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

May 1, 2002

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 Certification Audit Report for the Savannah River Site (A-02-06)

Dear Mr. Zappe:

This letter transmits the Savannah River Site Audit Report for the processes performed to characterize and certify waste as required by Section II.C.2.c of the WIPP Hazardous Waste Facility Permit. The report contains the results of the annual re-certification audit performed for the processes previously approved by NMED for the characterization and certification of retrievably stored debris waste. This report also includes the required information to extend their certification to include all retrievably stored debris waste. The Audit was conducted December 10-14, 2001.

I certify under 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, 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 CBFO Quality Assurance Manager, Ava L. Holland, at (505) 234-7423 should you have any questions concerning this audit report.

Sincerely,

Inés R. Triay

Dr. Inés R.Triay
Manager

Enclosure

020501

cc w/o enclosure:
T. Harms, DOE-HQ
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U.S. DEPARTMENT OF ENERGY
CARLSBAD FIELD OFFICE

FINAL AUDIT REPORT

OF THE

SAVANNAH RIVER SITE (SRS)

AIKEN, SOUTH CAROLINA

AUDIT NUMBER A-02-06

DECEMBER 10-14, 2001

FINAL AUDIT REPORT OF WASTE CHARACTERIZATION IN ACCORDANCE WITH THE HAZARDOUS WASTE FACILITY PERMIT

Prepared By: _____ **Date:** 04/29/02
Charles L. Riggs
Audit Team Leader, CTAC

Approved By: _____ **Date:** 4/29/02
Ava L. Holland
Quality Assurance Manager

1.0 EXECUTIVE SUMMARY

Carlsbad Field Office (CBFO) Audit A-02-06 was conducted to evaluate the adequacy, implementation, and effectiveness of the Savannah River Site (SRS) transuranic (TRU) waste characterization activities for debris waste relative to the requirements detailed in the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit (HWFP).

The scope of the audit included Summary Category Group S5000 debris waste (in particular, retrievably stored debris waste). This includes both the recertification of the presently approved waste stream, SR-T001-221F-HET, and expansion to be able to characterize all Summary Category Group S5000 retrievably stored debris waste.

The audit was conducted at the SRS facilities December 10 – 14, 2001. The audit team concluded that the SRS technical and quality assurance (QA) programs, as applicable to the audited activities, met requirements contained in the HWFP. The deficiencies identified in the corrective action reports (CARs) discussed below have been corrected. The audit team also concluded that the defined QA and technical processes for the audited activities were being implemented in accordance with the SRS Quality Assurance Project Plan (QAPjP) and related implementing procedures. The audited processes were also found to be effective.

The audit team identified three HWFP-related conditions adverse to quality resulting in the issuance of two CBFO CARs that require corrective action in the area of Acceptable Knowledge (AK). Two Observations were identified, and two Recommendations are being offered for SRS management consideration. The CARs are described in Section 6.0 and the Observations and Recommendations are discussed in Section 7.0.

2.0 SCOPE AND PURPOSE

2.1 Scope

The audit team evaluated the adequacy, implementation, and effectiveness of the SRS TRU waste characterization processes for retrievably stored debris waste relative to the requirements contained in the WIPP HWFP, Attachments B through B6. Continued 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:

General

Results of previous audits
Changes in programs or operations
New programs or activities being implemented
Changes in key personnel

Quality

Nonconformances/Corrective Action
Personnel Qualification and Training
Documents and Records
Sample Control

Technical

Acceptable Knowledge (AK)
Headspace Gas and Gas VOCs Sampling and Analysis
Real-Time Radiography (RTR)
Visual Examination (VE)
Data Generation Level Verification and Validation
Project Level Verification and Validation
WIPP Waste Information System (WWIS) Data Entry
Waste Stream Profile Form

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

CAO 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-02-06 was conducted to assess the continued compliance of characterization activities at SRS with the WIPP HWFP requirements for waste stream SR-T001-221F-HET and the ability to expand those capabilities to include all Summary Category Group S5000 retrievably stored debris waste.

