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NMED
Hazardous Waste Bureau

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

AUG 12 2013

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 Program Waste Stream Profile Form Number SR-SWMF-HET-B, *Contaminated Clean-Up Debris from the Solid Waste Management Facility*

Dear Mr. Kieling:

The Department of Energy, Carlsbad Field Office has approved the Waste Stream Profile Form (WSPF) Number SR-SWMF-HET-B, *Contaminated Clean-Up Debris from the Solid Waste Management Facility* for the Central Characterization Program at the Savannah River Site.

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
C. Smith, NMED	ED
RCRA Chronology Record	ED
WIPP Operating Record	ED
CBFO M&RC	

*ED denotes electronic distribution

130815

CBFO:NTP:JRS:GL:13-0686:UFC 5900.00

Attachment 2 – CCP Waste Stream Profile Form

(1) Waste Stream Profile Number: SR-SWMF-HET-B					
(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 32, October 25, 2012					
(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-SWMF-HET-B			(11) Summary Category Group: S5000		
(12) Waste Matrix Code Group: Heterogeneous Debris Waste			(13) Waste Stream Name: Contaminated Clean-Up Debris from the Solid Waste Management Facility		
(14) Description from the ATWIR: Solid Waste Management Facility debris resulting from spill cleanup activities.					
(15) Defense TRU Waste: YES	X	NO			
(16) Check One: CH	X	RH			
(17) Number of SWBs: NA (17a) Number of SLB2: NA	(18) Number of Drums: 6 55-gallon drums			(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: D004, D005, D006, D007, D008, D009, D010, D011, D019, D022, D027, D028, D029, D043, F002, F004, F005 and U133					
(22) Applicable TRUCON Content Numbers: SR 125 / SR 225, SQ 154					
(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-12, Revision 7, April 16, 2013, Figures 1 and 2					
(23B) Facility mission description: CCP-AK-SRS-12, Revision 7, April 16, 2013, Section 4.1.3					
(23C) Description of operations that generate waste: CCP-AK-SRS-12, Revision 7, April 16, 2013, Section 4.3					
(23D) Waste identification/categorization schemes: CCP-AK-SRS-12, Revision 7, April 16, 2013, Section 4.5					
(23E) Types and quantities of waste generated: CCP-AK-SRS-12, Revision 7, April 16, 2013, 2012, Section 4.7					
(23F) Correlation of waste streams generated from the same building and process, as applicable: CCP-AK-SRS-12, Revision 7, April 16, 2013, Section 4.6.2					
(24) Waste certification procedures: CCP-TP-030, Revision 31, November 19, 2012					
(25) Required Waste Stream Information					
(25A) Area(s) and building(s) from which the waste stream was generated: CCP-AK-SRS-12, Revision 7, April 16, 2013, Section 6.1					
(25B) Waste stream volume and time period of generation: CCP-AK-SRS-12, Revision 7, April 16, 2013, Section 6.2					

(25C) Waste generating process description for each building: CCP-AK-SRS-12, Revision 7, April 16, 2013, Section 6.3			
(25D) Waste Process flow diagrams: NA			
(25E) Material inputs or other information identifying chemical/radionuclide content and physical waste form: CCP-AK-SRS-12, Revision 7, April 16, 2013, Section 6.4			
(25F) Waste Material Parameter Weight Estimates per unit of waste: See table entitled "Waste Stream SR-SWMF-HET-B Waste Material Parameters" in Summation of Aspects of AK Summary Report: Waste Stream SR-SWMF-HET-B			
(26) Which Defense Activity generated the waste:			
	Weapons activities including defense inertial confinement fusion		Naval Reactors development
	Verification and control technology		Defense research and development
X	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: NA			
(27B) Standard operating procedures: See P003, P007, P019, P025, P030, P038, P039 and P045 in Summation of Aspects of AK Summary Report: Waste Stream SR-SWMF-HET-B, Source Documents			
(27C) Safety Analysis Reports: See D001, D003, D004, D005 and D018 in Summation of Aspects of AK Summary Report: Waste Stream SR-SWMF-HET-B, Source Documents			
(27D) Waste packaging logs: See M022 and M029 in Summation of Aspects of AK Summary Report: Waste Stream SR-SWMF-HET-B, Source Documents			
(27E) Test plans/research project reports: NA			
(27F) Site databases: See M025 in Summation of Aspects of AK Summary Report: Waste Stream SR-SWMF-HET-B, Source Documents			
(27G) Information from site personnel: See C054, C072 and C078 in Summation of Aspects of AK Summary Report: Waste Stream SR-SWMF-HET-B, Source Documents			
(27H) Standard industry documents: NA			
(27I) Previous analytical data: See C068, C078, D020, DR005, P048, P049 and P050 in Summation of Aspects of AK Summary Report: Waste Stream SR-SWMF-HET-B, Source Documents			
(27J) Material safety data sheets: See C006 in Summation of Aspects of AK Summary Report: Waste Stream SR-SWMF-HET-B, Source Documents			
(27K) Sampling and analysis data from comparable/surrogate Waste: NA			
(27L) Laboratory notebooks: NA			
Confirmation Information			
For the following, when applicable, enter procedure title(s), number(s) and date(s)			
(28)	Radiography: CCP-TP-053, Revision 12, August 22, 2012		
	Visual Examination: NA		

(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: 4/30/2013

Reviewed by STR (if necessary): YES [X] N/A [ ] Date: 4/30/2013

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.

