ENTERED

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

AUG - 8 2012

Mr. John E. Kieling, Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303

Subject: Review of Savannah River Site - Central Characterization Project Waste Stream Profile Form Number SR-W027-773A-HET, Revision 1

Dear Mr. Kieling:

The Department of Energy, Carlsbad Field Office has approved the Waste Stream Profile Form (WSPF) Number SR-W027-773A-HET, Revision 1, *Heterogeneous Debris from 773A,* for the Central Characterization Project at the Savannah River Site.

The WSPF was originally approved on March 10, 2005. This WSPF was revised in accordance with criteria developed to comply with the Permit Attachment C, Section C-1d. This WSPF was revised to address the addition of the Standard Large Box 2 (SLB2) payload container and associated TRUPACT-III Content Code Number SR 425 to waste stream SR-W027-773A-HET. The hazardous waste number assignment was not changed.

Enclosed is a copy of the WSPF as required by Section C-5a of the Waste Isolation Pilot Plant, Hazardous Waste Facility Permit, No. NM4890139088-TSDF.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to 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 fine and imprisonment for knowing violations.

If you have questions, please contact Mr. J. R. Stroble, Director of the Office of the National TRU Program, at (575) 234-7313.

Sincerely,

Jose R. Franco, Manager
Carlsbad Field Office

Enclosure

cc: w/enclosure
S. Holmes, NMED *ED
T. Kliphuis, NMED ED
RCRA Chronology Record ED
WIPP Operating Record ED
CBFO M&RC
*ED denotes electronic distribution

120808

CBFO:NTP:NC:GL:12-0577:UFC 5900.00

Attachment 2 – CCP Waste Stream Profile Form

(1) Waste Stream Profile Number: SR-W027-773A-HET, Rev. 1							
(2) Generator site name: Savannah River Site						(3) Generator site EPA ID: SC1890008989	
(4) Technical contact: Beverly Schrock						(5) Technical contact phone number: 575-234-7444	
(6) Date of audit report approval by New Mexico Environment Department (NMED): May 23, 2012							
(7) Title, version number, and date of documents used for WIPP-WAP Certification: CCP-PO-001, CCP Transuranic Waste Characterization Quality Assurance Project Plan, Revision 20, June 16, 2011; CCP-PO-002, CCP Transuranic Waste Certification Plan, Revision 26, July 14, 2011; CCP-PO-004, CCP/SRS Interface Document, Revision 30, October 17, 2011							
(8) Did your facility generate this waste?	YES	X	NO				
(9) If no, provide the name and EPA ID of the original generator: NA							
Waste Stream Information							
(10) WIPP ID: SR-W027-773A-HET						(11) Summary Category Group: S5000	
(12) Waste Matrix Code Group: Heterogeneous Debris Waste						(13) Waste Stream Name: Heterogeneous Debris from 773A	
(14) Description from the ATWIR: This waste stream is defense related contact handled mixed TRU waste. This waste stream is primarily solids consisting of booties, lab coats, floor sweeping, labware, rags, other job control waste, small HEPAs liquids, sludges and resins may also be found in this waste.							
(15) Defense TRU Waste:	YES	X	NO				
(16) Check One:	CH	X	RH				
(17) Number of SWBs[2]: 32 (17a) Number of SLB2: 10	(18) Number of Drums[3]: 1,651 55-gallon drums Projected: 33 55-gallon drums/year					(19) Number of Canisters NA	
(20) Batch Data Report numbers supporting this waste stream characterization: See Characterization Information Summary (CIS) Correlation of Container Identification Numbers to Batch Data Report Numbers							
(21) List applicable EPA Hazardous Waste Numbers:[1] D004, D005, D006, D007, D008, D009, D010, D011, D019, D022, D027, D028, D029, D043, F002, F003, F004 and F005							
(22) Applicable TRUCON Content Numbers: SR 125/225, SQ 154, SR 425							
(23)**Acceptable Knowledge Information**							
(For the following, enter the supporting documentation used [i.e., references and dates])							
Required Program Information							
(23A) Map of site: CCP-AK-SRS-7, Revision 5, August 12, 2011, Figures 1 and 2.							
(23B) Facility mission description: CCP-AK-SRS-7, Revision 5, August 12, 2011, Section 4.2.							
(23C) Description of operations that generate waste: CCP-AK-SRS-7, Revision 5, August 12, 2011, Section 4.3.							
(23D) Waste identification/categorization schemes: CCP-AK-SRS-7, Revision 5, August 12, 2011, Section 4.5.							
(23E) Types and quantities of waste generated: CCP-AK-SRS-7, Revision 5, August 12, 2011, Section 4.4.1.							
(23F) Correlation of waste streams generated from the same building and process, as applicable: CCP-AK-SRS-7, Revision 5, August 12, 2011, Section 4.4.2.							
(24) Waste certification procedures: CCP-TP-030, Revision 30, May 21, 2012							

(25)Required Waste Stream Information			
(25A) Area(s) and building(s) from which the waste stream was generated: CCP-AK-SRS-7, Revision 5, August 12, 2011, Section 5.1.			
(25B) Waste stream volume and time period of generation: CCP-AK-SRS-7, Revision 5, August 12, 2011, Section 5.2.			
(25C) Waste generating process description for each building: CCP-AK-SRS-7, Revision 5, August 12, 2011, Section 5.3.			
(25D) Waste Process flow diagrams: NA			
(25E) Material inputs or other information identifying chemical/radionuclide content and physical waste form: CCP-AK-SRS-7, Revision 5, August 12, 2011, Section 5.4.			
(25F) Waste Material Parameter Weight Estimates Per Unit of Waste: See Table entitled "Waste Stream SR-W027-773A-HET Waste Material Parameters" in Summation of Aspects of AK Summary Report: SR-W027-773A-HET.			
(26) Which Defense Activity generated the waste:			
	Weapons activities including defense inertial confinement fusion		Naval Reactors development
	Verification and control technology	X	Defense research and development
	Defense nuclear waste and material by products management		Defense nuclear material production
	Defense nuclear waste and materials security and safeguards and security investigations		
(27)Supplemental Documentation:			
(27A) Process design documents: See D089 in Summation of Aspects of AK Summary Report: Waste Stream SR-W027-773A-HET, Source Documents			
(27B) Standard operating procedures: See D007, P001, P003, P004, P005, P006, P007, P008, P009, P010, P011, P012, P013, P014, P016, P017, P018, P019, P020, P021, P022, P023, P024, P025, P026, P027, P028, P029, P030, P031, P032, P033, P034, P035, P036, P037, P038, P039, P040, P041, P042, P043, P046, P047, P048, P049 and P050 in Summation of Aspects of AK Summary Report: Waste Stream SR-W027-773A-HET, Source Documents			
(27C) Safety Analysis Reports: See D002, D019, D037, D120, D141, D142 and D144 in Summation of Aspects of AK Summary Report: Waste Stream SR-W027-773A-HET, Source Documents			
(27D) Waste packaging logs: See M001 and M002 in Summation of Aspects of AK Summary Report: Waste Stream SR-W027-773A-HET, Source Documents			
(27E) Test plans/research project reports: See C065, C066, C068, C069, C070, D004, D011, D018, D039, D040, D041, D042, D043, D044, D045, D046, D047, D048, D049, D050, D051, D052, D053, D054, D055, D056, D057, D058, D059, D060, D061, D062, D063, D064, D065, D066, D067, D068, D069, D070, D071, D072, D073, D074, D075, D076, D077, D078, D079, D080, D081, D082, D083, D084, D085, D087, D093, D094, D095, D096, D097, D098, D099, D100, D101, D103, D104, D107, D109, D111, D112, D114, D117, D118, D125, D126, D134, D135, D136, D138, D139, D143, D146, D147, D149, D150 and D151 in Summation of Aspects of AK Summary Report: Waste Stream SR-W027-773A-HET, Source Documents			
(27F) Site databases: See D152, M003, M014, M015 and M016 in Summation of Aspects of AK Summary Report: Waste Stream SR-W027-773A-HET, Source Documents			
(27G) Information from site personnel: See C040, C046, C052, C053, C054, C055, C056, C057, C058, C059, C060, C061 and C071 in Summation of Aspects of AK Summary Report: Waste Stream SR-W027-773A-HET, Source Documents			
(27H) Standard industry documents: See D006 and M038 in Summation of Aspects of AK Summary Report: Waste Stream SR-W027-773A-HET, Source Documents			
(27I) Previous analytical data: See C018, C031, C038, D031, D047, D051 and M007 in Summation of Aspects of AK Summary Report: Waste Stream SR-W027-773A-HET, Source Documents			

Attachment 2 – CCP Waste Stream Profile Form

(27J) Material safety data sheets: See M026 and M041 in Summation of Aspects of AK Summary Report: Waste Stream SR-W027-773A-HET, Source Documents	
(27K) Sampling and analysis data from comparable/surrogate Waste: NA	
(27L) Laboratory notebooks: See M007 in Summation of Aspects of AK Summary Report: Waste Stream SR-W027-773A-HET, Source Documents	
Confirmation Information	
For the following, when applicable, enter procedure title(s), number(s) and date(s)	
(28)	Radiography: CCP-TP-053, Revision 11, July 20, 2011
(29) Comments: For a list of the waste characterization procedures used and date of respective procedures see the list of procedures on the attached CIS.	

Reviewed by AK Expert: YES [X] Date: 6/15/2012

Reviewed by STR (if necessary): YES [X] N/A [ ] Date: 6/19/2012

Waste Stream Profile Form Certification:

I hereby certify that I have reviewed the information in this Waste Stream Profile Form, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

BSSchrock	Beverly Schrock	7/13/12
Signature of Site Project Manager	Printed Name	Date

NOTE: (1) If, radiography, visual examination were used to confirm EPA Hazardous Waste Numbers, attach signed Characterization Information Summary documenting this determination Use back of sheet or continuation sheets, if required.

(2) There are an additional 8 other non-payload containers that will either be repackaged into 8 SWBs or 2 SLB2s. These other containers were conservatively presented as an additional 8 SWBs.

(3) Also included in this waste stream are 13 concrete boxes, 15 steel boxes, four fiberglass boxes, one plywood box, two concrete casks and one other container for a total volume of 499 cubic meters.

CHARACTERIZATION INFORMATION SUMMARY

WSPF #: SR-W027-773A-HET Rev. 1

Lot #: 70

TABLE OF CONTENTS

CCP Characterization Information Summary Cover Page

Waste Stream # SR-W027-773A-HET Lot #: 70

AK Expert Review: N/A Date: N/A

SPM Review: Joshua Houghton Date: 7/17/2012

SPM signature certifies that through Acceptable Knowledge testing and/or analysis that the waste identified in this summary is not corrosive, ignitable, reactive, or incompatible with the TSDF.

A summary of the Acceptable Knowledge regarding this waste stream containing specific information about the corrosivity, reactivity, and ignitability of the waste stream is included as an attachment to the Waste Stream Profile Form. By reference, that information is included in this lot.

List of procedures used:

Radiography (RTR/NDE):

CCP-TP-011	Rev. 12	10/18/01	CCP Radiography Inspection Operating Procedure
CCP-TP-011	Rev. 13	05/16/02	CCP Radiography Inspection Operating Procedure
CCP-TP-011	Rev. 14	07/31/03	CCP Radiography Inspection Operating Procedure
CCP-TP-011	Rev. 15	03/08/04	CCP Radiography Inspection Operating Procedure
CCP-TP-011	Rev. 16	05/02/05	CCP Radiography Inspection Operating Procedure
CCP-TP-011	Rev. 17	11/16/06	CCP Radiography Inspection Operating Procedure
CCP-TP-053	Rev. 6	03/04/08	CCP Standard Real-Time Radiography (RTR) Inspection Procedure
CCP-TP-053	Rev. 7	10/21/09	CCP Standard Real-Time Radiography (RTR) Inspection Procedure
CCP-TP-053	Rev. 8	06/29/10	CCP Standard Real-Time Radiography (RTR) Inspection Procedure
CCP-TP-053	Rev. 9	09/30/10	CCP Standard Real-Time Radiography (RTR) Inspection Procedure
CCP-TP-053	Rev. 10	03/04/11	CCP Standard Real-Time Radiography (RTR) Inspection Procedure
CCP-TP-053	Rev. 11	07/20/11	CCP Standard Real-Time Radiography (RTR) Inspection Procedure
CCP-TP-136	Rev. 0	09/20/04	CCP Standardized Prohibited Item Remediation
CCP-TP-136	Rev. 1	01/13/05	CCP Standardized Prohibited Item Remediation
CCP-TP-136	Rev. 2	05/04/07	CCP Standardized Prohibited Item Remediation

Headspace Gas Sampling and Analysis (HSG):