3.0 AUDIT TEAM AND OBSERVERS

AUDITORS/TECHNICAL SPECIALISTS

Charlie Riggs	Audit Team Leader, CTAC
Steve Calvert	Auditor, CTAC
Wayne Ledford	Auditor/Technical Specialist, CTAC
Steve Davis	Auditor, CTAC
Pete Rodriguez	Auditor, CTAC

Porf Martinez	Auditor, CTAC
Jim Schuetz	Auditor, CTAC
Chet Wright	Auditor, CTAC
Dee Scott	Auditor/Technical Specialist, CTAC
Tom Putnam	Auditor-in-Training, CTAC
Dick Blauvelt	Technical Specialist, CTAC
Patrick Kelly	Technical Specialist, CTAC
Joe Willis	Technical Specialist-in-Training, WTS

OBSERVERS

Steve Zappe	NMED
Steve Holmes	NMED
Connie Walker	Trinity Eng. (NMED)
Ben Walker	EEG

4.0 AUDIT PARTICIPANTS

SRS individuals involved in the audit process are identified in Attachment 1. A pre-audit meeting was held at the SRS site in Building 766H, Room 1026, on December 10, 2001. A daily meeting was held with SRS management and staff to discuss issues and potential deficiencies. The audit was concluded with a post-audit meeting in Building 766H, Room 1003, on December 14, 2001.

5.0 SUMMARY OF AUDIT RESULTS

5.1 Program Adequacy and Implementation

This audit was performed to assess the ability of SRS to characterize retrievably stored debris waste from Summary Category Group S5000 to the requirements specified in the WIPP Waste Analysis Plan (WAP). The characterization methods assessed were headspace gas sampling, headspace gas analysis, AK, RTR, and VE. Data review, validation, data quality objective (DQO) reconciliation, WWIS data entry, and the preparation of the Waste Stream Profile Form (WSPF) were also assessed. Newly generated waste streams and waste streams from Summary Category Group S3000 and S4000 will require an additional audit because the requirements specific to these areas were not included in the scope of this audit.

The audit team concluded that the applicable SRS TRU waste characterization activities, as described in the associated SRS implementing procedures, satisfactorily meet the requirements contained in the HWFP. The deficiencies identified in Section 6.1 have been corrected. The supporting documentation for the closure of the CARs and the CDA is contained in Attachment 2. Details of audit activities, including specific objective evidence reviewed, are described 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 3 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 result of the assessment is 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 and/or a demonstrated walk-through of waste characterization activities (such as gas sampling and analysis, RTR, and WWIS data entry). 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
- Review of the report 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

Each checklist question that could not be satisfactorily answered resulted in an audit deficiency. A CAR was prepared to document those items not adequately addressed during the audit. A CAR allows CBFO to track SRS's efforts to remediate the identified deficiency. CBFO CARs 02-029 and 02-030 are addressed in Section 6.1. All WAP-related CARs have been satisfactorily closed. The WAP-related CARs are identified on the B6 checklist tables under the corresponding item number.

5.2.1 Table B6-1 WAP Checklist

The B6-1 WAP checklist addresses program requirements from an overall management perspective and the validation of the data at the site project level. It documents the verification that the waste characterization strategy, as defined in the WAP, is implemented by using controlled procedures. In addition, Table B6-1 documents the site project-level reviews of the data collected as a result of the waste characterization implementing procedures. This audit was performed to assess SRS's continued ability to characterize Summary Category Group S5000 debris waste stream SR-T001-221F-HET and to expand those capabilities to include all summary Category Group S5000 retrievably stored debris waste. Objective evidence was reviewed as part of this assessment and utilized in the completion of this table. The objective evidence included completed batch reports (completed through the SPO review) for RTR, headspace gas, and visual examination. In addition, procedures and objective

evidence were reviewed to ensure that SRS could adequately perform data reconciliation and properly prepare a WSPF.

Objective evidence was reviewed to make a determination of the adequacy of the SPO verification and validation procedures. Evidence included batch data reports from each of the waste characterization activities.

The flow of data from the point of generation to inclusion in the WSPF for each characterization technique was reviewed to ensure that all applicable requirements were captured in the site operating procedures. The material in this section is also addressed in more detail in the following checklists, where the specific procedures audited and the objective evidence reviewed are identified.

SRS demonstrated compliance with the characterization requirements of the WAP through documentation and by demonstrating the characterization activities. The project-level data verification and validation process was evaluated by reviewing the following batch data reports:

01-VE-020
01-VE-030
01-RTR-018
01-RTR-026
01-HSGS-041
01-HSGA-028

Copies of these items are included in Attachment 3.

AK and the auditable record were reviewed in detail for a Summary Category Group S5000 waste stream. The AK record was reviewed to demonstrate that the required information was present and correctly interpreted. The batch reports cited above were used to demonstrate confirmation of AK, reconcile DQOs, prepare a WSPF, and transmit data to WIPP using the WWIS.