Mike Ramirez for B. Schrock	Beverly Schrock	8/2/2013
Signature of Site Project Manager	Printed Name	Date

CHARACTERIZATION INFORMATION SUMMARY

WSPF #: SR-SWMF-HET-B

Lot #: 1

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CCP Characterization Information Summary Cover Page

Waste Stream #	SR-SWMF-HET-B	Lot #:	1
AK Expert Review:	N/A	Date:	N/A
SPM Review:	Joshua Houghton	Date:	6/27/2013

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. 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. 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-053	Rev. 12	08/22/12	CCP Standard Real-Time Radiography (RTR) Inspection Procedure

Headspace Gas Sampling and Analysis (HSG):

CCP-TP-093	Rev. 16	09/07/11	CCP Sampling of TRU Waste Containers
CCP-TP-093	Rev. 17	11/20/12	CCP Sampling of TRU Waste Containers
CCP-TP-106	Rev. 7	12/29/10	CCP Headspace Gas Sampling Batch Data Report Preparation
CCP-TP-106	Rev. 8	02/04/13	CCP Headspace Gas Sampling Batch Data Report Preparation
CCP-TP-175	Rev. 3	08/02/11	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

Project Level Data Validation / DQO Reconciliation:

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-001	Rev. 20	09/27/12	CCP Project Level Data Validation and Verification
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-002	Rev. 25	02/11/13	CCP Reconciliation of DQOs and Reporting Characterization Data
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-003	Rev. 19	11/02/12	CCP Data Analysis for S3000, S4000, and S5000 Characterization
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	06/06/06	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. 29	04/26/11	CCP CH TRU Waste Certification and WWIS/WDS Data Entry
CCP-TP-030	Rev. 30	05/21/12	CCP CH TRU Waste Certification and WWIS/WDS Data Entry
CCP-TP-030	Rev. 31	11/19/12	CCP CH TRU Waste Certification and WWIS/WDS Data Entry

WAP Certification:

CCP-PO-001	Rev. 17	08/22/09	CCP Transuranic Waste Characterization Quality Assurance Project Plan
CCP-PO-001	Rev. 18	08/29/10	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. 26	07/14/11	CCP Transuranic Waste Certification Plan
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-PO-004	Rev. 31	10/01/12	CCP/SRS Interface Document
CCP-PO-004	Rev. 32	10/25/12	CCP/SRS Interface Document

ETS-002

CCP Correlation of Container Identification Numbers to Batch Data Report Numbers

Waste Stream # SR-SWMF-HET-B

Lot # 1

Container ID Number	NDA BDR	RTR BDR	VE BDR	Solids Sampling BDR	Solids Analytical BDR	Load Management/ Overpack Yes	Headspace Gas BDR		
							Sample	Analysis	
SR108180	SRLBC0706	SRSRTR0573	N/A	N/A	N/A	N/A	SRHSG1211	ECL12019M	N/A
SR607474	SRLBC0900	SRLBR0069	N/A	N/A	N/A	N/A	SRSHSG1302	ECL13002M	N/A
SR607480	SRLBC0851	SR4RTR0291	N/A	N/A	N/A	N/A	SRSHSG1301	ECL13001M	N/A
SR607482	SRLBC0851	SR4RTR0291	N/A	N/A	N/A	N/A	SRSHSG1301	ECL13001M	N/A
SR607486	SRLBC0861	SRLBR0069	N/A	N/A	N/A	N/A	SRSHSG1301	ECL13001M	N/A
SR79150*	SRLBC0707	SR4RTR0256	N/A	N/A	N/A	N/A	SRHSG1211	ECL12019M	N/A
SR79177*	SRLBC0706	SR4RTR0257	N/A	N/A	N/A	N/A	SRHSG1211	ECL12019M	N/A
SR79178*	SRLBC0707	SRSRTR0573	N/A	N/A	N/A	N/A	SRHSG1211	ECL12019M	N/A
SR79179*	SRLBC0763	SRSRTR0577	N/A	N/A	N/A	N/A	SRHSG1211	ECL12019M	N/A
SR79182*	SRLBC0689	SR4RTR0256	N/A	N/A	N/A	N/A	SRHSG1211	ECL12019M	N/A
SR92624*	SRLBC0707	SR4RTR0256	N/A	N/A	N/A	N/A	SRHSG1211	ECL12019M	N/A
SR92625*	SRLBC0689	SRSRTR0573	N/A	N/A	N/A	N/A	SRHSG1211	ECL12019M	N/A

*These containers were found to be low level waste when assayed and are no longer active in this waste stream. The HSG data is still valid for RCRA hazardous waste code determination and are included in the UCL90 calculations. They are kept on the Cross Correlation for completeness.