CCP-TP-007	Rev. 19	03/01/04	CCP Single Sample Manifold Headspace Gas Sampling and Analysis Procedure
CCP-TP-007	Rev. 20	10/19/04	CCP Single Sample Manifold Headspace Gas Sampling and Analysis Procedure
CCP-TP-007	Rev. 21	03/11/05	CCP Single Sample Manifold Headspace Gas Sampling and Analysis Procedure
CCP-TP-007	Rev. 22	11/16/06	CCP Single Sample Manifold Headspace Gas Sampling and Analysis Procedure
CCP-TP-009	Rev. 13	10/31/03	CCP Single Sample Manifold Data Handling Procedure
CCP-TP-009	Rev. 14	10/21/04	CCP Single Sample Manifold Data Handling Procedure
CCP-TP-009	Rev. 15	11/16/06	CCP Single Sample Manifold Data Handling Procedure
CCP-TP-029	Rev. 13	06/22/04	CCP Single Sample Manifold Headspace Gas Sampling and Analysis Methods and Equipment Calibration
CCP-TP-029	Rev. 14	10/21/04	CCP Single Sample Manifold Headspace Gas Sampling and Analysis Methods and Equipment Calibration
CCP-TP-029	Rev. 15	04/25/05	CCP Single Sample Manifold Headspace Gas Sampling and Analysis Methods and Equipment Calibration
CCP-TP-029	Rev. 16	11/16/06	CCP Single Sample Manifold Headspace Gas Sampling and Analysis Methods and Equipment Calibration
CCP-TP-032	Rev. 11	12/03/03	CCP Single Sample Manifold Data Validation Procedure
CCP-TP-032	Rev. 12	05/23/06	CCP Single Sample Manifold Data Validation Procedure
CCP-TP-032	Rev. 13	05/25/06	CCP Single Sample Manifold Data Validation Procedure
CCP-TP-032	Rev. 14	11/16/06	CCP Single Sample Manifold Data Validation Procedure
CCP-TP-093	Rev. 0	10/02/03	CCP Sampling of TRU Waste Containers
CCP-TP-093	Rev. 1	12/05/03	CCP Sampling of TRU Waste Containers
CCP-TP-093	Rev. 2	03/19/04	CCP Sampling of TRU Waste Containers
CCP-TP-093	Rev. 3	02/26/05	CCP Sampling of TRU Waste Containers
CCP-TP-093	Rev. 4	03/11/05	CCP Sampling of TRU Waste Containers
CCP-TP-093	Rev. 5	03/22/05	CCP Sampling of TRU Waste Containers
CCP-TP-093	Rev. 6	04/15/05	CCP Sampling of TRU Waste Containers
CCP-TP-093	Rev. 7	06/29/05	CCP Sampling of TRU Waste Containers
CCP-TP-093	Rev. 8	12/22/05	CCP Sampling of TRU Waste Containers
CCP-TP-093	Rev. 9	08/21/06	CCP Sampling of TRU Waste Containers
CCP-TP-093	Rev. 10	09/11/06	CCP Sampling of TRU Waste Containers
CCP-TP-093	Rev. 11	11/16/06	CCP Sampling of TRU Waste Containers
CCP-TP-093	Rev. 12	02/12/07	CCP Sampling of TRU Waste Containers
CCP-TP-093	Rev. 13	03/19/07	CCP Sampling of TRU Waste Containers
CCP-TP-093	Rev. 14	12/29/10	CCP Sampling of TRU Waste Containers
CCP-TP-093	Rev. 15	03/10/11	CCP Sampling of TRU Waste Containers
CCP-TP-093	Rev. 16	09/07/11	CCP Sampling of TRU Waste Containers
CCP-TP-106	Rev. 0	12/08/03	CCP Headspace Gas Sampling Batch Data Report Preparation
CCP-TP-106	Rev. 1	03/31/04	CCP Headspace Gas Sampling Batch Data Report Preparation
CCP-TP-106	Rev. 2	03/03/05	CCP Headspace Gas Sampling Batch Data Report Preparation
CCP-TP-106	Rev. 3	04/15/05	CCP Headspace Gas Sampling Batch Data Report Preparation
CCP-TP-106	Rev. 4	08/21/06	CCP Headspace Gas Sampling Batch Data Report Preparation
CCP-TP-106	Rev. 5	11/16/06	CCP Headspace Gas Sampling Batch Data Report Preparation
CCP-TP-106	Rev. 6	07/12/07	CCP Headspace Gas Sampling Batch Data Report Preparation
CCP-TP-106	Rev. 7	12/29/10	CCP Headspace Gas Sampling Batch Data Report Preparation
CCP-TP-175	Rev. 0	05/12/07	CCP Analysis of Gas Samples for VOCs by GC/MS
CCP-TP-175	Rev. 1	03/29/10	CCP Analysis of Gas Samples for VOCs by GC/MS
CCP-TP-175	Rev. 2	12/29/10	CCP Analysis of Gas Samples for VOCs by GC/MS
CCP-TP-175	Rev. 3	08/02/11	CCP Analysis of Gas Samples for VOCs by GC/MS

Visual Examination (VE):

SW15.7-SOP-TVEF-01	Rev. 01	09/30/02	TVEF Operations
SW15.7-SOP-Weigh-01	Rev. 01	06/04/01	
CCP-TP-113	Rev. 3	01/25/05	CCP Standard Waste Visual Examination
CCP-TP-113	Rev. 4	12/22/05	CCP Standard Waste Visual Examination
CCP-TP-113	Rev. 5	08/28/06	CCP Standard Waste Visual Examination

CCP-TP-113	Rev. 6	11/16/06	CCP Standard Waste Visual Examination
CCP-TP-113	Rev. 7	03/19/07	CCP Standard Waste Visual Examination
CCP-TP-113	Rev. 8	09/04/07	CCP Standard Waste Visual Examination
CCP-TP-113	Rev. 9	03/05/08	CCP Standard Waste Visual Examination
CCP-TP-113	Rev. 10	07/09/08	CCP Standard Waste Visual Examination
CCP-TP-113	Rev. 11	11/12/08	CCP Standard Waste Visual Examination
CCP-TP-113	Rev. 12	12/01/08	CCP Standard Waste Visual Examination
CCP-TP-113	Rev. 13	03/11/09	CCP Standard Waste Visual Examination
CCP-TP-113	Rev. 14	06/29/10	CCP Standard Waste Visual Examination
CCP-TP-113	Rev. 15	12/29/10	CCP Standard Waste Visual Examination
CCP-TP-113	Rev. 16	04/25/11	CCP Standard Waste Visual Examination
CCP-TP-085	Rev. 0	08/13/03	CCP TRU Visual Examination Facility Operations
CCP-TP-085	Rev. 1	10/17/03	CCP TRU Visual Examination Facility Operations
CCP-TP-087	Rev. 0	07/15/03	CCP Scale Operations
CCP-TP-087	Rev. 1	12/14/05	CCP Scale Operations
CCP-TP-087	Rev. 2	05/02/06	CCP Scale Operations
CCP-TP-087	Rev. 3	06/19/06	CCP Scale Operations
CCP-TP-087	Rev. 4	11/16/06	CCP Scale Operations
CCP-TP-087	Rev. 5	03/13/07	CCP Scale Operations
CCP-TP-088	Rev. 0	07/16/03	CCP Program Data Generation Level Review for VE
CCP-TP-088	Rev. 1	10/20/03	CCP Program Data Generation Level Review for VE

Data Generation Review (SRS):

WP-AP-0016		02/15/01	WIPP Disposal Program Data Generation Level Review for Visual Examination

Project Level Data Validation / DQO Reconciliation:

CCP-TP-001	Rev. 6	05/15/02	CCP Project Level Data Validation and Verification
CCP-TP-001	Rev. 7	01/13/03	CCP Project Level Data Validation and Verification
CCP-TP-001	Rev. 8	02/03/03	CCP Project Level Data Validation and Verification
CCP-TP-001	Rev. 9	07/10/03	CCP Project Level Data Validation and Verification
CCP-TP-001	Rev. 10	08/28/03	CCP Project Level Data Validation and Verification
CCP-TP-001	Rev. 11	03/23/05	CCP Project Level Data Validation and Verification
CCP-TP-001	Rev. 12	05/25/06	CCP Project Level Data Validation and Verification
CCP-TP-001	Rev. 13	07/21/06	CCP Project Level Data Validation and Verification
CCP-TP-001	Rev. 14	11/16/06	CCP Project Level Data Validation and Verification
CCP-TP-001	Rev. 15	11/22/06	CCP Project Level Data Validation and Verification
CCP-TP-001	Rev. 16	04/26/07	CCP Project Level Data Validation and Verification
CCP-TP-001	Rev. 17	09/24/07	CCP Project Level Data Validation and Verification
CCP-TP-001	Rev. 18	08/09/10	CCP Project Level Data Validation and Verification
CCP-TP-001	Rev. 19	12/29/10	CCP Project Level Data Validation and Verification
CCP-TP-002	Rev. 8	03/07/02	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-002	Rev. 9	06/06/02	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-002	Rev. 10	06/19/02	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-002	Rev. 11	10/24/02	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-002	Rev. 12	04/30/03	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-002	Rev. 13	06/27/03	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-002	Rev. 14	03/29/05	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-002	Rev. 15	08/16/05	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-002	Rev. 16	06/06/06	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-002	Rev. 17	10/10/06	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-002	Rev. 18	11/16/06	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-002	Rev. 19	12/22/06	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-002	Rev. 20	08/18/08	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-002	Rev. 21	08/04/09	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-002	Rev. 22	06/25/10	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-002	Rev. 23	12/29/10	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-002	Rev. 24	12/28/11	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-003	Rev. 5	03/18/02	CCP Sampling Design and Data Analysis for RCRA Characterization
CCP-TP-003	Rev. 6	03/20/02	CCP Sampling Design and Data Analysis for RCRA Characterization
CCP-TP-003	Rev. 7	06/03/02	CCP Sampling Design and Data Analysis for RCRA Characterization
CCP-TP-003	Rev. 8	08/23/02	CCP Sampling Design and Data Analysis for RCRA Characterization
CCP-TP-003	Rev. 9	10/10/02	CCP Sampling Design and Data Analysis for RCRA Characterization
CCP-TP-003	Rev. 10	12/04/02	CCP Sampling Design and Data Analysis for RCRA Characterization
CCP-TP-003	Rev. 11	01/20/03	CCP Sampling Design and Data Analysis for RCRA Characterization
CCP-TP-003	Rev. 12	01/25/03	CCP Sampling Design and Data Analysis for RCRA Characterization
CCP-TP-003	Rev. 13	06/28/03	CCP Sampling Design and Data Analysis for RCRA Characterization
CCP-TP-003	Rev. 14	09/03/03	CCP Sampling Design and Data Analysis for RCRA Characterization
CCP-TP-003	Rev. 15	11/16/06	CCP Data Analysis for S3000, S4000, and S5000 Characterization
CCP-TP-003	Rev. 16	10/02/07	CCP Data Analysis for S3000, S4000, and S5000 Characterization
CCP-TP-003	Rev. 17	11/09/09	CCP Data Analysis for S3000, S4000, and S5000 Characterization
CCP-TP-003	Rev. 18	12/29/10	CCP Data Analysis for S3000, S4000, and S5000 Characterization
CCP-TP-005	Rev. 8	09/19/02	CCP Acceptable Knowledge Documentation
CCP-TP-005	Rev. 9	09/26/02	CCP Acceptable Knowledge Documentation
CCP-TP-005	Rev. 10	10/24/02	CCP Acceptable Knowledge Documentation
CCP-TP-005	Rev. 11	02/05/03	CCP Acceptable Knowledge Documentation
CCP-TP-005	Rev. 12	03/26/03	CCP Acceptable Knowledge Documentation
CCP-TP-005	Rev. 13	11/18/03	CCP Acceptable Knowledge Documentation
CCP-TP-005	Rev. 14	11/19/04	CCP Acceptable Knowledge Documentation
CCP-TP-005	Rev. 15	03/31/05	CCP Acceptable Knowledge Documentation
CCP-TP-005	Rev. 16	02/27/06	CCP Acceptable Knowledge Documentation
CCP-TP-005	Rev. 17	05/06/06	CCP Acceptable Knowledge Documentation
CCP-TP-005	Rev. 18	11/16/06	CCP Acceptable Knowledge Documentation
CCP-TP-005	Rev. 19	07/06/10	CCP Acceptable Knowledge Documentation
CCP-TP-005	Rev. 20	11/01/10	CCP Acceptable Knowledge Documentation
CCP-TP-005	Rev. 21	12/29/10	CCP Acceptable Knowledge Documentation
CCP-TP-005	Rev. 22	04/21/11	CCP Acceptable Knowledge Documentation
CCP-TP-005	Rev. 23	06/30/11	CCP Acceptable Knowledge Documentation
CCP-TP-005	Rev. 24	11/28/11	CCP Acceptable Knowledge Documentation

CCP-TP-030	Rev. 7	01/08/03	CCP TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 8	03/26/03	CCP TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 9	09/19/03	CCP TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 10	12/17/03	CCP TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 11	03/29/04	CCP TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 12	08/23/04	CCP TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 13	11/22/04	CCP TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 14	01/26/05	CCP TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 15	03/14/05	CCP TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 16	04/22/05	CCP TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 17	12/29/05	CCP TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 18	05/01/06	CCP TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 19	11/16/06	CCP CH TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 20	02/07/07	CCP CH TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 21	05/21/07	CCP CH TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 22	07/24/07	CCP CH TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 23	03/12/08	CCP CH TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 24	08/20/08	CCP CH TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 25	01/22/09	CCP CH TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 26	05/27/09	CCP CH TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 27	12/14/09	CCP CH TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 28	05/12/10	CCP CH TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 29	04/26/11	CCP CH TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 30	05/21/12	CCP CH TRU Waste Certification and WWIS Data Entry

WAP Certification:

CCP-PO-001	Rev. 5	02/05/03	CCP Transuranic Waste Characterization Quality Assurance Project Plan
CCP-PO-001	Rev. 6	06/11/03	CCP Transuranic Waste Characterization Quality Assurance Project Plan
CCP-PO-001	Rev. 7	01/08/04	CCP Transuranic Waste Characterization Quality Assurance Project Plan
CCP-PO-001	Rev. 8	03/15/04	CCP Transuranic Waste Characterization Quality Assurance Project Plan
CCP-PO-001	Rev. 9	01/14/05	CCP Transuranic Waste Characterization Quality Assurance Project Plan
CCP-PO-001	Rev. 10	02/24/05	CCP Transuranic Waste Characterization Quality Assurance Project Plan
CCP-PO-001	Rev. 11	03/10/05	CCP Transuranic Waste Characterization Quality Assurance Project Plan
CCP-PO-001	Rev. 12	03/22/06	CCP Transuranic Waste Characterization Quality Assurance Project Plan
CCP-PO-001	Rev. 13	11/16/06	CCP Transuranic Waste Characterization Quality Assurance Project Plan
CCP-PO-001	Rev. 14	03/28/07	CCP Transuranic Waste Characterization Quality Assurance Project Plan
CCP-PO-001	Rev. 15	08/10/07	CCP Transuranic Waste Characterization Quality Assurance Project Plan
CCP-PO-001	Rev. 16	10/31/07	CCP Transuranic Waste Characterization Quality Assurance Project Plan
CCP-PO-001	Rev. 17	08/22/09	CCP Transuranic Waste Characterization Quality Assurance Project Plan
CCP-PO-001	Rev. 18	06/29/10	CCP Transuranic Waste Characterization Quality Assurance Project Plan
CCP-PO-001	Rev. 19	12/29/10	CCP Transuranic Waste Characterization Quality Assurance Project Plan
CCP-PO-001	Rev. 20	06/16/11	CCP Transuranic Waste Characterization Quality Assurance Project Plan

CCP-PO-002	Rev. 7	11/20/03	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 8	01/08/04	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 9	03/15/04	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 10	11/15/04	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 11	02/24/05	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 12	03/10/05	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 13	05/09/05	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 14	12/29/05	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 15	03/22/06	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 16	11/15/06	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 17	11/15/06	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 18	11/16/06	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 19	05/22/07	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 20	11/02/07	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 21	01/26/09	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 22	01/12/10	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 23	04/07/10	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 24	06/29/10	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 25	12/29/10	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 26	07/14/11	CCP Transuranic Waste Certification Plan

CCP-PO-004	Rev. 9	05/09/02	CCP/SRS Interface Document
CCP-PO-004	Rev. 10	06/27/02	CCP/SRS Interface Document
CCP-PO-004	Rev. 11	09/20/02	CCP/SRS Interface Document
CCP-PO-004	Rev. 12	04/08/03	CCP/SRS Interface Document
CCP-PO-004	Rev. 13	08/04/03	CCP/SRS Interface Document
CCP-PO-004	Rev. 14	10/09/03	CCP/SRS Interface Document
CCP-PO-004	Rev. 15	05/24/04	CCP/SRS Interface Document
CCP-PO-004	Rev. 16	09/20/04	CCP/SRS Interface Document
CCP-PO-004	Rev. 17	10/27/04	CCP/SRS Interface Document
CCP-PO-004	Rev. 18	02/09/05	CCP/SRS Interface Document
CCP-PO-004	Rev. 19	03/14/05	CCP/SRS Interface Document
CCP-PO-004	Rev. 20	11/02/05	CCP/SRS Interface Document
CCP-PO-004	Rev. 21	03/31/06	CCP/SRS Interface Document
CCP-PO-004	Rev. 22	11/16/06	CCP/SRS Interface Document
CCP-PO-004	Rev. 23	01/31/07	CCP/SRS Interface Document
CCP-PO-004	Rev. 24	06/28/07	CCP/SRS Interface Document
CCP-PO-004	Rev. 25	05/20/08	CCP/SRS Interface Document
CCP-PO-004	Rev. 26	08/26/08	CCP/SRS Interface Document
CCP-PO-004	Rev. 27	05/22/09	CCP/SRS Interface Document
CCP-PO-004	Rev. 28	12/29/10	CCP/SRS Interface Document
CCP-PO-004	Rev. 29	07/05/11	CCP/SRS Interface Document
CCP-PO-004	Rev. 30	10/17/11	CCP/SRS Interface Document

CCP Correlation of Container Identification Numbers to Batch Data Report Numbers

Waste Stream # SR-W027-773A-HET Lot # 70

Container ID Number	NDA BDR	RTR BDR	VE BDR	HSG Sampling BDR	HSG Analytical BDR	Load Management/ Overpack Yes	Transportation /Headspace Gas BDR
773A020010**	SRNDA742	SRRTR1527	N/A	N/A[1]	110204B1	N/A	N/A
773A020022**	SRNDA736	SRRTR1519	N/A	N/A[1]	102904A1	N/A	N/A
773A030027**	SRNDA1085	SRRTR1918	N/A	N/A[1]	092606A1	N/A	N/A
773A040014**	SRNDA1077	SRRTR1913	N/A	N/A[1]	083106A1	N/A	N/A
773A080003**	SRNDA1704	SRSRTR0335	N/A	SRHSGS090001	ECL09019M	N/A	SR09FG3029
773A090028	SRLBC0564	SR4RTR0222	N/A	SRHSG1207	ECL12013M	N/A	SR12FG11001
773A090032	SRLBC0566	SR4RTR0222	N/A	SRHSG1207	ECL12013M	N/A	SR12FG3006
773A090034	SRLBC0567	SRSRTR0539	N/A	N/A	N/A	N/A	SR12FG3001
773A090035	SRLBC0560	SRSRTR0537	N/A	N/A	N/A	N/A	SR12FG3002
773A100005	SRLBC0566	SRSRTR0537	N/A	SRHSG1207	ECL12013M	N/A	SR12FG3002
773A100012	SRLBC0572	SR4RTR0223	N/A	SRHSG1207	ECL12013M	N/A	SR12FG3002
773A100021	SRLBC0566	SR4RTR0222	N/A	N/A	N/A	N/A	SR12FG11012
773A100024	SRLBC0569	SRSRTR0538	N/A	N/A	N/A	N/A	SR12FG3003
SR108022**	SRNDA777	SRRTR1590	N/A	N/A[1]	040405B1	N/A	N/A
SR108052**	SRNDA837	SRRTR1557	N/A	N/A[1]	111804A1	N/A	N/A
SR115525**	SRSGS036	SRRTR1587	N/A	N/A[1]	040105B1	N/A	N/A
SR115570**	SRNDA1240	N/A	SR04-VECCP-015	N/A[1]	111904B1	N/A	N/A
SR500432**	SRNDA1002	SRRTR1785	N/A	N/A[1]	061206B1	N/A	N/A
SR500468**	SRNDA1012	SRRTR1838	N/A	N/A[1]	053006A1	N/A	N/A
SR500706	SRLBC0583	SR4RTR0228	N/A	N/A	N/A	N/A	SR12FG11010
SR503130	SRLBC0596	SRSRTR0558	N/A	N/A	N/A	N/A	SR12FG11018
SR514539**	SRSGS048	SRRTR1526	N/A	N/A[1]	110104B1	N/A	N/A
SR516348**	SRNDA898	N/A	SRVEP60322	N/A[1]	081705A1	N/A	N/A
SR51647002	SRLBC0556	SRLBR0025	N/A	N/A	N/A	N/A	SR12FG3027
SR51647701	SRLBC0488	SRLBR0021	N/A	N/A	N/A	N/A	SR12FG3025
SR51647702	SRLBC0488	SRLBR0021	N/A	N/A	N/A	N/A	SR12FG3023
SR524079	SRLBC0487	SRSRTR0494	N/A	N/A	N/A	N/A	SR11FG3121
SR524272**	SRSGS028	SRRTR1584	N/A	N/A[1]	041305A1	N/A	N/A
SR52823302	SRLBC0499	SRLBR0021	N/A	N/A	N/A	N/A	SR12FG3017
SR52823403	SRLBC0554	SRLBR0025	N/A	N/A	N/A	N/A	SR12FG3025
SR52823510	SRLBC0488	SRLBR0021	N/A	N/A	N/A	N/A	SR12FG3025
SR528253**	SRLBC0184	SRRTR1616	N/A	N/A[1]	042205B1	N/A	N/A

CCP Correlation of Container Identification Numbers to Batch Data Report Numbers

Waste Stream # SR-W027-773A-HET Lot # 70

Container ID Number	NDA BDR	RTR BDR	VE BDR	HSG Sampling BDR	HSG Analytical BDR	Load Management/ Overpack Yes	Transportation /Headspace Gas BDR
SR608894**	SRSGS158	SRSRTR0300	N/A	SRHSGS080004	ECL08018M	N/A	SR08FG3119
SR81563**	SRNDA745	N/A	SRVEP60004	N/A[1]	040805B1	N/A	N/A
SR90921**	SRNDA1329	SRRTR1959	N/A	N/A[1]	110606B1	N/A	N/A
SR97980**	SRNDA1200	SRRTR1597	N/A	N/A[1]	040705B1	N/A	N/A
SR97996**	SRSGS064	SRRTR1583	N/A	N/A[1]	040405B1	N/A	N/A

** These containers have already been certified, but are included in this cross correlation for completeness.

[1] No sampling BDR is listed because the Agilent On-Line GC/MS system was utilized and a sampling BDR is not generated

Signature of Site Project Manager

Joshua Houghton
Printed Name

7/17/2012
Date

CCP Headspace Gas UCL_{90} Evaluation Form

WSPF #: SR-W027-773A-HET Rev. 1 **Waste Stream Headspace Gas Lot Number** 1 through 5

ANALYTE	Transform Data Used (No, Data-Log, SQRT, other)	# Samples above MDL (1)	# Samples	Maximum (ppmv)	Mean (ppmv)	SD (ppmv)	UCL_{90} (ppmv)	PRQL (ppmv)	UCL_{90} > PRQL Yes	EPA HWN
Acetone	Log	8	24	3.52	1.78	0.82	2.00	4.61		
Benzene	Non	5	24	3.69	1.45	0.99	1.72	10.00		
Bromoform	Non	0	24	2.40	0.82	0.68	1.01	10.00		
Butanol	Sq root	5	24	4.32	2.32	1.08	2.61	10.00		
Carbon Disulfide	Log	6	6	-0.56	-1.48	0.84	-0.98	2.30		
Carbon Tetrachloride	Non	1	24	3.88	1.75	1.15	2.06	10.00		
Chlorobenzene	Sq root	0	24	1.93	0.87	0.53	1.01	3.16		
Chloroform	Non	1	24	3.00	1.39	0.95	1.65	10.00		
Chloromethane	Non	2	6	0.17	0.11	0.05	0.14	10.00		
Cyclohexane	Log	0	6	-2.41	-3.47	0.76	-3.01	2.30		
1,1-Dichloroethane	Non	0	24	2.73	1.46	0.92	1.71	10.00		
1,2-Dichloroethane	Non	0	24	3.90	2.00	1.41	2.38	10.00		
1,1-Dichloroethylene	Non	0	24	2.75	1.52	0.99	1.79	10.00		
cis-1,2-Dichloroethene	Non	0	24	3.53	1.80	1.20	2.12	10.00		
trans-1,2-Dichloroethene	Non	0	24	3.26	1.39	0.98	1.65	10.00		
1,2-Dichloropropane	Log	0	6	-2.73	-3.79	0.59	-3.43	2.30		
Ethyl benzene	Non	1	24	4.04	1.42	1.07	1.71	10.00		
Ethyl Ether	Sq root	0	24	1.95	1.20	0.68	1.38	3.16		
Methanol	Log	6	24	2.99	1.78	0.51	1.91	4.61		
Methyl Ethyl Ketone	Log	6	24	6.00	1.31	1.80	1.80	4.61		
Methyl Isobutyl Ketone	Sq root	0	24	4.89	2.06	1.31	2.41	10.00		
Methylene Chloride	Non	0	24	3.06	1.22	0.83	1.45	10.00		
1,1,2,2-Tetrachloroethane	Non	0	24	3.80	1.40	1.08	1.69	10.00		
Tetrachloroethylene	Non	0	24	3.89	1.65	1.25	1.99	10.00		
Toluene	Log	16	24	3.25	1.31	1.04	1.59	2.30		
1,1,1-Trichloroethane	Log	2	24	3.01	-0.69	2.05	-0.14	2.30		
Trichloroethylene	Log	1	24	3.88	-0.38	2.26	0.22	2.30		
Trichlorofluoromethane	Log	0	6	-2.53	-3.81	0.95	-3.24	2.30		
1,1,2-Trichloro-1,2,2-trifluoroethane	Non	0	24	2.63	1.35	0.83	1.57	10.00		
1,3,5-Trimethylbenzene	Log	0	6	-2.53	-3.95	1.00	-3.35	2.30		
1,2,4-Trimethylbenzene	Log	0	6	-2.53	-4.03	1.06	-3.39	2.30		
m/p-Xylene	Log	2	24	3.37	-0.22	2.04	0.33	2.30		
o-Xylene	Log	2	24	3.09	-0.19	2.09	0.37	2.30		
Formaldehyde[c]		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hydrazine[d]		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

CCP Headspace Gas UCL_{90} Evaluation Form

WSPF #: SR-W027-773A-HET Rev. 1 **Waste Stream Headspace Gas Lot Number** 1 through 5

ANALYTE	Transform Data Used (No, Data-Log, SQTl, other)	# Samples above MDL (1)	# Samples	Maximum (ppmv)	Mean (ppmv)	SD (ppmv)	UCL_{90} (ppmv)	PRQL (ppmv)	UCL_{90} > PRQL Yes	EPA HWN

[a] These compounds are from CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC) and are flammable VOCs that do not appear in CCP-PO-001. These are not part of the target analyte list, but samples may be analyzed for these compounds.

[b] These xylene isomers cannot be resolved by the analytical methods employed in the program. m-Xylene and p-Xylene will be reported as "Total m-p-Xylene."

[c] Required only for homogenous solids and soil/gravel waste from Savannah River Site.