A WSPF (2001.001.00) and the summarized characterization information related to it were reviewed to establish the objective evidence for reporting waste characterization information to WIPP. The form was completed using information from current characterization processes. As required, an actual WSPF was prepared and submitted to CBFO prior to waste shipment. The form was reviewed and approved by the CBFO when the waste stream had been fully characterized and the site was approved to ship waste.

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

No solids or soils/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 the New Mexico Environment Department (NMED).

5.2.3 Table B6-3 Acceptable Knowledge Checklist

This audit was performed to assess the ability of SRS to characterize Summary Category Group S5000 retrievably stored debris waste streams. Items on the AK checklist are intended to ensure that SRS has an AK process in place to:

- Train data collection personnel
- Assemble those data into a coherent narrative that describes the waste generation process and constituents of the waste
- Segregate the waste into like waste streams
- Provide Resource Conservation and Recovery Act (RCRA) characterization for those waste streams
- Confirm characterizations using testing and sampling and analysis
- Provide an auditable set of records to support the characterization

AK summary report WSRC-TR-2001-00527, Revision for waste streams SR-W027-221F-HET-A, SR-W027-221F-HET-C-D, and SR-W027-221F-HET-E was reviewed. During the review of this report it was determined that there were discrepancies between the report and a report prepared by the Centralized Characterization Project (CCP) on the same waste streams. This determination resulted in CAR 02-030 being issued. The conditions noted in this CAR were subsequently corrected. Additional detail regarding CAR 02-030 is provided in Section 6.1.2.

The following AK procedures were evaluated:

- SW18-WP-AP-002, *WIPP Disposal Program Acceptable Knowledge*
- SW18-WP-AP-008, *WIPP Disposal Program Waste Certification Statement Preparation*
- SW18-WP-AP-009, *WIPP Disposal Program Waste Stream Determination and Reporting*
- SW18-WP-AP-0010, *WIPP Disposal Program Waste Stream Profile Form Preparation and Reconciliation with Data Quality Objectives*

AK Summary documentation contained in the auditable record and container-specific information were reviewed. Traceability of the AK documentation was accomplished by a review of WSRC-TR-2001-00527. The summary documents and supporting documentation identify the waste stream and point of generation for the containers.

Several of the references were selected to ensure that they are included in the auditable record and to ascertain if the source documents support AK determinations. These sources include such items as published reports, process flow diagrams, interviews with site personnel concerning the use of hazardous materials, and reports of previous waste characterization sampling and analysis efforts. The review of these

references resulted in a determination that limitations of the AK documentation have been documented as required by the WAP.

The AK process was evaluated by reviewing the AK summary, document WSRC-TR-2001-00527. The auditable record was searched to ensure that the cited references were available and that the reviewer could reach the same hazardous waste determination as presented in the AK summary. Information from the debris waste stream was selected and the AK information was traced from the summary through the AK source document reviews to the original records. The information for containers SR226297 and SR226409 was traced to verify characterization as determined by the AK. The information was available in the record files and supported the AK determination.

The AK process includes provisions to identify and resolve any waste stream information that conflicts with what is expected (confirmation processes). The audit team noted problems with the compilation of the AK Accuracy Report, resulting in the issuance of CBFO CAR 02-029. The conditions noted in this CAR were subsequently corrected. Additional detail regarding CAR 02-029 is provided in Section 6.1.1. The discrepancy resolution procedure is SW18-WP-AP-002, *WIPP Disposal Program Acceptable Knowledge.*

Additional documentation supporting AK summary documents and AK source document review summaries are contained in Attachment 3 to support the entries in Table B6-3.

SRS WSPF SR2001.001.00 and the information related to it was reviewed as objective evidence of the SRS process for reporting characterization information to WIPP. Procedure SW18-WP-AP-0010, *WIPP Disposal Program Waste Stream Profile Form Preparation and Reconciliation with Data Quality Objectives*, was evaluated during the audit.

The cited procedures are used by SRS to assemble, evaluate, document, and reconcile testing and sampling and analysis results. The procedures were reviewed for adequacy during the audit and their implementation was assessed.

Reports and records used to document the basis of the SRS AK process were evaluated; copies of pages used for objective evidence are included in Attachment 3. The reports were determined to be satisfactory and the QA records were properly maintained. The list of AK documentation reviewed is included in Attachment 3.

Three issues in this area, resulting in two Observations (Observations 1 and 2) and a Recommendation (Recommendation 1) were identified in the audit. The Observations and Recommendation are given in Section 7.1 and 7.2, respectively.