Signature of Site Project Manager

Joshua Houghton
Printed Name

6/27/2013
Date

CIS-003

CCP Headspace Gas UCL_{90} Evaluation Form

WSPF #: SR-SWMF-HET-B

Waste Stream 1 through 1
Headspace Gas Lot

ANALYTE	Transform Data Used (No, Data-Log, SQRT, other)	# Samples above MDL (1)	# Samples (3)	Maximum (ppmv)	Mean (ppmv)	SD (ppmv)	UCL_{90} (ppmv)	PRQL (ppmv)	Transformed PRQL (ppmv)	UCL_{90} > PRQL Yes	EPA Code
Acetone	Log	12	12	4.79	1.64	2.02	2.43	100.00	4.61		
Benzene	Log	5	12	1.56	-1.10	1.45	-0.52	10.00	2.30		
Bromoform	Log	0	12	0.22	-3.17	1.58	-2.55	10.00	2.30		
Butanol	Log	6	12	2.12	-0.47	2.06	0.34	100.00	4.61		
Carbon Disulfide[e]	SQRT	1	11	0.95	0.46	0.27	0.57	10.00	3.16		
Carbon Tetrachloride	Log	0	12	0.85	-2.53	1.58	-1.91	10.00	2.30		
Chlorobenzene	Log	0	12	1.19	-2.23	1.61	-1.59	10.00	2.30		
Chloroform	Log	0	12	1.13	-2.23	1.56	-1.62	10.00	2.30		
Chloromethane[e]	SQRT	0	11	0.97	0.47	0.28	0.59	10.00	3.16		
Cyclohexane[e]	Log	3	12	1.49	-1.46	1.48	-0.88	10.00	2.30		
1,1-Dichloroethane	Log	0	12	1.41	-1.97	1.59	-1.35	10.00	2.30		
1,2-Dichloroethane	Log	0	12	1.42	-1.98	1.60	-1.35	10.00	2.30		
1,1-Dichloroethylene	Log	0	12	1.48	-1.94	1.62	-1.30	10.00	2.30		
cis-1,2-Dichloroethylene[e]	Log	0	12	1.56	-1.89	1.64	-1.24	10.00	2.30		
trans-1,2-Dichloroethylene	Log	0	12	1.49	-1.93	1.63	-1.29	10.00	2.30		
1,2-Dichloropropane[e]	Log	0	12	1.25	-2.16	1.61	-1.53	10.00	2.30		
Ethyl benzene	Log	6	12	5.01	-0.31	3.53	1.08	10.00	2.30		
Ethyl Ether	SQRT	0	11	0.92	0.43	0.27	0.54	10.00	3.16		
Methanol	Log	6	12	5.48	0.68	1.91	1.43	100.00	4.61		
Methyl Ethyl Ketone	Log	1	12	1.70	-1.64	1.56	-1.03	100.00	4.61		
Methyl Isobutyl Ketone	Log	1	12	1.35	-1.98	1.56	-1.36	100.00	4.61		
Methylene Chloride	Log	0	12	1.61	-1.80	1.62	-1.16	10.00	2.30		
1,1,2,2-Tetrachloroethane	Log	0	12	0.83	-2.60	1.62	-1.96	10.00	2.30		
Tetrachloroethylene	Log	1	12	1.05	-2.35	1.62	-1.71	10.00	2.30		
Toluene	Log	8	12	3.04	-0.04	2.00	0.74	10.00	2.30		
1,1,1-Trichloroethane	Log	1	12	0.94	-2.04	1.74	-1.35	10.00	2.30		
Trichloroethylene	Log	4	12	1.10	-1.94	1.68	-1.28	10.00	2.30		
Trichlorofluoromethane[e]	Log	0	12	1.06	-2.33	1.59	-1.70	10.00	2.30		

CIS-004

CCP Headspace Gas UCL_{90} Evaluation Form

WSPF #: SR-SWMF-HET-B **Waste Stream** 1 through 1
Headspace Gas Lot

ANALYTE	Transform Data Used (No, Data-Log, SQRT, other)	# Samples above MDL (1)	# Samples (3)	Maximum (ppmv)	Mean (ppmv)	SD (ppmv)	UCL_{90} (ppmv)	PRQL (ppmv)	Transformed PRQL (ppmv)	UCL_{90} > PRQL Yes	EPA Code
1,1,2-Trichloro-1,2,2-trifluoroethane	Log	0	12	0.77	-2.62	1.58	-2.00	10.00	2.30		
1,3,5-Trimethylbenzene[a]	Log	0	12	1.03	-2.36	1.59	-1.73	10.00	2.30		
1,2,4-Trimethylbenzene[a]	Log	0	12	1.10	-2.33	1.62	-1.69	10.00	2.30		
m/p-Xylene[b]	Log	8	12	6.38	0.70	4.18	2.34	10.00	2.30	Yes	(2)
o-Xylene	SQRT	8	12	13.42	3.54	4.20	5.19	10.00	3.16	Yes	(2)
Formaldehyde[c]	N/A	N/A	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	N/A	N/A

[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] The noted analytes are not included in the target analyte list Table C3-2 of HWFP Attachment C3. The analytes are reported in the analysis Batch Data Report provided by the Idaho lab and included on the UCL90 for completeness.

CLS-005

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.)

(2) Per AK - Several F003-listed solvents were identified in the facilities where the spills originated. However, F003-listed solvents are listed solely for ignitability, and this waste stream does not exhibit the characteristic of ignitability because the solvents are not in liquid form. Therefore, waste stream SR-SWMF-HET-B is not an F003-listed hazardous waste.

(3) Due to dilution requirements, 1 of the 12 samples for Carbon Disulfide, Chloromethane, and Ethyl Ether were reported as non detected with an MDL value in excess of the PRQL. In accordance with the Waste Analysis Plan, Section C4-3e such observations with elevated MDL values due to dilution were not used in calculating the mean concentration. Consequently, the subject analytes were evaluated with 11, rather than 12, usable observations.