[d] Required only for homogenous solids and soil/gravel waste from Oak Ridge National Laboratory and Savannah River Site.

[e] These compounds are not required per the permit, but samples may be analyzed for these compounds and are reported to maintain BDR completeness.

Comments:

(1) For analytes where there were no samples measured above the MDL value, 1/2 of the MDL value was used. (Per section C4 of the WAP, 1/2 of the MDL value is used in calculating the mean concentration.)

Signature of Site Project Manager

Joshua Houghton
Printed Name

7/17/2012
Date

CCP Headspace Gas Summary Data

Waste Stream # SR-W027-773A-HET HSG Summary Lot Number (s) 1 through 5

Tentatively Identified Compound	Maximum Observed Estimated Concentrations (ppmv)	# Samples Containing TIC	% Detected
O-Methylhydroxylamine	9474.52	1	4.17%
Ethane, 1-Chloro-1, 1-difluoro-	60.00	1	4.17%

Data Supports EPA Hazardous Waste Numbers Assigned by AK? Yes ☑ No ☐

If no, describe the basis for assigning the EPA Hazardous Waste Codes:

SPM Signature _____ Date 7/17/2012

CCP RTR/VE Summary of Prohibited Items and AK Confirmation

Waste Stream #: SR-W027-773A-HET Lot #: 70

Container Number	RTR Prohibited Items [a,b]	Visual Examination Prohibited Items [a,b]
See correlation of container ID numbers for list of remaining drum numbers in this Lot.	None of the containers in this lot had prohibited items identified during RTR.	None of the containers in this Lot had prohibited items identified during Visual Examination technique.

a. See Batch Data Reports
b. If AK has assigned U134 to this waste stream, then any liquids in these containers are prohibited items (not acceptable by the TSDF).

Justification for the selection of RTR and/or VE: RTR was selected as the characterization method because the waste was previously packaged and RTR meets all the Data Quality Objectives for NDE for the waste, VE was selected as the characterization method because VE meets the Data Quality Objectives for NDE for newly generated waste.

Site Project Manager Signature | Joshua Houghton (Printed Name) | 7/17/2012 (Date)

CCP Reconciliation with Data Quality Objectives

Waste Stream #: SR-W027-773A-HET Lot #: 70

Sampling Completeness

RTR/VE:

Number of Valid Samples: 37 Number of Total Samples Analyzed: 37
Percent Complete: 100 (QAO is 100%)

NDA

Number of Valid Samples: 37 Number of Total Samples Analyzed: 37
Percent Complete: 100 (QAO is 100%)

HSG

Number of Valid Samples: 24 Number of Total Samples Collected: 24
Percent Complete: 100 (QAO is ≥90%)
Number of Valid Samples: 24 Number of Total Samples Analyzed: 24
Percent Complete: 100 (QAO is ≥90%)

Total VOC

Number of Valid Samples: NA Number of Total Samples Collected: NA
Percent Complete: NA (QAO is ≥90%)
Number of Valid Samples: NA Number of Total Samples Analyzed: NA
Percent Complete: NA (QAO is ≥90%)

Total SVOC

Number of Valid Samples: NA Number of Total Samples Collected: NA
Percent Complete: NA (QAO is ≥90%)
Number of Valid Samples: NA Number of Total Samples Analyzed: NA
Percent Complete: NA (QAO is ≥90%)

Total Metals

Number of Valid Samples: NA Number of Total Samples Collected: NA
Percent Complete: NA (QAO is ≥90%)
Number of Valid Samples: NA Number of Total Samples Analyzed: NA
Percent Complete: NA (QAO is ≥90%)

CCP Reconciliation with Data Quality Objectives

Waste Stream #: SR-W027-773A-HET Lot #: 70

	Y/N/NA	Reconciliation Parameter
1	Y	Waste Matrix Code.
2	Y	Waste Material Parameter Weights.
3	Y	The waste matrix code identified is consistent with the type of sampling and analysis used to characterize the waste.
4	Y	The TRU activity reported in the BDRs for each container demonstrates with a 95% probability that the container of waste contains TRU radioactive waste.
5	N	AK Sufficiency. Is there an approved AK sufficiency Determination for this waste stream?
6	Y	Mean concentrations, UCL_{90} values for the mean concentration, standard deviations, and the number of samples collected for each VOC in the HSG of each container were calculated and compared with the program required quantitation limits, as reported in CCP-TP-003 Attachment 3, and additional U.S. Environmental Protection Agency (EPA) Hazardous Waste Numbers were assigned as required. Samples were randomly collected (when appropriate).
7a	NA	Mean concentrations, UCL_{90} values for the mean concentration, standard deviations, and the number of samples collected for solids VOCs were calculated and compared with the program required quantitation limits and regulatory thresholds, as reported in the Characterization Information Summary, CCP-TP-003 Attachment 4, and additional EPA HWNs were assigned as required. Samples were randomly collected.
7b	NA	Mean concentrations, (UCL_{90}) values for the mean concentration, standard deviations, and the number of samples collected for solids SVOCs were calculated and compared with the program required quantitation limits and regulatory thresholds, as reported in the Characterization Information Summary, CCP-TP-003 Attachment 5, and additional EPA HWNs were assigned as required. Samples were randomly collected.
7c	NA	Mean concentrations, (UCL_{90}) values for the mean concentration, standard deviations, and the number of samples collected for total metals were calculated and compared with the program required quantitation limits and regulatory thresholds, as reported in the Characterization Information Summary, CCP-TP-003 Attachment 6, and additional EPA HWNs were assigned as required. Samples were randomly collected.

CCP Reconciliation with Data Quality Objectives

Waste Stream #: SR-W027-773A-HET Lot #: 70

8	Y	The data demonstrates whether the waste stream exhibits a toxicity characteristic under Title 40 Code of Federal Regulations (CFR), Part 261, Identification and Listing of Hazardous Waste, Subpart C, Characteristics of Hazardous Waste.
9	Y	Does the waste stream contain listed waste found in 20.4.1.200 NMAC incorporating 40 CFR Part 261, Subpart D, Lists of Hazardous Wastes.
10	Y	Waste stream can be classified as hazardous or nonhazardous at the 90-percent confidence level.
11	Y	Appropriate packaging configuration and Drum Age Criteria (DAC) is applied and documented in the headspace gas sampling documentation, and the drum age met prior to sampling.
12	Y	TICs were appropriately identified and reported in accordance with the requirements of Section C3-1 of the QAPjP.
13	Y	The PRQLs for headspace gas VOCs were met for all analyses as evidenced by the analytical batch data reports.
14		The overall completeness, comparability, and representativeness QAOs were met for each of the analytical and testing procedures as specified in the WAP Sections C3-2 through C3-9 prior to submittal of a waste stream profile form for a waste steam or waste stream lot.

	Completeness	Comparability	Representativeness
Radiography	Y	Y	Y
VE	Y	Y	Y
Headspace Gas Analysis	Y	Y	Y
Solids Sampling	NA	NA	NA
Solids VOCs	NA	NA	NA
Solids SVOCs	NA	NA	NA
Solids Metals	NA	NA	NA

Comments: None

Signature of Site Project Manager | Joshua Houghton (Printed Name) | 7/17/2012 (Date)

SUMMATION OF ASPECTS OF AK SUMMARY REPORT: WASTE STREAM SR-W027-773A-HET

Overview:

The SR-W027-773A-HET waste stream consists of Contact Handled (CH) transuranic (TRU) mixed debris waste generated at the Savannah River National Laboratory (SRNL). The mission of SRNL is to provide research & development (R&D), analytical, and process development support to Savannah River Site (SRS) nuclear materials production and waste management programs. The primary R&D categories include production, separations and recovery, waste treatment, analytical measurements, and materials technologies. Facility support operations also generate TRU waste and include renovations and decommissioning operations and maintenance and utilities. All radioactive solid waste produced at SRS is stored or disposed of at the E-Area Radioactive Waste Burial Ground (RWBG) and Solid Waste Management Facility (SWMF).

Waste stream SR-W027-773A-HET was generated at SRNL in part through R&D in support of defense nuclear materials production. The SRNL also conducted research unrelated to defense programs; however, the waste is commingled. Therefore, this waste stream is defense related waste.

This summation of the Acceptable Knowledge (AK) Summary Report includes information to support Waste Stream Profile Form (WSPF) number SR-W027-773A-HET, Rev. 1 for mixed debris waste generated at SRNL. The WSPF was originally approved on March 10, 2005. This WSPF was revised to address the addition of the Standard Large Box 2 (SLB2) payload container and associated TRUPACT-III Content Code Number SR 425 to waste stream SR-W026-772F-HET. The primary source of information for this Summation is CCP-AK-SRS-7, Central Characterization Project Acceptable Knowledge Summary Report For Savannah River Site Waste Streams: SR-W027-773A-HET, SR-W027-773A-HOM, Revision 5, August 12, 2011.

Waste Stream Identification Summary:

Waste Stream Name:	Heterogeneous Debris from 773A
Waste Stream Number:	SR-W027-773A-HET
Dates of Waste Generation:	1973 to present
Waste Stream Volume – Current:	1,762 55-gallon drums 32 standard waste boxes (SWBs)[1] 10 standard large boxes (SLB2s)
Waste Stream Volume – Projected:	33 55-gallon drums per year
Summary Category Group:	S5000 – Debris Waste
Waste Matrix Code Group:	Heterogeneous Debris Waste
Waste Matrix Code:	S5400

1. There are an additional 8 other non-payload containers that will either be repackaged into 8 SWBs or 2 SLB2s. These other containers were conservatively presented as an additional 8 SWBs.

TRUPACT-II Content Code Numbers: SR 125 / 225, SQ 154

TRUPACT-III Content Code Number: SR 425

Annual Transuranic Waste Inventory Report (ATWIR) Identification Number: SR-W027-773A-HET

Waste Stream Description and Physical Form:

Waste stream SR-W027-773A-HET is mixed debris waste comprised primarily of numerous organic and inorganic debris waste items that contains toxic metals and organics and is contaminated with listed organic solvents. The waste generally consists of paper, cloth, wood, plastic, rubber, glass, ceramic, and metal. Example waste items include aerosol cans, alpha plates, ash, balances, beakers, cardboard boxes, Celite, ceramic crucibles, circuit boards, electrical wires, eye droppers, fiber boards, filters, flasks, fly ash, furnaces, glass funnels, glass jars, glass/plastic sample bottles, glovebox parts, gloves (leaded and non-leaded), graphite, heating tape, high efficiency particulate air (HEPA) filters, hot plates, ice cream cartons, insoluble solids on filter paper, Kimwipes, Kleenex, lead bricks, mercury thermometers, metal cans, metal clamps, metal gaskets, metal pipe, metal valves, mortar and pestle (ceramic), Oil-Dri, NoChar, paint brush, paint cans, paper towels, paperclips, pH meters, pipette tips, pipettes, plastic bags, plastic tubing, plastic vials, poly bottles, pre-filters, pumps, rags, residual undissolved solids, resin columns, rubber, sand solids, shoe covers, slurries, small hand tools, aluminum baseball bats, aluminum foil, small quantities of absorbent (e.g., Oil-Dri, Accubond, Aquasorb), soil, soldering iron, stainless-steel beakers, stainless-steel labware, stir rods, tape, thermocouples, uniforms, ventilation hood parts, vermiculite, watchglass, and wipes.

The waste stream meets the definition of waste materials that have common physical form, that contain similar hazardous constituents, and that are generated from a single process or activity. The waste is generated from an analytical laboratory and associated support operations.

Point of Generation:

Location

Waste stream SR-W027-773A-HET was generated in the SRNL located in A-Area of the SRS in Aiken, South Carolina. The waste is currently stored at the SRS RWBG and SWMF.

Area and/or Buildings of Generation

Waste stream SR-W027-773A-HET was generated the B-Wing, C-Wing, E-Wing, and F-Wing of the SRNL.

Generating Processes:

Description of Waste Generating Processes

The SRNL is an analytical laboratory that provides R&D support to SRS operations and facilities. The primary categories include production, separations and recovery, waste treatment, analytical measurements, materials technologies, and associated support activities (e.g., maintenance and building clean-up activities) (References D091, D125, D126, D127, D133, and D143).

Production Technologies

Production technologies consist primarily of the fabrication of sources, fuels, billets, and targets (References C027, D091). Specific programs identified include the following:

- Development of Pu-239, Pu-240, Pu-242, and americium (Am)-243/curium (Cm)-244 targets for the subsequent production of Cm-244 (heat source material) and Cf-252 (neutron source material) (References C002, C012, C023, C024, C064, C065, C066, C072, C075, D003, D060, D061, D062, D069, D117, P043).

- Development of Am-241 targets for the subsequent fabrication of high-purity Pu-238 (medical grade) (References C065, C066, C072, D068, D069).

- Development of Np-237 targets for the subsequent fabrication of Pu-238 (heat grade) fuel forms (References C013, C062, C063, C065, C067, C072, D021, D068, D069).

- Development of new uranium assemblies for plutonium production, and examination and metallographic preparation failed fuel elements (References C067, D037, P004).

- Production of Cf-252 neutron sources (References C023, C024, C065, C066, C067, C070, C072, D003, D009, D013, D034, D035, D036, D079, P030).

- Production of Cobalt (Co)-60 heat sources and other cobalt devices (References C057, C065, C066, C067, C068, C069, D039).

Separations and Recovery Technologies

Separations and recovery technologies include experiments involving dissolution, ion-exchange, precipitation, solvent extraction, and centrifugation (References C019, C043, C055, C056, D037, D001, D002, D045, D053). Specific operations identified are as follows:

- Centrifugal separation of the organic (tributyl phosphate in normal paraffin hydrocarbon) and aqueous phases in support of the F-Canyon and H-Canyon separations facilities (References D037, D084).