The audit team concluded that the SRS acceptable knowledge process is adequate and satisfactorily implemented, and the process is effective.

5.2.4 B6-4 Headspace Gas Checklist

Headspace gas sampling operations at SRS were evaluated for the collection of samples and the cleaning of Silco® canisters. The following procedures were evaluated:

- SW15.7-SOP-HSGS-01, *Headspace Gas Sampling*
- SW15.7-SOP-HSGA-01, *Headspace Gas Analysis Operations*
- SW18-WP-AP-0014, *Data Generation Level Validation and Verification for Headspace Gas Sampling*
- SW18-WP-AP-0015, *Data Generation Level Validation and Verification for Headspace Gas Analysis*
- SW15.7-SOP-CCCP-01, *Canister Cleaning and Certification*
- SP-SW-099, *Collecting Field Reference Standard and Equipment Blank Samples*
- SP-SW-092, *Collecting Annual Field References Standard and Equipment Blank Samples*

Audit activities relative to headspace gas sampling included a review of sampling equipment, interviews with personnel, and review of available headspace gas sampling batch data reports. Sampling batch data report 01-HSGS-060 was reviewed to evaluate sampling methods against WAP requirements. The audit team concluded that SRS is properly implementing the headspace gas sampling procedures and collecting samples into Silco® canisters in accordance with the WAP requirements.

During the evaluation of sampling activities, canister cleaning, leak-checking activities, and the implementation of chain-of-custody activities were also evaluated. Documentation specific to these activities (e.g., chain-of-custody forms, certification of cleanliness, and field logbooks) 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 WAP requirements.

The assessment of the sampling activities also included the review and observation of SRS processes for the collection of field reference standards and equipment blanks. These samples are collected in accordance with SP-SW-099, *Collecting Field Reference Standard and Equipment Blank Samples* and SP-SW-092, *Collecting Annual Field References Standard and Equipment Blank Samples.*

Sampling batch data reports were reviewed to determined that data associated with sampling activities were properly collected, documented, and validated and verified at the data generation level. The independent technical review, technical supervisor review, and data generation QA officer review were done in accordance with SW18-WP-AP-0014, *Data Generation Level Validation and Verification for Headspace Gas Sampling.*

Headspace gas analysis operations at SRS were observed, including the analysis of headspace gas samples collected in 6L Silco® canisters. The following sampling and analysis procedures were evaluated:

- SW15.7-SOP-HSGS-01, *Headspace Gas Sampling*
- SW18-WP-AP-0020, *Headspace Gas Analysis Batch Data Review Reference Tables*
- SW15.7-SOP-HSGA-01, *Headspace Gas Analysis Operations*
- SW15.7-INSP-PDP-02, *WIPP Disposal Program Headspace Gas Analysis Performance Demonstration Program (PDP)*
- SW18-WP-AP-0015, *Data Generation Level Validation and Verification for Headspace Gas Analysis*

Headspace gas analysis activities were audited by evaluating headspace gas analysis activities, interviewing personnel, conducting walk-throughs, and reviewing available headspace gas batch data reports. Analytical batch data reports 01-HSGA-020 and 01-HSGA-0224 were reviewed to evaluate analysis results in accordance with WAP requirements. Audited activities consisted of a walk-through of the processing of the headspace gas sample from the 6L Silco® into the GC/MS system.

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 quality assurance requirements specified in the WAP. Documentation reviewed is included in the batch data reports contained in Attachment 3.

Table B6-4 headspace gas checklist was completed by assessing the implementation of the sampling and analysis procedures. Analysis operations were observed and records from these activities were reviewed. Specific information regarding the observations conducted and the records reviewed is described 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*, SW15.7-SOP-HSGS-01, *Headspace Gas Sampling*, and SW15.7-SOP-CCCP-01, *Canister Cleaning and Certification*. SOP-CCCP-01 describes the requirements for the use of chain-of-custody forms. Copies of the chain-of-custody 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 quality assurance objectives (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*.

Headspace gas analysis batch data reports 01-HSGA-020 and 01-HSGA-024 were reviewed to ensure that both data generation level and project level validation and verification activities were properly performed.

The audit team recommended that data be submitted to the records center in a more timely manner (see Recommendation 2).

The audit team concluded that the SRS headspace gas sampling and analysis processes are adequate and satisfactorily implemented, and the processes are effective.

The SRS headspace gas processes have also been approved by NMED as part of CBFO Audit A-02-09, CCP at SRS.

