March 13, 2002, at the SRS analytical facility. Audit activities consisted of a walk-through of the process of compositing the HSG samples from five 6L Silco® canisters into one canister.

Documentation specific to these activities (e.g., calibration records, maintenance logbooks, and instrument logbooks) were reviewed to ensure that laboratory operations were in accordance with QA requirements specified in the WAP. Documentation reviewed is included in the batch data reports contained in Attachment 2.

The Table B6-4 HSG checklist was completed by assessing the implementation of the compositing procedures. Analysis operations were observed and records from these activities were reviewed. Specific information regarding these observations and the records reviewed is included in the objective evidence column of Table B6-4.

Equipment is controlled to ensure that it does not contaminate the sample. Sample integrity is protected using procedure SW15.7-SOP-HSGA-01, *Headspace Gas Analysis Operations*, and SW15.7-SOP-CCCP-02, *Canister Cleaning and Certification in 724-8E*. SOP-CCCP-02 describes the requirements for the use of COC forms. Copies of the COC forms and the sample canister information documents are included in the batch data reports.

Analysis of samples is controlled by procedure SW15.7-SOP-HSGA-01, *Headspace Gas Analysis Operations*. Review of the results to ensure that they meet program QAOs is controlled by SW18-WP-AP-0015, *Data Generation Level Validation and Verification for Headspace Gas Analysis*, and SW18-WP-AP-003, *WIPP Disposal Program Project Level Validation and Verification*. HSG analysis batch data report 02-HSGA-009 was reviewed to ensure that both data-generation-level and project-level validation and verification activities were properly performed.

Headspace gas analysis operations at SRS Building 305-A (System 2) were observed, including the analysis of headspace gas samples collected into 6L Silco® canisters. The following sampling and analysis procedures were evaluated:

- SW18-WP-AP-0026, *Headspace Gas Analysis Batch Data Review Reference Tables for 305-A*
- SW15.7-SOP-HSGA-02, *Headspace Gas Analysis Operations at 305-A*
- SW15.7-INSP-PDP-02, *WIPP Disposal Program Headspace Gas Analysis Performance Demonstration Program (PDP)*.
- SW18-WP-AP-0015, *WIPP Disposal Program Data Generation Level Validation and Verification for Headspace Gas Analysis*.

Headspace gas analysis activities were audited by interviewing personnel and reviewing the available headspace gas analytical batch data report 02-HSGA-019 to evaluate analysis results in accordance with WAP requirements. A walkthrough of the headspace gas analysis operations was conducted on March 14, 2002, at the SRS analytical facility.

Documentation specific to these activities (e.g., calibration records, maintenance logbooks, and instrument logbooks) was reviewed to ensure that laboratory operations were in accordance with quality assurance requirements specified in the WAP. Documentation reviewed is included in the batch data report contained in Attachment 3.

The NucFil HSG sampling port dart installation system and the following procedures were evaluated:

- SW15.7-SOP-SPI-01, *Headspace Gas Sampling Port Installation Operations*
- SW15.7-SOP-SSP-01, *Headspace Gas Sampling Through a Sample Port*

The NucFil HSG sampling port dart installation activities were audited by interviewing personnel, reviewing documentation, and observing the process for inserting a dart, with the exception of the actual firing of the dart gun, due to limitations imposed by the SRS Safety Organization.

Three additional Sea-Land storage units were examined. These units are identical to the three approved as a result of the Central Characterization Project (CCP) audit (CBFO Audit A-02-09) performed at SRS. They are tied into the same monitoring panel as the original three units. These new units have also been equipped with an atmospheric pressure sensor and a thermal door (for emergency egress) to allow sampling to be conducted within the storage units.

The SRS HSG activities were concluded to be adequate, implemented, and effective, in accordance with the WAP requirements.

5.2.5 Table B6-5 Radiography Checklist

This audit was performed to assess the ability at SRS to characterize waste using five additional HSG sampling and analysis systems and processes. SRS has not changed its radiography process since audit A-01-01; therefore, there is no supplemental information to add to the B6-5 checklist. SRS continues to satisfactorily meet the HWFP WAP radiography requirements.

5.2.6 Table B6-6 Visual Examination Checklist

This audit was performed to assess the ability at SRS to characterize waste using five additional HSG sampling and analysis systems and processes. SRS has not changed the visual examination process since audit A-01-01; therefore, there is no supplemental information to add to the B6-6 checklist. SRS continues to satisfactorily meet the HWFP WAP visual examination requirements.

6.0 SUMMARY OF DEFICIENCIES

6.1 Corrective Action Reports

During the audit, the audit team may identify Conditions Adverse to Quality (CAQ) and document such conditions in Corrective Action Reports (CARs).