- Determination of methods for recovery of plutonium from hydraulic oil, insoluble residues, and other materials (References D002, D037).

- Development of plutonium-aluminum alloys for recycling off-specification plutonium metal by dissolution in the canyons (Reference D037).

- Hydrofluorination of plutonium oxide to plutonium fluoride using hydrogen fluoride gas (References C029, D037).

- Ion-exchange separation of various actinides (e.g., Am-241/Cm-242 and Pu-238/Np-237) (References C066, C070, C072, D044, D052, D068, D070).

- Pu-239 recovery incinerator prototype using pyrohydrolysis technology (Reference D037).

- Processing of off-site reactor fuels, such as Southwest Experimental Fast Oxidation Reactor (References C030, D077, D078).

- Recovery and purification of Am-241 (References D049, D054, D059).

- Recovery and purification of Pu-242 (Reference C068).
- Recovery of plutonium from ash, molten salt extraction residues, and electrorefining anode heel residues from Rocky Flats (References D037, D057, D058).
- Recovery of Pu-238 from scrap materials by dissolution and ion-exchange (References C066, D043).
- Special isotope separation: atomic vapor laser isotope separation, molecular laser isotope separation, and plasma separation (Reference D008).
- Testing of prototype plutonium separations units using weapons-grade plutonium from FB-Line (References C067, D091).
- The work in room F-003 includes dissolution of neptunium dioxide; separation and purification of neptunium solutions which may contain plutonium, uranium, or iron via ion exchange; and oxalate precipitation and calcining the oxalate to an oxide (Reference M035).

Waste Processing Technologies

Waste processing technologies primarily involved the development of waste treatment operations including:

- Evaluation of low temperature fusion for conversion of wastes to a solid sodium nitrate (Reference C065).
- Vitrification studies of TRU and low-level wastes were also conducted (References C031, D002, D015, D018, D020, D024, D025, D037, D091).
- Nitric acid and metal-catalyzed oxidation of organic wastes (Reference D002).

Analytical Measurements Technologies

The SRNL performs various chemical and radiological analyses in support of SRS operations as well as operations within the SRNL. New or improved analytical techniques, including the use of robotics for process automation, are also developed (References D001, D037, D082). Sample preparation and analyses conducted and/or developed include:

Sample Preparation

- Dissolution (Reference P027)
- Electrodeposition (Reference D067)
- Ion-exchange separation (References P012, P026)
- Precipitation (References D067, P015, P020)
- Solvent extraction (References C021, D002, P014)
- Sonication (Reference D002)
- Toxicity characteristic leaching procedure (Reference D002)

Sample Analysis

- Alpha pulse-height analysis (References D020, D051, P014)
- Alpha spectrometry (Reference D058)
- Atomic absorption spectrometry (References D002, D037, P025)
- Atomic absorption spectrophotometry (References C021, D051, P024)
- Coulometry (References D058, P013)
- Gamma spectrometry (Reference D058)
- Gas chromatography-mass spectrometry (GC-MS) (References C044, D002, D037)
- Gross alpha counting (References D058, P014, P018)
- High-resolution gamma ray spectroscopy (References C017, D020)
- Inductively coupled plasma-emission spectrometry (ICP-ES) (References C021, D002, D037)
- ICP mass spectrometry (ICP-MS) (References D002, D037)
- Infrared spectrophotometry (References C044, D037)
- Ion chromatography (References D002, D024, D037)
- Isotope dilution mass spectrometry (References D024, D051)
- Laser-excited atomic fluorescence spectroscopy (References D024, D037)
- Liquid scintillation counting (References D067, P015, P026)
- Pu (III) spectrophotometry (Reference D056)
- Scanning electron microscopy (References D002, D021, D037)
- Spark-source mass spectrometry (Reference D020)
- Thermogravimetric analysis (Reference D021)
- Titrations (References D002, P016, P017, P019, P028)
- Total organic carbon analysis (Reference D002)
- X-ray absorption-edge densitometry (Reference D078)
- X-ray diffraction (References C004, C052, D002, D037)
- X-ray fluorescence (References C012, D067)

Materials Technologies

Studies involved general actinide properties and behavior. The following are examples of these studies:

- Analytical chemistry of neptunium (Reference D067)
- Bonding of actinide (IV) and actinide (III) ions (Reference D071)
- Crystal structure and thermal behavior of mixed actinide oxides (Reference D065)
- Chemical, physical, and nuclear properties of the transplutonium isotopes americium, curium, berkelium, californium, einsteinium, and fermium (References C063, C065, D011, D012)
- Evaluation of sand filtration on plutonium fluoride. Electrolysis of plutonium hexafluoride produces plutonyl fluoride (PuO_2F_2) (Reference C008)
- Examination and testing of Co-60 materials (References C070, D039)
- Mechanical, thermal, electrical, and magnetic properties of the transuranium elements plutonium, americium, neptunium, and curium (References D002, D066, D072, D073, D074)
- Oxidation states of americium, plutonium, neptunium, and curium (Reference D063)
- Resin calcinations for preparing transplutonium oxides and oxysulfates (Reference D040)

The following describes facility support operations, including renovations and decommissioning operations and maintenance and utilities:

Renovation, Decontamination, and Decommissioning

Various renovation, decontamination, and decommissioning operations have occurred in the SRNL. Waste generated from these operations is packaged in drums and boxes. General operations consist of dismantling and decontamination of gloveboxes, cells, and equipment as well as fixing of contamination in gloveboxes or cell liners (References C022, C036, D002, D015, D032, D037, D050, D091).

Maintenance and Utilities

During the years in which the SRNL has been in production, preventive and periodic maintenance operations were required which generated waste. Common operations include various repairs and modifications, filter changes, and glove changes (References D038, D091, P003, P036, P037, P038, P043, P047).

Waste Stream Material and Chemical Inputs

The following table identifies the Resource Conservation and Recovery Act (RCRA) toxicity characteristic and listed constituents identified in this waste stream.

Toxicity Characteristic and Listed Constituents in Waste Stream SR-W027-773A-HET

Chemical/Compound	EPA HWN	Use	Reference
Arsenic	D004	Arsenazo III used as a color indicator. Atomic absorption analysis. Zirconium phenylarsonate used for co-precipitation.	C041, D067 P024 D067
Barium	D005	Sample constituent. Barium chloride and barium sulfate used for sample precipitation.	D047 D067, P016
Cadmium	D006	Analytical development. Component of process solutions used for neutron absorption. Waste treatment technologies.	C041, C042, D091, M006 D051 D091
Chromium	D007	Analytical development. Chromic acid for cleaning equipment. Contained in alpha plates. Dichromate solution used to clean glassware. Potassium dichromate solution used for titrations. Sample constituent. Sodium chromate used for actinide oxidation.	D091, M006, M012, M013 P013, P030 C041, C042 C053 P017 D047 D067
Lead	D008	Analytical development. Sample constituent. Leaded gloves, bricks. Waste treatment technologies.	D091, M006 C041, C042, D047 C042, C053, M006 D091
Mercury	D009	Atomic absorption analysis. Analytical development. Density determination. Mercuric nitrate used as a catalyst in dissolution. Sample constituent. Thermometers. Waste treatment technologies.	P024 C042, D091, M006 D021 D057, D058 C031, D047 C041 D091
Selenium	D010	Atomic absorption analysis. Analytical development.	P024 C017, M007
Silver	D011	Sample constituent. Silver catalyzed dissolver development. Silver nitrate used for chloride separation from laboratory solutions. Silver solder.	D047 C041, C042 D052, D057, D058 P030
Carbon tetrachloride	D019	Analytical standard. Color complex formation.	C041, C044 D067

Chemical/Compound	EPA HWN	Use	Reference
Chloroform	D022	Californium purification process. Analytical development. Analytical standard.	C023, C024, C025, P030 C042, M006 C044
1,4-Dichlorobenzene	D027	Chemical used in SRNL.	M015
1,2-Dichloroethane	D028	Chemical used in SRNL.	M014, M015
1,1-Dichloroethylene	D029	Chemical used in SRNL.	M015
Vinyl chloride	D043	Chemical used in SRNL.	M015
Chlorobenzene	F002	Analytical standard.	C044
Ortho-Dichlorobenzene	F002	Chemical used in SRNL.	M015
Methylene chloride	F002	Analytical standard.	C044
Tetrachloroethylene	F002	Degreasing. Laser spectroscopy.	C041 D037
1,1,1-Trichloroethane	F002	Component of Magnaflux cleaner.	C041, C048
1,1,2-Trichloroethane	F002	Chemical used in SRNL.	M015
Trichloroethylene	F002	Cleaning and degreasing. Small concentrations in low activity drain (LAD) waste water tanks. Laser spectroscopy.	C041, P030 D031 D037
1,1,2-Trichloro-1,2,2-trifluoroethane	F002	Decontamination.	C036
Acetone	F003	Acetone dipping baths used to clean californium sources. Decontamination agent. Degreasing and drying. Common R&D reagent.	C023, C024, C025 P009 C041 C053, M035
n-Butyl alcohol	F003	Chemical used in SRNL.	M014, M015
Cyclohexanone	F003	Chemical used in SRNL.	M014
Ethyl acetate	F003	Chemical used in SRNL.	M014, M015
Ethyl benzene	F003	Chemical used in SRNL.	M014
Ethyl ether	F003	Sample dilution.	P018
Methanol	F003	Constituent in tetraphenylboron salt. Laser spectroscopy. Common R&D reagent.	C018 D037 C053, M035
Methyl isobutyl ketone	F003	Chemical used in SRNL.	M014, M015
Xylene	F003	Sample dilution. Solvent extraction. Identified in TRU waste.	P018 D037 C041
Nitrobenzene	F004	Constituent in tetraphenylboron salt.	C018
Benzene	F005	Study of cesium removal from tetraphenylboron salts. Analytical standard. Small concentrations measured in waste water from LAD tanks. Gas chromatography. Dissolving actinide compounds.	C014, C018, C041, C045, P025 C044 D031 D037 D071
Carbon disulfide	F005	Chemical used in SRNL.	D002
Methyl ethyl ketone	F005	Chemical used in SRNL.	M014, M015

2-Nitropropane	F005	Chemical used in SRNL.	M014
Pyridine	F005	Chemical used in SRNL.	M014, M015, M016
Toluene	F005	Analytical development. Cleaning cell windows. Solvent extraction.	C041, C042, D091, M006, M007 P038 M007

RCRA Determinations

Historical Waste Management

The SRNL waste has historically been managed in accordance with the generator site requirements and in compliance with the requirements of the South Carolina Department of Health and Environmental Control. Based on historical waste management, the containers in this waste stream were managed as non-hazardous or hazardous with additional toxicity characteristic and listed codes. A review of available AK documentation has determined that this waste is hazardous; however, the additional hazardous waste numbers do not apply to this waste stream (i.e., D001, D003, D018, D023, D024, D025, D026, F001, P012, P015, P048, P113, P120, U002, U032, U052, U080, U133, U134, U144, U151, U154, U161, U209, U211, U220, U226, and U239 are not applied to this waste stream). The above table summarizes the expected hazardous chemical contaminants and associated EPA hazardous waste numbers applicable to the waste stream. The assignment of these hazardous waste numbers was based on a review of chemical inputs to the waste generating operations and hazardous materials potentially contaminating the waste. In addition, material safety data sheets and other manufacturer information were obtained for the commercial products to determine the presence of RCRA regulated constituents.

Hazardous Waste Determinations

Ignitability, Corrosivity, Reactivity

Ignitability

The waste material in waste stream SR-W027-773A-HET does not meet the definition of ignitability as defined in 40 CFR 261.21. The material is not a liquid, an ignitable compressed gas, or an oxidizer, and is not capable of causing fire through friction, absorption of moisture, or spontaneous chemical change.

Containers are drained before disposal, and absorbent is added to containers with liquids in order to ensure that the waste does not exceed WIPP-WAP requirements (References P006, P031, P032, P033, P034, P046). Organic liquids miscible with water (e.g., alcohols) are disposed down the drain and would not be in the debris waste stream. Immiscible organic liquids such as tributyl phosphate are absorbed (i.e., using Oil-Dri, Accubond, or Aquasorb) in bags, bottles, or ice cream cartons (References C053, C055, C059, D002, D106, P005, P008, P010, P022, P038, P046).

Aerosol cans have been prohibited from use inside gloveboxes and cells since at least 1975, but there have been documented exceptions (References C010, C055, and C060). Procedures also prohibit the disposal of un-vented compressed gas cylinders and aerosol cans (References

P006, P031, P032, P033, P034, P035, P046). Generator interviews also indicated that if aerosol cans were in TRU waste, they would be punctured (References C052, C053, C055, C056, C057, C059, C060).

Numerous oxidizing compounds (i.e., chlorates, chromates, dichromates, hypochlorites, nitrates, nitrites, perchlorates, permanganates, peroxides, and persulfates) are used in the SRNL (References C054, D037, M014, M015, M016, P021). Oxidizers are treated (e.g., sodium nitrite was added to permanganates) and then disposed down the drain (References C053, C055, C056, C060, P017).

Ignitable solids identified in the SRNL include aluminum powder, zirconium hydride, and cerium, magnesium, and sodium metals (References C053, C054, M014, M015, M016, M027). Pyrophorics are prohibited from disposal in solid waste. These materials are rendered non-pyrophoric before being disposed. This may be accomplished by converting the material to a solid salt form or an aqueous liquid salt solution. The salt in solid form may be disposed as TRU waste, but the aqueous salt solutions are discarded as liquid waste (References C042, C053, P006, P008, P031, P032, P033, P034, P035). Therefore, the waste number for ignitability (D001) does not apply to this waste stream.