5.2.5 Table B6-5 Radiography Checklist

This audit was performed to assess the ability of SRS to characterize Summary Category Group S5000 retrievably stored debris waste. SRS radiography operations are performed using a real-time system, which meets the system specifications identified in the WAP. SRS has controls to allow the operator to enhance the image quality of the radiograph, provide narration with the video, rotate the drum as it is imaged, enlarge the image, and pan up and down the container. These systems allow site personnel to view drums while recording the examination on an audio/video tape.

The Table B6-5, Radiography Checklist, was completed by assessing the following operating procedures:

- SW18-WP-AP-0017, *WIPP Disposal Program Data Generation Level Review for RTR/X-Ray.*
- SW15.7-SOP-RTR-01, *Real-Time Radiography (RTR)/X-Ray Operations.*

During audit team activities, RTR operations were observed, videotapes were reviewed, the RTR of drum number SR558360 was observed, and the documentation resulting from these activities was evaluated. Batch data reports 01-RTR-030, 01-RTR-031, and 01-RTR-028, were reviewed and are included in Attachment 3.

The batch data reports were reviewed to evaluate SRS's compliance with SW18-WP-AP-0017, *WIPP Disposal Program Data Generation Level Review for RTR/X-Ray.* This procedure controls the data generation level independent technical review, the technical supervisor review, and the QA officer review. The batch data report reviews conducted to the requirements of this procedure were found to be in compliance with the WAP requirements for data generation level review.

Training course materials and the RTR test drums (no specific drum numbers) were reviewed to ensure they are in accordance with WAP requirements.

Radiography equipment maintenance and daily checks were evaluated in accordance with WAP requirements and the RTR procedures and were concluded to be properly implemented. Radiographic results are being properly reported on standard forms and reviewed, as required by the WAP. Copies of the forms are included in the batch data reports in Attachment 3.

The audit team concluded that the SRS radiography processes are adequate and satisfactorily implemented, and the process is effective.

5.2.6 Table B6-6 Visual Examination Checklist

This audit was performed to assess the ability of SRS to characterize Summary Category Group S5000 retrievably stored debris waste streams. The SRS VE process was evaluated to determine the effectiveness of VE as a confirmation of the RTR process and as a characterization method that can be used in lieu of RTR. VE performed as a confirmation of RTR or in lieu of RTR is recorded on audio/video tape and the results are documented on standard forms in accordance with the following procedures:

- SW18-WP-AP-0016, *WIPP Disposal Program Data Generation Level Review for Visual Examination*
- SW15.7-SOP-TVEF-01, *TRU Visual Examination Facility (TVEF) Operations*
- SW15.7-SOP-CONT-01, *WIPP Waste Container Selection, Preparation, and Deficiency Operations*

SRS VE activities were evaluated by reviewing videotapes, evaluating VE batch data reports, and interviewing VE personnel. The audio/video tapes of the visual examination for drum numbers SR234842 and SR609628 were reviewed by the audit team. Batch data reports 01-VE-027 and 01-VE-018 were reviewed. These batch data reports are included in Attachment 3.

VE operations at the TRU Visual Examination Facility were evaluated in accordance with SW15.7-SOP-TVEF-01. Data generated from these VE activities are compiled and reviewed in accordance with SW18-WP-AP-0016. The batch data reports were reviewed to ensure that the information collected using the VE procedure meet the WAP requirements. In addition, the batch data reports were reviewed to verify that the independent technical review, the technical specialist review, and the QA officer review were conducted as defined in procedure SW18-WP-AP-0016. The procedures were found to be adequate in meeting WAP requirements.

The audit team evaluated SW15.7-SOP-CONT-01, which is used to randomly select drums to confirm radiography results. It was confirmed that the selection of the drums for VE was random and the drums were selected from the SRS available drum population in accordance with the WAP requirements.

The training course content for operators and VE experts was reviewed to verify that all WAP requirements were included. SRS VE training requirements are contained in SW15.7-SOP-TVEF-01. Training files were reviewed for VE experts and operators to verify that individuals responsible for performing the visual examination of drums have been properly trained and qualified.

The visual examination technique used to characterize waste at the time of packaging or re-packaging is currently not being employed by SRS. This technique was not audited. Waste requiring characterization using the VE technique will not 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.

The audit team concluded that the SRS VE processes are adequate, satisfactorily implemented, and the VE process is effective.

The SRS visual examination processes have also been approved by NMED as part of CBFO Audit A-02-09, CCP at SRS.