Note:

This UCL_{90} page was generated in compliance with CCP-TP-003. Although the the Facility Permit no longer requires Headspace Gas sampling and analysis, the reporting of the results is required by our procedures.

Signature of Site Project Manager | Joshua Houghton (Printed Name) | 6/27/2013 (Date)

CCP Headspace Gas Summary Data

Waste Stream # SR-SWMF-HET-B Lot Number (s) 1

Tentatively Identified Compound	Maximum Observed Estimated Concentrations (ppmv)	# Samples Containing TIC	% Detected
2-Ethoxyethanol	510.00	6.00	50.00%
2-Nitropropane	14.00	1.00	8.33%
1,4-Dioxane	0.50	1.00	8.33%

Note - 2-Ethoxyethanol was present in over 25% of the samples. 2-Ethoxyethanol will be added to the target analyte list for any additional containers that require sampling from this waste stream. 2-Ethoxyethanol carries a Hazardous Waste Number (HWN) of F005. Per SRS-12-DR006, HWN F005 was not added to this constituent due to all containers with detectable concentrations of 2-Ethoxyethanol have been removed from the waste stream.

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 6/27/2013

CIS-006

CCP RTR/VE Summary of Prohibited Items and AK Confirmation

Waste Stream #: SR-SWMF-HET-B Lot #: 1

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.	VE was not used to certify any containers in this Lot.

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 for this lot because the waste was previously packaged and RTR meets all the Data Quality Objectives for NDE for the waste.

Site Project Manager Signature	Joshua Houghton Printed Name	6/27/2013 Date

CIS-007

CCP Reconciliation with Data Quality Objectives

Waste Stream #: SR-SWMF-HET-B Lot #: 1

Sampling Completeness:

NDE

Number of Valid Samples: 12 Number of Total Samples Analyzed: 12
Percent Complete: 100 (QAO is 100%)

NDA

Number of Valid Samples: 12 Number of Total Samples Analyzed: 12
Percent Complete: 100 (QAO is 100%)

HSG (Random Sampling Lot 1)

Number of Valid Samples: 12 Number of Total Samples Collected: 12
Percent Complete: 100 (QAO is ≥90%)
Number of Valid Samples: 12 Number of Total Samples Analyzed: 12
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%)

CFS-008

CCP Reconciliation with Data Quality Objectives

Waste Stream #: SR-SWMF-HET-B Lot #: 1

	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 HW Numbers 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.

CIS-009

CCP Reconciliation with Data Quality Objectives

Waste Stream #: SR-SWMF-HET-B Lot #: 1

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	NA	NA	NA
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

Signature of Site Project Manager | Joshua Houghton (Printed Name) | 6/27/2013 (Date)

CIS-010

Summation of Aspects of AK Summary Report: Waste Stream SR-SWMF-HET-B

Overview

Waste stream SR-SWMF-HET-B is comprised of job control waste including bag filters from solvent tank closure and concrete from cleanup and remediation of spills in and around the burial grounds associated with Pad 2 at SRS in Aiken, South Carolina. The waste is currently stored at the SRS E-Area TRU waste storage pads. Specific items in this waste stream may include job control waste (e.g., rags, plastic and wood from a containment hut), concrete, bag filters, and waste from a 100 ton low-boy trailer. Source documents state that about 10 square feet of the metal side and support beams and six wooden boards of the low-boy trailer being used to transport a box were contaminated. It is assumed the debris containers in waste stream SR-SWMF-HET-B also contain this contaminated waste. Small amounts of contaminated soil and absorbed liquid may also be present (References C057, C058, C059, C063, C077, M022, M029, P018, P019, P020, P022, P025, and P026).The mission of the Solid Waste Management Facility (SWMF) is to provide treatment, storage, and disposal of radioactive wastes generated as a result of the production of nuclear materials for United States Defense Programs and as a result of environmental remediation and regulatory compliance operations conducted at the Savannah River Site (SRS), Mound in Miamisburg, Ohio, and Allied-General Nuclear Services in Barnwell, South Carolina. The specific mission of the Transuranic (TRU) Waste Visual Examination Facility/Mixed Waste Processing Facility (TVEF/MWPF), the Modular Repackaging System (MRS)/Modular Repackaging Unit (MORK), and the F-Area Repackaging Enclosures is to visually examine the contents of selected TRU waste drums and the removal of prohibited items for the purpose of supporting the shipment of TRU waste to the Waste Isolation Pilot Plant (WIPP).

The WIPP-WAC requires generator sites to use AK to determine if the TRU waste streams to be disposed at WIPP meet the definition of TRU "defense" waste. Based on guidance from the U.S. Department of Energy (DOE), a TRU waste is eligible for disposal at WIPP if it has been generated in whole or part by one of the atomic energy defense activities listed in Section 10101(3) of the Nuclear Waste Policy Act of 1982 (NWPA). The TVEF/MWPF, MORK, and F-Area Repackaging Enclosures visually examine and remove prohibited items from TRU waste that originated in other SRS facilities, as well as off-site facilities that produced defense TRU waste. Similar to waste stream SR-SWMF-HET-A, the waste in wastes stream SR-SWMF-HET-B resulted from the spill cleanup and remediation of leaking containers of defense-related TRU waste that originated in other SRS facilities and closure of the solvent storage tanks. Therefore, the atomic energy defense activity that applies to waste stream SR-SWMF-HET-B is "defense nuclear waste and materials by-products management" This summation of the Acceptable Knowledge (AK) Summary Report includes information to support Waste Stream Profile Form (WSPF) number SR-SWMF-HET-B for contaminated debris from the SWMF. The primary source of information for this Summation is CCP-AK-SRS-12, *Central Characterization Program Acceptable Knowledge Summary Report for Savannah River Site Solid Waste Management Facility, Waste Streams: SR-SWMF-HET-A, SR-SWMF-HET-B,* Revision 7, April 16, 2013.