Condition Adverse to Quality (CAQ) – Term used in reference to failures, malfunctions, deficiencies, defective items, and nonconformances.

Significant Condition Adverse to Quality – A condition which, if uncorrected, could have a serious effect on safety, operability, waste confinement, TRU waste site certification, compliance demonstration, or the effective implementation of the QA program.

No WAP-related CARs resulted from this audit.

6.2 Deficiencies Corrected During the Audit

During the audit, the audit team may identify CAQs. The audit team members and the Audit Team Leader (ATL) evaluate the CAQs to determine if they are significant using the following definitions:

CAQ – Term used in reference to failures, malfunctions, deficiencies, defective items, and nonconformances.

Significant CAQ – A condition which, if uncorrected, could have a serious effect on safety, operability, waste confinement, TRU waste site certification, compliance demonstration, or the effective implementation of the Quality Assurance (QA) program.

Once a determination is made that the CAQ is not significant, the audit team member, in conjunction with the ATL, determines if the CAQ is an isolated case requiring only remedial action and therefore can be a CDA. Upon determination that the CAQ is isolated, the audit team member, in conjunction with the ATL, evaluates/verifies any objective evidence/actions submitted or taken by the audited organization and determines if the condition was corrected in an acceptable manner. Once it has been determined that the CAQ has been corrected, the ATL categorizes the condition as a CDA according to the definition below.

CDA – An isolated deficiency that does not require a root cause determination or actions to preclude recurrence. Correction of the deficiency can be verified prior to the end of the audit. Examples include one or two minor changes required to correct a procedure (isolated), one or two forms not signed or not dated (isolated), and one or two individuals that have not completed a reading assignment.

No CDAs resulted from this audit.

7.0 SUMMARY OF OBSERVATIONS AND RECOMMENDATIONS

During the audit, the audit team may identify potential problems or suggestions for improvement that should be communicated to the audited organization. The audit team members, in conjunction with the audit Team Leader (ATL), evaluate these conditions and classify them as Observations or Recommendations using the following definitions:

Observation – A condition that, if not controlled, could result in a CAQ.

Recommendation – A suggestion directed toward identifying opportunities for improvement and enhancing methods of implementing requirements.

Once a determination is made, the audit team members, in conjunction with the ATL, categorize the condition appropriately.

7.1 Observations

No Observations resulted from this audit.

7.2 Recommendations

No WAP-related Recommendations were provided to SRS management during the audit.

8.0 LIST OF ATTACHMENTS

- Attachment 1: Personnel Contacted During the Audit and the List of Procedures Audited
- Attachment 2: Objective Evidence
- Attachment 3: Audited SRS Implementing Procedures Listing

PERSONNEL CONTACTED DURING THE AUDIT

SRS PERSONNEL CONTACTED DURING AUDIT A-02-20				
NAME	TITLE/ORG	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST AUDIT MEETING
Blair, David	WSRC, Chemist		X	
Cheeks, Kenneth E.	WSRC, FSSD/ALD			X
Conrad, M. F. 'Dutch'	Facility Manager, SWO			X
Crapse, Bert	DOE/SR, TRU Program Manager	X		X
Culligan, Brian K.	WSRC, Principal Scientist	X	X	X
D'Amelio, Joe	WSRC/SWD, Site Project Manager	X	X	X
Dicks, Deneen	PE&CD/P&CT, Technical Support	X		
Fussell, Buddy	NFT/VPM, VPM		X	
Gregory, Clint	FSSD/ALD, HGAS Lab Manager			X
Hawkins, Shane	NFT/SWO, Operator		X	
Jackson, Glen	WSRC-SWE, CTF-Gas Sampling	X	X	X
Kienzle, Stephen	SWD Training, Training Specialist	X	X	X
Kokovich, Mark	SPM/TRU Ops. Manager	X	X	X
Mason, Mike J.	Site Project QA Manager	X		X
Melton, Jessie	WSRC, Chemist	X	X	X
Mentrup, Steve J.	SWE, TRU Technical Advisor	X		
Mobley, James C.	NFT/SWO, VEE		X	
Phillips, Jeannie	Division Records Office	X		
Sessions, Henry T.	WSRC/EES, Sr. Engineer			X

SRS PERSONNEL CONTACTED DURING AUDIT A-02-20				
NAME	TITLE/ORG	PREAUDIT MEETING	CONTACTED DURING AUDIT	POST AUDIT MEETING
Stotter-Hardy, Shauna	NFT/HSG, Operator		X	
Wilson, Leah	Lead Ops Specialist/Shift Manager, SWO	X	X	X