5.4 General

Results of Previous Audits

The Observations and CARs resulting from the initial HWFP audit (A-01-01) were examined to determine if the conditions had been corrected. There were no recurring WAP related deficiencies identified.

Changes in Programs or Operations

The HWFP portions of the audit were performed to the latest B6 checklists, which incorporate all the Class 1 and Class 2 modifications to the HWFP.

New Programs or Activities Being Implemented

There were no new HWFP programs or activities implemented at the time of the audit.

Changes in Key Personnel

None of the key personnel have changed since the initial HEFP audit (A-01-01). During the year, additional personnel have been qualified as alternates for many of the key positions. This will provide SRS more flexibility.

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 on 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 Quality Assurance (QA) program.

Two WAP related CARs (described below) were initiated during the audit. Those conditions adverse to quality have been corrected by SRS (see Attachment 2).

6.1.1 CBFO CAR 02-029

The AK Accuracy Report was compiled from data generated at the project level, which assured 100% accuracy. The process needed to be revised to reflect the true accuracy of the confirmation process.

Drums that have contents that do not confirm to the WMC Description were not flagged as an AK accuracy issue.

Revisions IPC-2, SW18-WP-AP-002, *WIPP Disposal Program Acceptable Knowledge* and IPC-4, SW15.7-SOP-RTR-01, *Real Time Radiography (RTR)/X-Ray Operations*, were issued to describe the proper compilation of the Accuracy Report. Training was held on the revisions to the procedure.

Problem Identification Report 2002-PIR-26-0003 was issued and all of the drums in batch data reports 01-RTR-028 through 036, 02-RTR-001 and 002 were reviewed to determine if any containers need to be flagged for AK purposes. A Container Deficiency Form was issued for those containers where the container-specific waste matrix code did not match the waste stream collective waste matrix code.

6.1.2 CBFO CAR 02-030

There were discrepancies in the AK record for the 027 waste stream that required resolution, for example, the AK Summary documents prepared by SRS and CCP.

The SRS Acceptable Knowledge Summary Report, WSRC-TR-2001-00527 was superceded by CCP-AK-SRS-1, Rev. 6, March 14, 2002, *Central Characterization Project Acceptable Knowledge Summary Report for Savannah River Site Waste*

Stream: SRW027-221F-HET-A, -HET-C-D and –HET-E. Training was held on the revised report.

6.2 Deficiencies Corrected During the Audit

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

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 corrected during audit (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.

CDAs – Isolated deficiencies that do 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.

There were no WAP-related CDAs as a result of 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 ATL, evaluates these conditions and classifies them as Observations or Recommendations using the following definitions:

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

Recommendations – Suggestions that are directed toward identifying opportunities for improvement and enhancing methods of implementing requirements.

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

7.1 Observations

The following Observations were provided to SRS management.

Observation 1

Section 6.2 of the AK procedure describes an AK confirmation process, but does not specify the responsible individual(s).

Observation 2

All AK source documents need to be included in the QA records system. The TRU Waste Package Data Forms are not in the AK records.

7.2 Recommendations

The WAP-related Recommendations provided to SRS management during the audit are discussed below:

Recommendation 1

It is recommended that the detailed process descriptions in Section 4.2 of the AK Summary document provide reference documentation.

Recommendation 2

Backup data to support qualification of new or repaired sample canisters/sampling assemblies was not submitted to records at the time the memorandum documenting certification of the sample canisters/sample assemblies was submitted to records. The backup data was submitted during the audit.

It is recommended that the data be submitted with the memorandum and not be kept by the lead chemist awaiting preparation of a formal SRS technical report.

8.0 LIST OF ATTACHMENTS

Attachment 1:	Personnel Contacted During the Audit and the List of Procedures Audited
Attachment 2:	Corrective Action Supporting Documentation
Attachment 3:	Objective Evidence
Attachment 4:	Audited SRS Implementing Procedures Listing