Waste Stream Identification Summary

Waste Stream Name:	Contaminated Clean-Up Debris from the Solid Waste Management Facility
Waste Stream Number:	SR-SWMF-HET-B

Dates of Waste Generation:	August 1976 to December 1995
Waste Stream Volume – Current:	6 55-gallon drums
Waste Stream Volume – Projected:	None expected
Summary Category Group:	S5000
Waste Matrix Code Group:	Heterogeneous Debris Waste
Waste Matrix Code:	S5400, Heterogeneous Debris
TRUPACT-II Content Code:	SR 125 / 225, SQ 154
Annual Transuranic Waste Inventory Report (ATWIR) Identification Number:	SR-SWMF-HET-B

Waste Stream Description and Physical Form:

The waste in waste stream SR-SWMF-HET-B resulted from activities conducted at the SWMF (such as solvent tank closure), and the cleanup and remediation of leaking containers at the SWMF TRU Pad 2 in the Old Burial Ground (Building 643G) which is now known as the E-Area of the SRS SWMF. Debris waste items in this waste stream may include filters, concrete, metal siding and support beams, plastic and wood from a containment hut, rags, and wood boards. Small amounts of contaminated soil and absorbed liquid may also be present (References C057, C058, C059, C063, C077, M022, M029, P018, P019, P020, P022, P025, and P026).

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. One waste stream (SR-SWMF-HET-B) has been delineated for TRU debris waste generated at the SWMF during spill cleanup and remediation.

Point of Generation

Location

Waste stream SR-SWMF-HET-B was generated at SRS in Aiken, South Carolina. The waste is currently stored at the SRS E-Area TRU waste storage pads.

Area and/or Buildings of Generation

Waste stream SR-SWMF-HET-B is comprised of job control waste including bag filters from solvent tank closure and concrete from cleanup and remediation of spills in and around the burial grounds associated with Pad 2. Specific items in this waste stream may include job control waste (e.g., rags, plastic and wood from a containment hut), concrete, and waste from a 100 ton low-boy trailer. Source documents state that about 10 square feet of the metal side and support beams and six wooden boards of the low-boy trailer being used to transport a box were contaminated. It is assumed the debris containers in waste stream SR-SWMF-HET-B also

contain this contaminated waste. Small amounts of contaminated soil and absorbed liquid may also be present (References C057, C058, C059, C063, C077, M022, M029, P018, P019, P020, P022, P025, and P026).

Generating Processes

Description of Waste Generation Processes

The waste in waste stream SR-SWMF-HET-B resulted from activities conducted at the SWMF (such as solvent tank closure), and the cleanup and remediation of leaking containers at the SWMF TRU Pad 2 in the Old Burial Ground (Building 643G) which is now known as the E-Area of the SRS SWMF. Descriptions of these operations are provided below. (References C056, C057, C058, C059, C064, C065, C066, D001, D002, D003, D004, and D005).

This waste stream includes TRU waste that was generated at the SWMF. The SWMF includes solvent storage tanks that have been closed and filled with grout. The solvent storage tanks contained waste from the Separations PUREX process and may have contained liquids originating from the Savannah River National Laboratory (SRNL) and Building 772-F. In the radiochemical separations process, quantities of organic solvent are degraded by exposure to radiation and by accumulation of radionuclides. When solvent (typically tributyl phosphate in n-paraffin with residuals of uranium, plutonium, and fission products), is no longer usable in the process, it is washed to remove as much radionuclide contamination as possible and then sent to the tanks for disposal. When the tanks were closed the materials in the tanks were transferred out of the tank, and the tanks were triple rinsed for RCRA closure. The waste stream includes the bag filters that were used during RCRA closure of the tanks. Rinse water and a nonhazardous cleaner were recycled through a trailer-mounted filter unit. The filter bags were placed into lead-lined drums for disposal (References C078, D020, M029, P048, P049, and P050).

A leaking TRU waste container generated at SRNL and stored on TRU Pad 2 as described in DPSP 79-1-8 (Reference C064) was retrieved. The leaking container had been suspected (as evidenced by "low level alpha contamination detected in the pad drainage collection sump shortly after it was stored") since September 1976. It was not found and retrieved until August 1979 (References C056, C063, and C064).

Based on the close proximity of the Incident Date (as described in DPSPU 76-272-367, Separations Incident, SI-76-108 [Reference C058]) to the date on the burial ground record it is believed this waste resulted from clean-up and remediation of the spill. The debris waste in this stream described as "Waste from 100T Low Boy" is consistent with the mention of a low-boy trailer that was contaminated. The spilled liquid originated from an H-Canyon collection tank fed by nitric acid raffinate and decon solutions (Reference C058, C063, and C072).

Waste Stream Material and Chemical Inputs

EPA HWNs were assigned to waste stream SR-SWMF-HET-B based on a review of the EPA HWNs assigned to the TRU waste generated in the SWMF and in the facilities where liquids contained in the spills may have originated, namely H-Canyon, HB-Line, and SRNL.