Corrosivity

The waste material in waste stream SR-W027-773A-HET is not liquid and does not contain unreactive corrosive chemicals; therefore, it does not meet the definition of corrosivity as defined in 40 CFR 261.22. Corrosive liquids used in the SRNL include acids (e.g., nitric, hydrochloric, hydrofluoric, perchloric) and caustics (e.g., sodium hydroxide, ammonium hydroxide) (References C054, D002, D037, D067, M014, M015, M016). These materials are generally neutralized and disposed down the drain (References C042, C053, C055, C056, C057, C060, D002, D106, P005, P008, P010, P017, P022, P025, P038). Containers are drained before disposal and any residual liquid is absorbed (i.e., using Oil-Dri) (References P006, P031, P032, P033, P034, P046). Therefore, the waste number for corrosivity (D002) does not apply to this waste stream.

Reactivity

The waste material in waste stream SR-W027-773A-HET does not meet the definition of reactivity as defined in 40 CFR 261.23. The materials are stable and will not undergo violent chemical change without detonating. The materials will not react violently with water, form potentially explosive mixtures with water, or generate toxic gases, vapors, or fumes when mixed with water. The materials are not capable of detonation or explosive reaction. Reactive metals used in the SRNL include calcium, lithium, sodium hydride, and zinc powder (References C053, C054, M014, M015, M016). Reactive metals are prohibited from disposal in solid waste. These materials are rendered non-reactive (e.g., using alcohol and water) and then disposed down the drain (References C019, C053, P008, P032, P034, P035). Cyanide and sulfide compounds are used but the solutions are disposed down the drain (References C053, C054, M014, M015, M016, M027). Procedures prohibit the disposal of explosives (References P031, P032, P033, P034). Potentially explosive solutions (e.g., hydrazine) are used in the SRNL. These solutions are neutralized and then disposed down the drain and would not be in the debris waste stream (References C041, C055, P041, P042). Therefore, the waste number for reactivity (D003) does not apply to this waste stream.

The containers in the waste stream will be evaluated in accordance with the WIPP-WAP using radiography and/or visual examination prior to shipment to ensure the waste is not ignitable, reactive, or corrosive.

Toxicity Characteristic

Debris waste from the SRNL contains or is contaminated with toxicity characteristic metals and organic compounds per 40 CFR 261.24. Based on the AK source documentation, the toxicity characteristic constituents arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, carbon tetrachloride, chloroform, 1,4-dichlorobenzene, 1,2-dichloroethane, 1,1-dichloroethylene, and vinyl chloride are used in the SRNL and may be present in this waste stream. Since data are not available that demonstrate the concentration of these constituents is less than the toxicity characteristic regulatory level, EPA hazardous waste numbers D004, D005, D006, D007, D008, D009, D010, D011, D019, D022, D027, D028, D029, and D043 are assigned to waste stream SR-W027-773A-HET (References DR001, M027).

Several of the F-listed solvents identified in the above table are also toxicity characteristic organics. However, these compounds are known to have been used for their solvent properties, and therefore, the more specific F-listed hazardous waste numbers are assigned (e.g., F005 for benzene) (Reference M027).

Chemical inventories identify the semi-volatile organics (e.g., o-Cresol, m-Cresol, p-Cresol, Cresol) (References C054, M015). In Lab B-123, radioactive and nonradioactive samples were analyzed for semi-volatile organics (Reference D002). According to generator interviews, the analysis was not done on TRU samples. Samples were either nonradioactive or were contaminated with very low levels of radioactivity. No TRU waste would have been generated from this analysis (Reference C071). Therefore, waste stream SR-W027-773A-HET does not exhibit the characteristic of toxicity for semi-volatile organics (i.e., EPA hazardous waste numbers D023, D024, D025, and D026).

Listed Waste

F-Listed Waste

Debris waste from the SRNL is mixed with hazardous wastes from non-specific sources as listed in 40 CFR 261.31. Based on the AK source documentation, numerous F-listed solvents are used in the SRNL. Several of the F-listed solvents in the above table were identified in the SRNL chemical inventories; however, review of other documentation did not identify their specific use. Analytical and R&D operations commonly use organic liquids for their solvent properties (i.e., to dissolve or mobilize other constituents) therefore, it is assumed that these compounds were used as solvents (References M014, M015). Therefore, EPA hazardous waste numbers F002, F003, F004, and F005 are assigned to waste stream SR-W027-773A-HET (Reference DR001, M027).

Although several F001-listed solvents are used in the SRNL, EPA has provided a regulatory clarification that the F001 listing is only appropriate when the listed solvents are used in a large-scale degreasing operation such as cold cleaning or vapor degreasing on an industrial scale. The SRNL did not conduct large-scale degreasing operations; therefore, EPA hazardous waste number F001 will not be assigned to this waste stream (Reference DR001).

K-Listed Waste

This waste stream does not include any of the manufacturing process wastes from the specific industries or sources listed in 40 CFR 261.32.

P- and U-listed Wastes

Waste stream SR-W027-773A-HET is not a discarded commercial chemical product, an off-specification commercial chemical product, or a container residue or spill residue thereof as defined in 40 CFR 261.33. Numerous P- and U-listed chemicals were identified in the SRNL including beryllium powder (P015) and hydrofluoric acid (U134). However, no pure product or unused waste chemicals would have been placed into the TRU waste stream (References C041, C046, M014, M015, M027). Beryllium is present in the waste stream in particulate form but does not meet the definition of a P015-listed waste (i.e., unused beryllium powder) (References C053, C059, D043, P032). Chemical solutions were typically made up outside the glovebox, and pure chemicals were not generally brought into the glovebox (References C053, C056, C059, C060, D037). In addition, vials and containers that contain liquid waste are drained, rinsed with water, and drained again before disposal (Reference C042). Therefore, this waste stream is not assigned P- or U-Listed EPA hazardous waste numbers (Reference DR001).

Polychlorinated Biphenyls

The debris materials in waste stream SR-W027-773A-HET do not contain polychlorinated biphenyls (PCBs). Fluorescent light fixtures (which would include ballasts) are mounted outside of gloveboxes, radiobenches, and hoods and therefore would not be in TRU waste (References C052, C055, C056, D037). High pressure sodium vapor lights are mounted inside the shielded cells (E-wing) but because most of the shielded cell work does not produce TRU waste, the fixtures (which would include ballasts) would not be in TRU waste (Reference C057). The main transformers that supply electrical power to the SRNL are located outside the building. PCBs are no longer used in electrical equipment but according to a 1998 Safety Analysis Report, one power transformer still contains PCBs (Reference D037). Equipment containing PCB oils would not be inside gloveboxes (References C059, C060). Samples are analyzed for PCB content in Lab B-123; however, TRU PCB waste is not generated per this analysis (Reference C071). Disposal of TRU waste containing PCBs in concentrations greater than 50 parts per million has been prohibited by procedure for over 20 years (Reference D037, P006, P032, P034, P035).

Prohibited Items

Based on the review of the container documentation, unacceptable quantities of liquid are noted on waste disposal forms for only one container from the SRNL. No other prohibited items were specifically identified on waste disposal forms in waste stream SR-W027-773A-HET (References M001, M002, and M003). However, containers with prohibited waste items identified during characterization activities will be segregated then treated and/or repackaged to remove the items prior to certification and shipment.

Method for Determining Waste Material Parameters Weights per Unit of Waste

The waste material parameters associated with waste stream SR-W027-773A-HET are based on specific waste items identified in packaging procedures, standard operating procedures, and waste disposal forms. To estimate the waste material parameter weight percentages for waste stream SR-W027-773A-HET, data were obtained from the Waste Data System, formerly known as the WIPP Waste Information System, database as of October 3, 2006, the results of which are presented in the below table.

Waste Stream SR-W027-773A-HET Waste Material Parameters

Waste Material Parameter	Average Weight Percent	Weight Percent Range
Iron-based Metals/Alloys	31.4%	0.0 – 98.2%
Aluminum-based Metals/Alloys	1.5%	0.0 – 51.3%
Other Metals	3.9%	0.0 – 88.7%
Other Inorganic Materials	15.5%	0.0 – 84.4%
Cellulosics	9.2%	0.0 – 78.8%
Rubber	5.4%	0.0 – 93.1%
Plastics (waste materials)	32.9%	0.0 – 100.0%
Inorganic Matrix	0.1%	0.0 – 24.3%
Organic Matrix	<0.1%	0.0 – 4.3%
Soils/Gravel	0.0%	0.0 – 0.0%

List of AK Sufficiency Determinations Requested for the Waste Stream

There are no AK sufficiency determination requests for this waste stream.

Transportation

This waste stream and its chemical constituents have been reviewed for consistency with listed TRUCON codes and they are consistent.

Beryllium

Beryllium will not be present in amounts greater than 1% by weight of the waste in each payload container.

Radionuclide Information

Waste stream SR-W027-773A-HET originated from the SRNL. A variety of contamination codes (e.g., Isotope1/Variety Cont (1) 50 – Pu-239) were recorded on the Burial Ground Record (BGR) forms, as well as the total quantity of the element and the isotopic quantity from the assay results. The assay results and any scaled isotopes are entered into the SRS TRU Waste Characterization database. To determine isotopic ratios for the waste stream, radiological data for the containers were evaluated. The prevalent radionuclides based on the evaluation are U-238 and Pu-239.

Waste Stream SR-W027-773A-HET Radiological Characterization

Radionuclide	Total Radionuclide Wt%[1]	Total Radionuclide Ci%[2]	Radionuclide Wt% Range for Individual Containers[3]	Radionuclide Ci% Range for Individual Containers[4]	Suspected Present (Yes/No)
Am-241	0.10%	0.73%	0 – 100%	0 - 100%	Yes[6]
Pu-238	1.65%	62.86%	0 – 81.76%	0 – 97.87%	Yes
Pu-239	20.51%	2.84%	0 – 99.05%	0 – 85.19%	Yes
Pu-240	1.37%	0.70%	0 – 31.13%	0 – 55.77%	Yes
Pu-242	0.66%	0.01%	0 – 81.61%	0 – 6.89%	Yes
U-233	0.01%	Trace	0 – 100%	0 – 100%	Yes[6,8]

Radionuclide	Total Radionuclide Wt%[1]	Total Radionuclide Ci%[2]	Radionuclide Wt% Range for Individual Containers[3]	Radionuclide Ci% Range for Individual Containers[4]	Suspected Present (Yes/No)
U-234	0.01%	Trace	Trace – 3.23%	Trace – 83.52%	Yes[6]
U-238	**73.65%**	Trace	0 – 99.48%	Trace – 2.34%	Yes[10]
Sr-90[7]	Trace[5]	0.67%	Trace – 29.05%	0 – 39.33%	Yes[7]
Cs-137	Trace	0.95%	0 – 90.32%	0 – 98.28%	Yes
Additional Radionuclides					
Am-242m	Trace	Trace	0 – 0.03%	0 – 0.02%	Yes[6,9]
Am-243	0.13%	0.06%	0 – 60.55%	0 – 0.96%	Yes
Ba-137m	Trace	0.65%	0 – Trace	0 – 25.24%	Yes
C-14	Trace	Trace	0 – 0.22%	0 – 0.22%	Yes
Ce-144	Trace	Trace	0 – Trace	0 – 0.05%	Yes
Cf-249	Trace	Trace	0 – 0.11%	0 –Trace	Yes
Cf-250	Trace	Trace	0 – 0.06%	0 – 0.01%	Yes
Cf-251	Trace	Trace	0 – 0.11%	0 – Trace	Yes
Cf-252	Trace	0.01%	0 – 99.73%	0 – 99.98%	Yes
Cm-242	Trace	Trace	0 – Trace	0 – 0.02%	Yes
Cm-243	Trace	Trace	0 – 0.11%	0 – 1.49%	Yes
Cm-244	0.03%	5.63%	0 – 14.92%	0 – 95.94%	Yes
Cm-245	Trace	Trace	0 – 2.29%	0 – 0.09%	Yes
Cm-246	Trace	Trace	0 – 2.57%	0 – 0.17%	Yes
Cm-247	Trace	Trace	0 – Trace	0 – Trace	Yes
Cm-248	Trace	Trace	0 – 0.01%	0 – Trace	Yes
Co-60	Trace	Trace	0 – Trace	0 – 5.15%	Yes
Cs-134	Trace	0.07%	0 – 0.42%	0 – 2.65%	Yes
Es-253	N/A	N/A	N/A	N/A	No[11]
Es-254	N/A	N/A	N/A	N/A	No[11]
Eu-154	Trace	0.04%	0 – 1.15%	0 – 1.42%	Yes
Eu-155	Trace	Trace	0 – 0.02%	0 – 0.05%	Yes
Fm-257	N/A	N/A	N/A	N/A	No[11]
H-3	Trace	Trace	0 – Trace	0 – 2.87%	Yes
Kr-85	Trace	0.05%	0 – 0.99%	0 – 1.88%	Yes
Ni-59	Trace	Trace	0 – 30.69%	0 – 0.54%	Yes
Np-237	0. 72%	Trace	0 – 100%	0 – 100%	Yes
Np-239	N/A	N/A	N/A	N/A	Yes14
Pm-147	Trace	0.06%	0 – 0.55%	0 – 2.45%	Yes
Pr-144	Trace	Trace	0 –- Trace	0 – 0.05%	Yes
Pu-241	0.11%	24.16%	Trace – 1.15%	0 – 89.83%	Yes
Rh-106	Trace	Trace	0 – Trace	0 – 0.17%	Yes
Ru-106	Trace	Trace	0 – Trace	0 – 0.17%	Yes
Sm-151	Trace	0.01%	0 – 2.84%	0 – 0.36%	Yes
Tc-99	Trace	Trace	0 – 48.36%	0 – 0.18%	Yes
Te-125	Trace	Trace	0 – Trace	0 – 0.08%	Yes