PERSONNEL CONTACTED DURING THE AUDIT

SRS PERSONNEL CONTACTED DURING AUDIT A-02-06				
NAME	**TITLE/ORG**	**PRE-AUDIT MEETING**	**CONTACTED DURING AUDIT**	**POST-AUDIT MEETING**
Allen, Chris L.	WSRC, NDE Specialist		X	
Aurah, Mirwaise Y.	PE&CD/P&CT, Manager Solid Waste Process Control		X	
Baker, Timothy L.	RCS, RCO		X	
Blair, David	WSRC, Chemist		X	
Brown, Kenny L.	WGI/NDE-RTR, RTR INSP		X	
Burns, Ron	WTS, Observer		X	X
Chambers, Tony C.	WSRC/Rigging, Rigger		X	
Clarke, Pat	WSRC Systems Engineer	X		X
Clary, Melissa	SWE, CTF-Visual Exam		X	
Coleman, Hilda	SE/PECP, Engineer	X	X	X
Collins, Susan	WSRC/EES, Sr. Engineer		X	
Conrad, M. F. 'Dutch'	Facility Manager, SWO	X		X
Crow, George L.	WSRC, NDE Specialist		X	
Culligan, Brian K.	WSRC, Chemist		X	
D'Amelio, Joe	WSRC/SWD, Site Project Manager	X	X	X
Devare, Chris	WSRC/Rigging, Rigger		X	
Dicks, Deneen	PE&CD/P&CT, Technical Support		X	
Drake, Lynne S	WSRC/QSD/PQA, Sr. QA Engineer	X	X	
Ergle, Ronald K.	WSRC/SWO, Operator		X	
Fox, F. Lee	SWE, TRU Engineering Manager			X
Geary, L. C.	WSRC P&CT/SPS Technical Advisor		X	
Gibbs, Ann	WSRC/SWD, Sr. Fellow		X	X
Givens Jr., Charlie	PE&CD/P&CT, Database Engineering Lead		X	
Gregg, Gleason	SWD, QA CQF	X	X	
Griffin, Pamela	SWE, CTF AK and NDA	X	X	X

SRS PERSONNEL CONTACTED DURING AUDIT A-02-06				
NAME	**TITLE/ORG**	**PRE-AUDIT MEETING**	**CONTACTED DURING AUDIT**	**POST-AUDIT MEETING**
Henderson, Helen	SWD, Admin Advisor	X		X
Hunt, Paul	SWD Deputy Ops. Manager	X		
Ingram, Demetrie	RCS, RCO		X	
Jackson, Glen	WSRC-SWE, CTF-Gas Sampling		X	
Johnson, William	WSRC/SWD/WIPP, Technical Support		X	
Kienzle, Stephen	SWD Training, Training Specialist		X	X
Kokovich, Mark	SPM/TRU Ops. Manager	X	X	X
Lane, Huey	BNFL, SWT&P		X	
Leschak, William	BNFL/SWQA, SPQAO	X	X	
Lunsford, G. F.	WSRC/SWE, AK CTF/WCO	X	X	X
Maier, Jim	WSRC/SWS, Technical Advisor		X	
Mason, Mike J.	Site Project QA Manager	X	X	X
Mason, Owen	WSRC/AL, Technical Specialist		X	
McLane, Terry	WSRC, Strategic Sourcing		X	
Melton, Jessie	WSRC, Chemist		X	X
Mentrup, Steve J.	SWE, TRU Technical Advisor		X	
Morgan, Richard L.	WGI/NDE-RTR, RTR Supervisor		X	
Ormond, Dale	DOE-SR Senior TRU Program Manager	X		X
Patel, Babu	BNFL, WIPP Support	X		X
Phillips, Jeannie	Division Records Office		X	X
Pitts, Mike	NDA, SWE	X	X	X
Rapp, Michael. E.	SWFS R/HAE, Crane Operator		X	
Redmore, Robert S.	RCS, RCO		X	
Riddle, Joe	PE&CD/P&CT, Manager Systems Security &	X	X	

SRS PERSONNEL CONTACTED DURING AUDIT A-02-06				
NAME	**TITLE/ORG**	**PRE-AUDIT MEETING**	**CONTACTED DURING AUDIT**	**POST-AUDIT MEETING**
	Process			
Rovansew, John C.	**BNFL, QE**		**X**	
Sessions, Tommy	**WSRC/EES, Sr. Engineer**		**X**	
Swale, Dave	**BNFL, SWD Ops. Manager**	**X**		**X**
Vinson, Mary	**Facility Manager, RCO**	**X**		
Wilson, Leah	**Lead Ops Specialist/Shift Manager, SWO**	**X**	**X**	**X**
Wolfe, David J.	**SWT&P, Procedure Coordinator**		**X**	
Wooldridge, F. D.	**SWO Ops. Support, Supervisor**		**X**	
Zimmerman, Gary	**SWD Training, Training Specialist**		**X**	