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-SWMF-HET-B

Chemical	Environmental Protection Agency (EPA) Hazardous Waste Numbers (HWN)s	Usage	References
Arsenic	D004	Constituents in the solvent tank samples; cleanup and remediation waste resulting from spills	C077, DR004, M001, M013, M014, M016, M029, P005, P008, and P009
Barium	D005	Constituents in the solvent tank samples; cleanup and remediation waste resulting from spills	C077, DR004, M001, M013, M014, M016, M029, P005, P008, and P009
Cadmium	D006	Constituents in the solvent tank samples; cleanup and remediation waste resulting from spills	C077, DR004, M001, M013, M014, M016, M029, P005, P008, and P009
Chromium	D007	Constituents in the solvent tank samples; cleanup and remediation waste resulting from spills	C077, DR004, M001, M013, M014, M016, M029, P005, P008, and P009
Lead	D008	Constituents in the solvent tank samples; cleanup and remediation waste resulting from spills	C077, DR004, M001, M013, M014, M016, M029, P005, P008, and P009
Mercury	D009	Constituents in the solvent tank samples; cleanup and remediation waste resulting from spills	C077, DR004, M001, M013, M014, M016, M029, P005, P008, and P009
Selenium	D010	Constituents in the solvent tank samples; cleanup and remediation waste resulting from spills	C077, DR004, M001, M013, M014, M016, M029, P005, P008, and P009
Silver	D011	Constituents in the solvent tank samples; cleanup and remediation waste resulting from spills	C077, DR004, M001, M013, M014, M016, M029, P005, P008, and P009
Carbon Tetrachloride	D019	Cleanup and remediation waste resulting from spills	C008, C009, C069, C070, D001, D002, DR004, M022, and

Chemical	Environmental Protection Agency (EPA) Hazardous Waste Numbers (HWN)s	Usage	References
			M025
Chloroform	D022	Cleanup and remediation waste resulting from spills	C008, C009, C069, C070, D001, D002, DR004, M022, and M025
1,4-Dichlorobenzene	D027	Cleanup and remediation waste resulting from spills	C008, C009, C069, C070, D001, D002, DR004, M022, and M025
1,2-Dichloroethane	D028	Cleanup and remediation waste resulting from spills	C008, C009, C069, C070, D001, D002, DR004, M022, and M025
1,1-Dichloroethylene	D029	Cleanup and remediation waste resulting from spills	C008, C009, C069, C070, D001, D002, DR004, M022, and M025
Vinyl Chloride	D043	Cleanup and remediation waste resulting from spills	C008, C009, C069, C070, D001, D002, DR004, M022, and M025
Chlorobenzene	F002	Constituents in the solvent tank samples and the cleanup and remediation waste resulting from spills	C001, C002, C008, C009, C069, C070, DR004, M022, and M025
ortho-Dichlorobenzene	F002	Constituents in the solvent tank samples and the cleanup and remediation waste resulting from spills	C001, C002, C008, C009, C069, C070, DR004, M022, and M025
Methylene chloride	F002	Constituents in the solvent tank samples and the cleanup and remediation waste resulting from spills	C001, C002, C008, C009, C069, C070, DR004, M022, and M025
Tetrachloroethylene	F002	Constituents in the solvent tank samples and the cleanup and remediation waste resulting from spills	C001, C002, C008, C009, C069, C070, DR004, M022, and M025
1,1,1-Trichloroethane	F002	Constituents in the solvent tank samples and the cleanup and remediation	C001, C002, C008, C009, C069, C070, DR004, M022, and

Chemical	Environmental Protection Agency (EPA) Hazardous Waste Numbers (HWN)s	Usage	References
		waste resulting from spills	M025
1,1,2-Trichloroethane	F002	Constituents in the solvent tank samples and the cleanup and remediation waste resulting from spills	C001, C002, C008, C009, C069, C070, DR004, M022, and M025
Trichloroethylene	F002	Constituents in the solvent tank samples and the cleanup and remediation waste resulting from spills	C001, C002, C008, C009, C069, C070, DR004, M022, and M025
1,1,2-Trichloro-1,2,2-trifluorethane	F002	Constituents in the solvent tank samples and the cleanup and remediation waste resulting from spills	C001, C002, C008, C009, C069, C070, DR004, M022, and M025
Nitrobenzene	F004	Constituents in the solvent tank samples and the cleanup and remediation waste resulting from spills	C001, C002, C008, C009, C069, C070, DR004, M022, and M025
Benzene	F005	Constituents in the solvent tank samples and the cleanup and remediation waste resulting from spills	C001, C002, C008, C009, C069, C070, DR004, M022, and M025
Carbon disulfide	F005	Constituents in the solvent tank samples and the cleanup and remediation waste resulting from spills	C001, C002, C008, C009, C069, C070, DR004, M022, and M025
Methyl ethyl ketone	F005	Constituents in the solvent tank samples and the cleanup and remediation waste resulting from spills	C001, C002, C008, C009, C069, C070, DR004, M022, and M025
2-Nitropropane	F005	Constituents in the solvent tank samples and the cleanup and remediation waste resulting from spills	C001, C002, C008, C009, C069, C070, DR004, M022, and M025
Pyridine	F005	Constituents in the solvent tank samples and the cleanup and remediation waste resulting from spills	C001, C002, C008, C009, C069, C070, DR004, M022, and M025
Toluene	F005	Constituents in the solvent tank samples and the cleanup and remediation	C001, C002, C008, C009, C069, C070, DR004, M022, and