Th-228	N/A	N/A	N/A	N/A	Yes12
Th-232	N/A	N/A	N/A	N/A	Yes6,13
U-235	0. 84%	Trace	0 – 83.89%	0 – 1.21%	Yes
U-236	0.20%	Trace	0 – 24.77%	0 – 15.22%	Yes6
Y-90	Trace	0.49%	0 – 0.01%	0 – 19.15%	Yes

[1] This listing indicates the total wt% of each radionuclide over the entire waste stream.
[2] This listing indicates the total activity Ci% of each radionuclide over the entire waste stream.
[3] This listing is the wt% range of each radionuclide on a container-by-container basis. Some containers with "0" listed as the lower range, will not contain the specified radionuclide.
[4] This listing is the Ci% range of each radionuclide on a container-by-container basis.
[5] "Trace" indicates <0.01 Wt% for that radionuclide.
[6] These radionuclides are also daughter products and in-growth or NDA issues should be considered
a. Np-237 daughters: Pa-233, U-233
b. U-236 daughters: U-232, Th-232
c. Pu-241 daughter: Am-241
d. Pu-238 daughter: U-234
e. Pu-240 daughter: U-236, Th-232
f. Am-242m daughter: Am-242
[7] Sr-90 cannot be quantified by gamma spectroscopy. Its value is calculated based on measured Cs-137 values. Therefore, Sr-90 wt% ranges will vary dependent on Cs-137 values.
[8] U-233 is not listed on SRS assay records for this waste stream; however, source documents identify U-233 standards used in the facility (M007).
[9] The SRS assay data listed Am-242m without the daughter Am-242. Am-242 and Am-242m are both formed in the reactor from neutron capture reactions. Am-242m decays to Am-242. The parent, Am-242m, has a much longer half-life than the daughter, Am-242. These isotopes of Am will be in equilibrium in the waste stream due to decay of the parent, Am-242m. Therefore, although only Am-242m is listed on the table, both isotopes should have the same activity levels.
[10] Uranium has been identified in less than 2-percent of the containers; however, several of these contain significant quantities of uranium. For example, container 773A000015 contains over 5 kilograms U-238.
[11] This isotope was identified in AK source documentation, but is not listed on SRS assay records for this waste stream. This isotope is not expected to be present in the waste stream because of its short half-life.
[12] Th-228 is not listed on SRS assay records for this waste stream; however, source documents identify Th-228 standards used in the facility (M007).
[13] Th-232 is listed on only two SRS assay records for this waste stream; however, source documents identify Th-232 used in specific studies in the lab (D078).
[14] Np-239 is not listed on SRS assay data. Source documents identify the potential presence (C072). Np-239 is also a daughter of Am-243.

Payload management will not be utilized for this waste stream.

Source Documents

Source Document Number	Title
C001	Savannah River Laboratory (IPDL) PuF6 Screening Test Facility
C002	Plutonium in Fab Lab
C003	DWPF Canister Fill Level Detector Cf-252 Source Replacement Radiation Dose Rates (U)
C004	SRL Nuclear Materials Division Special Hazards Investigation No. 285
C005	SRL Program On Processing FFTF and LMFBR (DEMO) Fuel
C006	SRL Research and Development Effort for Off-Site Non-production Fuel Processing
C007	SRL Work in SRP – Mark 22 TC Assembly Discharge in 105-K
C008	Safety Assessment of the Separations Engineering Sand Filter Efficiency Experiment
C010	Request for Deviation from SRP Safety Manual Item 89 for the CSEM Facility, Room C-131, 773-A
C012	Handling Mark 41 Outer Target Tubes in Fabrication Laboratory
C013	Milliwatt Generator (MWG) Meeting at SR – February 15 & 16, 1978
C014	Request for Approval to Handle Benzene
C015	Encapsulation of SRL Pellets in the PuFF Facility
C016	Untitled, Re: Criticality Safety Analysis
C017	Development Status of SRL-Contracted Radionuclide Procedures at Rockwell-Hanford
C018	SRL Support of Salt Decontamination Demonstration
C019	Savannah River Laboratory Actinide Technology Division Process Incident Report No. PI-ATD-83-1
C020	Restoration of SRL High-Level and Low-Level Radioactive Waste Drains
C021	Determination of Trace Impurities in Uranium by Atomic Spectroscopic Methods
C022	Fixing Contamination in SRL Californium Cells
C023	Californium-252 Waste on TRU Pads -Reassignment to LLW and Disposal
C024	Californium-252 Waste on TRU Pads – Removal of Solvent Codes
C025	Disposition of Solvents in Processing of Californium
C027	SRL Quality Assurance Description
C029	NEPA Recommendation Plutonium Hydrofluorination Development Facility SRL
C030	SRL R&D Effort for Processing SEFOR and Fermi Fuels

Source Document Number	Title
C031	Processing of Tank 15 Sludge
C032	Final Unusual Occurrence Report (UOR) SRS-90-SRL-03
C033	Air Sampling During Lead Melting and Pouring in the Fab Lab, 773-A (U)
C034	Air Sampling During Beryllium Bar Removal in 773-A, 7/1/99
C035	Tritium Monitoring Bldg. 773-A
C036	SRL Decontamination Technology Program (U)
C038	Request to Remove Hazardous Waste Label from Waste in 776-A Satellite Area
C040	For 773-A AK, Re: Dried Sludge
C041	Applicability of RCRA Waste Codes to TRU Waste Generated in 773-A
C042	Project S-2991, Transuranic (TRU) Waste Facility Waste Characterization and Burial Container Criticality Limits
C043	Dissolution of LANL DOR Plutonium Metal
C044	Request for Approval to Handle Carcinogenic Chemical Standards (U)
C045	Request for Approval to Handle Benzene
C046	FW: Codes to be added to WIPP Permit
C047	HLW in casks
C048	Program for the Handling of Hazardous Waste Rags and Wipes
C049	Requirements for Packaging Transuranic Waste
C050	TRU Waste Baseline Inventory Report Savannah River Site Update
C051	Processing of SRL High- Level Waste Within SRL
C052	Interview with David Missimer and Ronny Rutherford
C053	Interview with David Karraker
C054	Interview with Marie Frazer
C055	Interview with Eddie Kyser and Kevin Kalbaugh
C056	Interview with John Gray
C057	Interview with Ronald Blessing and Sallie (Jane) Howard
C058	Interview with David Keel
C059	Interview with Kathy Klapper, Bridget Miller, Beverly Wall, and Patrick Westover
C060	Interview with Bill Wilson

Source Document Number	Title
C061	Interview with Veronica Shaw
C062	Mark 61 Target Fabrication on Process Description for Initial Production
C063	Memo by R. G. Baxter providing discussion of the possible availability and uses of by-production transplutonium nuclides from the SR CA programs
C064	Recycle of 252 Cf Intermediates
C065	SRL Digest 1970
C066	SRL Digest 1971
C067	SRL Digest 1972 January – November (UCNI)
C068	High Level Caves, Monthly Report, Dec. 21 1967 – January 20, 1968
C069	HLC, Monthly Report, 12/21/69 – 1/20/70
C070	HLC, Monthly Report, 1/21/71 – 2/20/71
C071	Interview With Steve Crump and Tom White
C072	Isotopic Content of TRU Streams Containing Different Contamination Variety Identifications
C073	E-mail correspondence from Marie Frazer to Jeff Harrison.
C074	Evaluation of TWBIR Waste Streams for Building 773-A
C075	E-mail from Joe D'Amelio on Requested Information
C076	E-mail correspondence from Jeff Lunsford to Mark Doherty; Ref: SRS TRU Waste Container ID: 773A070012 and 773A070017
C077	STAR Item Response-Be Contact Waste
C078	Evaluation of Volume, Period of Generation, and Calculation of Individual and Total Radionuclide Masses and Activities for Waste Stream SR-W027-773A-HET
C079	Memo from R. C. Hochel re: TRU Boxed Waste Measurement Task Team Meeting Minutes 6/23/89
C081	Evaluation of Volume, Period of Generation, and Calculation of Individual and Total Radionuclide Masses and Activities for Waste Stream SR-W027-773A-HOM
C083	E-mail correspondence from Jeff Lunsford to Jim Schoen.
C085	E-mail correspondence from Jeff Lunsford to Mike Papp Ref: SRS-7 and "Ice Cream" Cartons
C086	E-mail correspondence from Jeff Lunsford to Jeff Harrison RE: SRS-7 and "Ice Cream" Cartons: Follow-Up to the Ann Gibbs Interview.
D001	SRTC Monthly Reports
D002	SRTC Technical Area Safety Analysis Report
D003	252Cf: Large Scale Production, Separation, and Applications

Source Document Number	Title
D004	Reduction of Waste Volume From The Enriched Uranium Process by Crystallization of Aluminum Nitrate
D005	Californium-252 Review 1971-1972
D006	Californium-252 Progress
D007	Criticality Control Procedure – Disposal of Fissionable Material to the Radioactive Waste Systems
D008	Isotope Separation Processes
D009	252Cf Encapsulation and Shipping at SRL
D010	Californium-252 Progress
D011	Purification of 244Cm and 250Cf-252Cf for Radiation Property Measurements
D012	Radiation Properties of Californium
D013	Californium-252 Encapsulation at the Savannah River Laboratory
D014	Excerpts of SRL Monthly Report(s) – Electrolytic Dissolver
D015	Radiation Control – Environmental Effects Division, Savannah River Laboratory (Monthly Report)
D016	SRL-SRP Mercury Monitoring Program
D017	DWMT Briefing for Walton and Miller at SRL 12/10/74 (RE: Assessment Program and Development Program for Long-Term Management of SRP wastes)
D018	Savannah River Laboratory Quarterly Report(s), 1974
D019	Safety Analysis – Savannah River Laboratory Technical Area
D020	Savannah River Laboratory Quarterly Report(s), Waste Management (1975)
D021	Savannah River Laboratory Monthly Report(s), 238Pu Fuel Form Processes
D022	Annual Review – Division of Production and Materials Management
D023	Savannah River Laboratory Quarterly Report – Waste Management
D024	Steering Committee – SRL Defense Waste Management Program Review
D025	Program Review – SRL Defense Waste Management
D026	Savannah River Laboratory Five-Year Plan, Fiscal Years 1978 through 1982
D027	SRL Process Development Review
D028	Savannah River Laboratory Technical Division Program Review
D029	SRL Program Plan – October 1981
D030	SRL Program Plan

Source Document Number	Title
D031	Characterization of High and Low Activity Liquid Waste from 773-A
D032	Quality Assurance Assessment of Project S-3987
D033	Powder Metallurgy Fuel Fabrication
D034	Californium-252 Progress
D035	Californium-252 Progress
D036	Californium-252 Progress
D037	Safety Analysis Savannah River Laboratory Technical Area
D038	Process Hazards Review of the 904-a Trench (U)
D039	Savannah River Laboratory Cobalt-60 Power and Head Sources, Quarterly Progress Report
D040	Development of a Plant-Scale Resin Calcination System for Preparing Transplutonium Oxides or Oxysulfates
D041	ION Exchange Process for Separating Americium and Curium from Irradiated Plutonium
D042	Neutron Spectra from Californium-252 Wire Sources
D043	Recovery of Plutonium-238 from Scrap Materials
D044	Separation of 238 Pu from 237 Np by Pressurized Anion Exchange
D045	Processing of 238 Pu and 237 Np with Macroporous Anion Exchange Resin
D046	Partitioning of Light Lanthanides from Actinides by Solvent Extraction with TBP
D047	Sampling and Analyses of SRP High-Level Waste Sludges
D048	A Study of Methods for Removing Strontium, Plutonium, and Ruthenium from Savannah River Plant Waste Supernate
D049	Recovery of Americium-241 from Aged Plutonium
D050	Decontamination of TRU Glove Boxes
D051	Determination of Cadmium in Solutions Containing Uranium, Neptunium, and Plutonium
D052	Cation Exchange Process for Recovery of Plutonium from Laboratory Solutions Containing Chloride
D053	Dissolution of Plutonium Metal in Sulfamic Acid at Elevated Temperatures
D054	Isolating 241 Am from Waste Solutions Container Al, Ca, Fe, and Cr
D055	Westinghouse Savannah River Company Document Approval Sheet, Radiogenic Gas Accumulation in TRU Waste Storage Drums
D056	Analysis of Special Recovery Samples by Pu III) Spectrophotometry
D057	Reclamation of Plutonium from Pyrochemical Processing Residues