Personnel Contacted During the Audit by Area

Nonconformances	Gleason Gregg
Training	Gary C. Zimmerman Stephen Kienzle
Records	Jeannie Phillips Glen L. Jackson
Acceptable Knowledge	J. A. D'Amelio Ann Gibbs G. F. Lunsford P. H. Griffin Jeannie Phillips
Headspace Gas & Gas VOCs Sampling and Analysis	R. K. Ergle David Blair Jessie L. Melton B. K. Culligan Owen Mason Tommy Sessions Susan Collins
Real-Time Radiography	Glen L. Jackson Rick L. Morgan Kenneth L. Brown
Visual Examination	Melissa Clary
WIPP Waste Information System (WWIS Data Entry)	Bill Johnson
Waste Certification/Project Level & Data Generation Level Data Validation & Verification	Jim Maier Jeannie Phillips

SRS IMPLEMENTING PROCEDURES LISTING	
WSRC-RP-99-01097	"Savannah River Site WIPP Disposal Program Quality Assurance Project Plan"
WSRC-RP-99-01119	"Savannah River Site WIPP Disposal Program Quality Assurance Program Document"
SP-SW-099	Collecting Field Reference Standard and Equipment Blank Samples
SP-SW-095	Headspace Gas Sampling of Empty Drums
SP-SW-092	Collecting Annual Field References Standard and Equipment Blank Samples
SW18-WP-AP-0020	Headspace Gas Analysis Batch Data Review Reference Tables
SW18-WP-AP-0017	WIPP Disposal Program Data Generation Level Review for RTR/X-Ray
SW18-WP-AP-0016	WIPP Disposal Program Data Generation Level Review for Visual Examination
SW18-WP-AP-0015	Data Generation Level Validation and Verification for Headspace Gas Analysis
SW18-WP-AP-0014	Data Generation Level Validation and Verification for Headspace Gas Sampling
SW18-WP-AP-0013	Headspace Gas Analysis Journal
SW18-WP-AP-0012	TRUPACT II Transportation Arrangements
SW18-WP-AP-0011	QC/Measurement Control: HGAS Laboratory
SW18-WP-AP-0010	WIPP Disposal Program Waste Stream Profile Form Preparation and Reconciliation with Data Quality Objectives
SW18-WP-AP-0009	WIPP Disposal Program Waste Stream Determination and Reporting
SW18-WP-AP-0008	WIPP Disposal Program Waste Certification Statement Preparation
SW18-WP-AP-0003	WIPP Disposal Program Project Level Validation and Verification
SW18-WP-AP-0002	WIPP Disposal Program Acceptable Knowledge
SW15.7-SOP-CONT-01	WIPP Waste Container Selection, Preparation, and Deficiency Operations
SW15.7-SOP HSGS-01	Headspace Gas Sampling
SW15.7-SOP HSGA-01	Headspace Gas Analysis Operations
SW15.7-SOP HSDR-01	Headspace Gas Analysis Data Review
SW15.7-INSP-HSG-01	Gas Analysis Systems Inspection
SW5.7-INSP-PDP-02	WIPP Disposal Program Headspace Gas Analysis Performance Demonstration Program (PDP)
SW15.7-IMP-HSGAR-01	WIPP Disposal Program Gas Analysis Rounds
SW15.7-SOP-CCCP-01	Canister Cleaning and Certification
SW15.7-SOP-HGEC-01	Headspace Gas Equipment Certification
SW15.7-SOP-WWIS-01	Waste to WIPP Information System (WWIS) Data Entry Operations
SW15.7-SOP-RTR-01	Real Time Radiography (RTR)/X-Ray Operations
SW15.7-SOP-TVEF-01	TVEF Operations
SW15.7-SOP-PYLD-01	TRUPACT-II Payload Package Creation
SW15.7-INSP-NDE-01	Non-Destructive Examination Test Drum Assembly
SW15.7-INSP-NDE-02	WIPP Disposal Program Radiography Test Drum Observation
1Q, QAP 1-2	Stop Work
1Q, QAP 2-2	Personnel Training and Qualification
1Q, QAP 15-1	Control of Nonconforming Items
WSRC 1B, MRP 4.21	Problem Identification and Resolution Process
1Q, QAP 17-1	Quality Assurance Records

SW-QI-1171	Records Management
SWD-SWT-98-0056	SRS WIPP Disposal Program Operations Training Program Description
SWD-SWT-98-0058	SRS WIPP Disposal Program Technical and Support Staff Training Program Description
SW18-WP-AP-0007	WIPP Records Management
WSRC 1B, Procedure 3.31	Records Management