Chemical	Environmental Protection Agency (EPA) Hazardous Waste Numbers (HWN)s	Usage	References
		waste resulting from spills	M025
Hydrazine	U133	Used during anion exchange in Scrap Recovery and during Np oxalate precipitation at the HB-Line located at the H-Canyon facility in the 200-H Separations Area.	C056, C057, C058, C059, C064, C065, C066, DR004, M022, and M025

RCRA Determinations

Historical Waste Management

Waste from the SWMF 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, a site specific waste stream was not created for spill cleanup and remediation debris waste. Instead the containers were managed individually as hazardous waste with toxicity characteristic and listed HWNs. A review of available AK documentation and container paperwork was performed and it was determined that this waste is hazardous. SRS historically assigned EPA HWNs D004, D005, D006, D007, D008, D009, D010, D019, D021, D022, D027, D028, D035, D038, D039, D040, F001, and F005. HWNs were assigned to waste stream SR-SWMF-HET-B based on a review of the EPA HWNs assigned to the TRU waste generated in the SWMF and in the facilities where the liquids involved in the spills may have originated, namely H-Canyon, HB-Line, and SRNL. Therefore, based upon acceptable knowledge, HWNs D004, D005, D006, D007, D008, D009, D010, D011, D019, D022, D027, D028, D029, D043, F002, F004, F005, and U133 are assigned to waste stream SR-SWMF-HET-B. The above table, Toxicity Characteristic and Listed Constituents in Waste Stream SR-SWMF-HET-B, lists the EPA HWNs assigned to waste stream SR- SWMF-HET-B (References C008, C009, C069, C070, C077, DR004, M022, M025, P005, and P008).

Hazardous Waste Determinations

Ignitability, Corrosivity, Reactivity

The waste material in this waste stream does not meet the definition of ignitable, corrosive, or reactive as defined in Title 40 of the Code of Federal Regulations, Part 261 (40 CFR 261).

Ignitability

The debris materials in waste stream SR-SWMF-HET-B do not meet the definition of ignitability as defined in 40 CFR 261.21. the waste is not liquid, the waste does not spontaneously ignite at standard pressure and temperature through friction, absorption of moisture, or spontaneous

chemical changes; the waste is not an ignitable compressed gas; and there are no oxidizers present that can stimulate combustion. Ignitable liquids were not used in cleanup or remediation (References M022 and M025). The waste is not an oxidizer, and it is not capable of causing fire through friction, absorption of moisture, or spontaneous chemical change. TRU waste was packaged according to waste characterization and certification procedures to meet SRS waste acceptance criteria (References P037, P038, and P039). Prohibited items listed in the SRS Waste Acceptance Criteria (WAC) include ignitable wastes and compressed gases.

Certified Real Time Radiography (RTR) was performed by CCP to ensure the absence of prohibited items. Since absorbed waste is likely included in this waste stream, the presence of prohibited quantities of liquid due to dewatering or incomplete absorption is possible. Any container identified with liquids in excess of amounts allowed by the WIPP-Waste Analysis Plan (WAP) will be segregated from the waste stream and will not be eligible for disposal at WIPP until the prohibited materials are removed and/or remediated. Waste stream SR-SWMF-HET-B is therefore not ignitable and is not assigned EPA HWN D001 (References M022, M025, P002, P004, P005, P006, P007, P008, P009, P010, P019, P021, P022, P025, and P030).

Corrosivity

The debris waste in waste stream SR-SWMF-HET-B is not liquid and does not contain unreacted corrosive chemicals; therefore, it does not meet the definition of corrosivity (D002) as defined in 40 CFR 261.22. Corrosive liquids were not used during spill cleanup and remediation (References M022 and M025). TRU waste was packaged according to waste characterization and certification procedures to meet SRS waste acceptance criteria (References P001, P002, P003, and P037, P038, and P039).

Certified RTR was performed by CCP to ensure the absence of prohibited items. Since absorbed waste is likely included in this waste stream, the presence of prohibited quantities of liquid due to dewatering or incomplete absorption is possible. Any container identified with liquids in excess of amounts allowed by the WIPP-WAP will be segregated from the waste stream and will not be eligible for disposal at WIPP until the prohibited materials are removed and/or remediated. Waste stream SR-SWMF-HET-B is therefore not corrosive and is not assigned EPA HWN D002 (References M022, M025, P002, P004, P005, P006, P007, P008, P009, P010, P019, P021, P022, P025, and P030).

Reactivity

The debris materials in waste stream SR-SWMF-HET-B do not meet the definition of reactivity as defined in 40 CFR 261.23. The waste is stable and will not undergo violent chemical change without detonating. The waste will not react violently with water, form potentially explosive mixtures with water, or generate toxic gases, vapors, or fumes when mixed with water. The waste does not contain reactive cyanide or sulfide compounds. There is no indication that the waste contains explosive materials, and it is not capable of detonation or explosive reaction. TRU waste was packaged according to waste characterization and certification procedures to meet SRS waste acceptance criteria (References P001, P002, P003, and P037, P038, and P039).