Source Document Number	Title
D058	Recovery of Plutonium from Electrorefining Anode Heels at Savannah River
D059	Separation of 241 Am from Calcium and Lead Using Masking and Multiple Oxalate Precipitation Techniques
D060	Critical Experiments with Highly Burned-Up Plutonium in D20
D061	Production of the Transplutonium Elements at Savannah River
D062	Savannah River Experience with Transplutonium Elements
D063	A Test for Oxidation of Actinides in Concentrated CsF Solutions
D064	Development of a Pressurized Cation Exchange Chromatographic Process for Separation of Transplutonium Actinides
D065	Studies of Mixed Actinide Oxides: Am y Cm 1-y 0 x and Pu y Cm 1-y 0 x
D066	Physical Properties of Aqueous Solutions of the Transuranium Elements
D067	Analytical Chemistry of Neptunium
D068	Plutonium 238, Power in a Small Package
D069	Preparation of the Transuranium Nuclides
D070	Anion Exchange Separation of 238 Pu and 237 Np Using Macroporous Anion Exchange Resin
D071	Neptunium and Plutonium
D072	Thermal Conductivity of 238 Pu02 Powder, Intermediates, and Dense Fuel Forms
D073	Preparation, Microstructures, and Properties of PuO2
D074	Effect of Oxalate Precipitation on PuO2 Microstructures
D075	Predicted Environmental Impacts of Long-Term Waste Management at the Savannah River Site
D076	Savannah River Laboratory Environmental Transport and Effects Research Annual Report – 1975
D077	Savannah River Laboratory Technical Progress Report Converter Fuel Cycle Technology July – September 1978
D078	Savannah River Laboratory Technical Progress Report, Consolidated Fuel Repressing Program
D079	252Cf Encapsulation and Shipping at SRL
D080	Pilot-Scale Reactor Activation Facility at SRL
D081	Powder Metallurgy Development at SRL
D082	Laboratory Robotics Systems at the Savannah River Laboratory
D083	WIPP/SRL In SITU Testing Program – An April 1987 Update
D084	SRL Laboratory-Scale Fuel Reprocessing Facility

Source Document Number	Title
D085	SRL Laboratory-Scale Fuel Reprocessing Facility
D087	Savannah River Laboratory Quarterly Report, Alternate Fuel Cycle Technology
D088	Curium Processing-Building 773-A
D089	Savannah River Technology Center (SRTC), SRTC Area Shielded Cells-773-A "E" Wing, System Design Description (SDD) (U)
D090	773-A Shielded Cells Facility Waste Certification Plan
D091	773-A Waste Characterization Plan (U)
D092	Savannah River Laboratory Monthly Report
D093	SRL Monthly Reports 1989 January thru December
D094	Savannah River Laboratory Monthly Reports 1990 February thru July and November thru December
D095	Savannah River Laboratory Monthly 1991 Report January thru December
D096	Savannah River Laboratory Monthly Report 1992 January thru March and July thru October
D097	Savannah River Technology Center Monthly Report 1993 January thru March, May thru July, and October
D098	Savannah River Technology Center Monthly Report 1994 January, March thru August, and December
D099	Savannah River Technology Center Monthly Report 1995 January thru March and May thru December
D100	Savannah River Technology Center Monthly Report 1998 January thru March, June, July, November, and December
D101	Savannah River Technology Center Monthly Report 1999 January thru June and August, September, and November
D102	Savannah River Technology Center Monthly Report 2000 January thru April and June thru November
D103	Savannah River Technology Center Monthly Report 2001 February thru April and June thru December
D104	Savannah River Technology Center Monthly Report 2003 January thru June
D105	SRTC 776A Low-Level Radioactive Waste Characterization and Sampling Plan
D106	Process Hazards Review of the Liquid Waste Collection System, 776-A
D107	Savannah River Laboratory Monthly Report 1979 January thru December
D108	Savannah River Laboratory Monthly Report 238Pu Fuel Form Processes 1974 February, March, July, and October
D109	Preparation of Industrial Cf252 Neutron Sources at Savannah River Laboratory
D110	Storage of Solid Radioactive Waste
D111	Design and Operation of Small-Scale Melters for Immobilizing Radioactive Waste

Source Document Number	Title
D112	A Small-Scale Integrated Demonstration for High-Level Radioactive Waste Processing an Vitrification Using Actual SRP Waste
D113	Plutonium Vulnerability Study Site Assessment Report
D114	Savannah River Laboratory, 1984 A Year of Progress
D115	Savannah River Plant-Savannah River Laboratory
D116	Savannah River Plant Safeguards and Security Facility Plan Chapter VII – SRL and TNX (U)
D117	Isolation of Transplutonium Elements
D118	Savannah River Laboratory Monthly Report
D119	Monthly Report 01/1984 Occupational Health Protection Laboratory Operations Section Savannah River Laboratory
D120	Pu Hydrofluorination Development Facility, Building 773-A
D121	E-Area, TRU Pads Transuranic Waste Acceptance Criteria
D122	Citation Determination and Evaluation of Waste Incidental to Reprocessing
D123	Savannah River Laboratory Monthly Report 238Pu Fuel Form Processes
D124	Separations Monthly Report for August 1984
D125	Savannah River Laboratory History Nuclear Reactor Technology
D126	Savannah River Laboratory History Defense Waste Management
D127	Savannah River Laboratory History General
D128	SRTC/TNX Waste Certification Plan
D129	SRTC Transuranic (TRU) Waste Characterization Plan
D130	LLW Characterization for TRU Waste from SRTC
D131	Process Hazards Review of the Intermediate Level Cell #1 Facility
D132	ILC-2 Process Hazards Review
D133	History of the Savannah River Laboratory, Volume III-Power Reactor and Fuel Technology
D134	Accomplishments and Program–Separations Chemistry and Engineering Section Steering Committee Meetings – March 31, 1970 and August 4, 1970
D135	Accomplishments and Program–Separations Chemistry and Engineering Section Steering Committee Meetings-3/ 30/71, 8/4/71,& 12/7/71
D136	Accomplishments and Program Separations Chemistry and Engineering Section
D137	Status Report, SRL Engineering Services, December 1, 1971 through March 31, 1972
D138	Savannah River Laboratory Progress Report, Long-Range Waste Management

Source Document Number	Title
D139	SRL Isotopic Power an Heat Sources Monthly Progress Report
D140	Savannah River Laboratory Monthly Report, 238 Pu Fuel Form Processes
D141	Safety Analysis of the 244Cm Separations Process in the High Level Caves
D142	Safety Analysis of the Target Fabrication Facility in the IPDL
D143	Savannah River Laboratory History, Chemical Processes, January 1984 – December 1988
D144	Safety Analysis of the California Packaging Facility
D145	Technical Standards, Manufacture of Targets Containing Americium and Curium
D146	Savannah River Laboratory Monthly Report May, July, September 1973 (UCNI)
D147	Savannah River Laboratory Monthly Report February 1975
D148	Savannah River Laboratory Monthly Report April 1977 (UCNI)
D149	Savannah River Laboratory Monthly Report January 1978
D150	Classified Savannah River Laboratory Monthly Report March 1982, Atomic Weapon Data Category Sigma 3
D151	773-A Monthly Report Summary, January 1974 thru December 1974 and January 1975 thru December 1975
D152	TWBIR UPDATE 2004 for Compliance Recertification Application 2004.
D153	Annual Safety Appraisal Report for Savannah River Technology Center: 773-A Main Laboratory and 776-A Waste Handling Facility
D154	SRTC-SHO Facility Specific Standing Order
D155	Specific Chemical Forms for WIPP Performance Assessment and Finalization of chemical Lists for TRUPACT-II SAR
DR001	Acceptable Knowledge Source Document Discrepancy Resolution, Waste Stream SR-W027-773A-HET, Heterogeneous Debris Waste from Building 773-A
DR003	Acceptable Knowledge Source Document Discrepancy Resolution, Waste Stream SR-W027-773A-HOM Historical and Current RCRA Characterization and Assignment of EPA Hazardous Waste Numbers
M001	Burial Ground Records and TWPD forms
M002	29-90 Forms
M003	Go West Database
M005	The 773-A TRU Waste Assay System, Proc. 773A-TO1-001
M006	Process Flow Diagrams
M007	Analysis Performed/Chemicals used (pages from lab notebook)
M008	Request/Approval for Deviation to SRS Waste Acceptance Criteria Manual

Source Document Number	Title
M009	Request/Approval For Deviation to SRS Waste Acceptance Criteria Manual
M010	High-Efficiency Particulate Air (HEPA) Filter, Fire-Resistant
M011	High-Efficiency Particulate Air (HEPA) Filter, Fire-Resistant (250 degrees min), Cylindrical
M012	Test Method C1204-91 (1996) Standard Test Method for Uranium in the Presence of Plutonium by Iron (II) Reduction in Phosphoric Acid Followed by Chromium (VI) Titration
M013	Test Method C1267-00 Standard Test Method for Uranium by Iron (II) Reduction in Phosphoric Acid Followed by Chromium (VI) Titration in the Presence of Vanadium
M014	Savannah River Site Chemical Inventory
M015	CIIS Inventory Downloaded 3/20/97 (from 1996 Inventory)
M016	Chemicals Received for Disposal (from SRTC) 1999 – 2002
M017	Specifications For TRU Waste Drums/Filter Vents
M018	Savannah River Site ATLAS Including Off Site Locations and Building Index
M019	Procurement Specification for 90 Mil Polyethylene Drum Liner/Lid
M020	Procurement Specification for 55 Gallon Painted Steel Drum
M021	Procurement Specification for 3/4 Inch Diameter Drum Filter Vents (U)
M022	773A 29-90 WMP calculations
M023	773A TWDP Vol. % calculations
M024	Radiological Evaluation for 773-A
M025	Discussion of NDA Issues
M026	Calculations of Weight Percent Organic Liquids in Debris Waste Drums
M027	Summary of Chemicals in Building 773-A
M028	Acceptable Knowledge Payload Management Calculations for CCP-SRS AK Reports 1 through 7, Blair Becker
M029	Acceptable Knowledge Beryllium Assessment for CCP-SRS AK Reports 1 through 7, Blair Becker
M030	Email from Jeff Lunsford. SRS Inventory Update
M031	Evaluation of Additional Containers for SRS-7 Waste Stream SR-W027-773A-HET
M032	BGR/TWPD/29-90 Forms for 8/9/06 Drum Additions
M033	Evaluation of 10 Additional Containers for SRS-7 Waste Stream SR-W027-773A-HET

Source Document Number	Title
M034	BGRs, TWPDs, and SRS Quick Scan Data Sheets for 10 Drums added to HET Waste Stream on 01/04/2008
M035	Environmental Evaluation Checklists
M036	Evaluation of Additional Containers for SRS-7 Waste Stream SR-W027-773A-HET (46 Drums)
M037	TWPDs for 46 Drums added to HET Waste Stream
M038	Dual Port Transfer Exchange Information
M039	Evaluation of Additional Containers for SRS - 7 Waste Stream SR-W027-773A-HET
M040	TRU Waste Container Characterization Forms (OSR 29-90) for Drum Additions to Waste Stream SR-W027-773A-HET
M041	SRTC Transuranic Waste Spreadsheets
M044	BGR Forms for SR-W027-773A-HOM Containers
M045	BGR/TWPD/29-90 Forms for Boxes added to SR-W027-773A-HET
P001	Savannah River Plant, Management of Solid Radioactive Waste/Radiation and Contamination Control Includes DPSOP 40: Burial Container Limits
P002	Disposal of Contaminated Waste
P003	Operating Procedures for Plutonium Glove Box Facility (PuGBF)
P004	Revised P/M Operating Procedures (Fab Lab)
P005	Technical Standards Master Copy
P006	Savannah River Technology Center Transuranic Radioactive Waste Procedure
P007	773-A Nuclear Materials Accountability Plan
P008	Waste Handling
P009	Decontamination of Building and Equipment
P010	Radioactive Waste Disposal-SRL
P011	Procedure for Processing Waste Through the Transuranic Waste Monitor
P012	Separation of Trace Plutonium from Uranium for Subsequent Analysis
P013	Plutonium: Coulometric Method
P014	Plutonium TTA Extraction and Alpha Analysis
P015	Strontium Precipitation Preparation for Liquid Scintillation Counting
P016	Automatic Determination of Hydroxide, Aluminate, and Carbonate in Alkaline Solutions of Nuclear Waste
P017	Determination of Uranium by Davies-Gray Titration, Automation Titration Method

Source Document Number	Title
P018	Gross Alpha Activity (Direct Mount)
P019	Sodium Bicarbonate Determination
P020	Cesium Removal by Precipitation
P021	Storage of Strong Oxidizing Agents in Plastic Containers (U)
P022	ADS Radiologically Controlled Area (RCA) Rules and Work Practices (U)
P023	Disposal of HPLC Analytical Residue (U)
P024	Procedure for Hydride Generation/Atomic Absorption (U)
P025	Destruction of ITP Sample Residue by Permanganate Oxidation Operating Procedure and Waste Analysis Plan (U)
P026	Tritium in High Activity Solutions by Liquid Scintillation
P027	Aqua Regia Dissolution of Sludge for Elemental Analysis (u)
P028	Oxalic Acid (Permanganate Volumetric Method), Vol. 1
P029	VI. Air Filter Systems-SRL
P030	Californium Neutron Source Preparation
P031	Add WIPP Waste Procedure
P032	TRU/WIPP Waste (U)
P033	Analytical Development Section WIPP Waste Procedure (U)
P034	Chemical Technology Group WIPP Waste Procedure
P035	Segregation of SRTC/SSD Radioactive Wastes (U)
P036	Shielded Cells, Glovebox, Glove and Bag Maintenance
P037	Glovebox Gloves and Bagout Bag Change Procedure
P038	Operating Manual for Savannah River Laboratory High Level Caves, Building 773-A
P039	Bulk Waste Removal
P040	Packaging and Shipping of Solid Radioactive Waste TRU Waste Drum
P041	Technical Manual Curium Processing in the High Level Caves
P042	Curium Processing/High Level Caves, Chapter III Process Directions
P043	Technical Manual Master Copy Am-Cm Target Fabrication
P044	Transuranic Waste Characterization Plan
P045	Deleted

Source Document Number	Title
P046	TRU Drum remediation Process
P047	Glovebox Gloves Change Procedure
P048	Absorbing Containerized Liquids
P049	Absorbing Containerized Liquids
P050	Transuranic (TRU) Waste Repackaging in H-Canyon
U001	Chronological History of the TRU Drum Vent Filter