Certified RTR was performed by CCP to ensure the absence of prohibited items. Waste stream SR-SWMF-HET-B is therefore not reactive and is not assigned EPA HWN D003 (References M022, M025, P002, P004, P005, P006, P007, P008, P009, P010, P019, P021, P022, P025, and P030).

Toxicity Characteristic

Waste stream SR-SWMF-HET-B is contaminated with toxicity characteristic metal compounds as defined in 40 CFR 261.24. The debris waste is expected to exhibit the characteristic of toxicity for arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver due to the potential presence of these constituents in the solvent tank samples and in cleanup and remediation waste resulting from spills. EPA HWNs were assigned to waste stream SR-SWMF-HET-B based on a review of the EPA HWNs assigned to the TRU waste generated in the SWMF and in the facilities where liquids contained in the spills may have originated, namely H-Canyon, HB-Line, and SRNL. Although D011 was not historically assigned to this waste by SRS, it was historically assigned to the TRU waste generated in the facilities where liquids contained in the spills may have originated. Small amounts of contaminated soil and absorbed liquid from these spills may also be present. Based on historical waste management, HWNs for these constituents were originally assigned to this waste stream by SRS. Since data are not available that demonstrate the concentration of these metals is less than the toxicity characteristic regulatory level, these HWNs have been retained. Therefore, waste stream SR-SWMF-HET-B is assigned EPA HWNs D004, D005, D006, D007, D008, D009, D010, and D011 (References C077, DR004, M001, M013, M014, M016, M029, P005, P008, and P009).

Waste stream SR-SWMF-HET-B is contaminated with toxicity characteristic organic compounds as defined in 40 CFR 261.24. The debris waste is expected to exhibit the characteristic of toxicity for carbon tetrachloride, chloroform, 1,4-dichlorobenzene, 1,2-dichloroethane, 1,1-dichloroethylene, and vinyl chloride due to the potential presence of these constituents in the cleanup and remediation waste resulting from spills. Small amounts of contaminated soil and absorbed liquid from these spills may also be present. Since data are not available that demonstrate the concentration of these organic constituents is less than the toxicity characteristic regulatory level, waste stream SR-SWMF-HET-B is assigned EPA HWNs D019, D022, D027, D028, D029, and D043. (References C008, C009, C069, C070, D001, D002, DR004, M022, and M025).

This waste stream is also contaminated with the toxicity characteristic organic compounds benzene, chlorobenzene, methyl ethyl ketone, nitrobenzene, pyridine, tetrachloroethylene, and trichloroethylene due to the potential presence of these constituents in the solvent tank samples and cleanup and remediation waste resulting from spills. However, since the more specific F-listed EPA HWNs have been assigned for these constituents, EPA HWNs D018, D021, D035, D036, D038, D039, and D040 are not assigned to waste stream SR-SWMF-HET-B. Since the more specific F-listed EPA HWN has been assigned for benzene, chlorobenzene, methyl ethyl ketone, nitrobenzene, pyridine, tetrachloroethylene, and trichloroethylene, assignment of the corresponding toxicity characteristic HWN is not necessary.

Listed Waste

F-Listed Waste

Waste stream SR-SWMF-HET-B contains or is mixed with F-listed hazardous wastes from non-specific sources as listed in 40 CFR 261.3. The debris waste is expected to be contaminated with F-listed constituents in the solvent tank samples and the cleanup and remediation waste resulting from spills. The specific hazardous constituents identified in the source documents as associated with the F-listed HWNs are listed in the table entitled Toxicity Characteristic and Listed Constituents in Waste Stream SR-SWMF-HET-B. Small amounts of contaminated soil

and absorbed liquid from these spills may also be present. Therefore, waste stream SR-SWMF-HET-B is assigned EPA HWNs F002, F004, and F005 (References C001, C002, C008, C009, C069, C070, DR004, M022, and M025).

The 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 (Reference 9). Large-scale degreasing operations were not historically conducted in the facilities where liquids contained in the spills may have originated (References 14, 17). Therefore, waste stream SR-SWMF-HET-B is not an F001-listed hazardous waste.

Several F003-listed solvents were identified in the facilities where liquids contained in the spills may have originated. However, F003-listed solvents are listed solely for ignitability, and this waste stream does not exhibit the characteristic of ignitability because the solvents are not in liquid form. Therefore, waste stream SR-SWMF-HET-B is not an F003-listed hazardous waste.

K-Listed Waste

This waste is not a hazardous waste originating from any of the specific sources listed in 40 CFR 261.32. Therefore, waste stream SR-SWMF-HET-B is not a K-listed hazardous waste.

P- and U-Listed Waste

Based on review of AK relative to chemicals and materials used or present in the waste, Waste stream SR-SWMF-HET-B may contain or is mixed with a discarded unused commercial chemical product, an off-specification commercial chemical product, or a container residue or spill residue thereof as defined in 40 CFR 261.33.

Hydrazine (rather than hydrazine mononitrate) was used during anion exchange in Scrap Recovery and during Neptunium oxalate precipitation at the HB-Line (the source of origin of some of the waste which generated this waste stream). It is possible that pure liquid hydrazine may have contaminated these wastes and, consequently, the spill cleanup residues following significant spill and contamination events in Scrap Recovery. Therefore, U133 for hydrazine is applied to this waste stream. Although hydrazine itself is a reactive chemical, because it was a liquid, it would not have been placed in TRU waste containers without being absorbed, so would not be considered to be explosive or reactive. (Reference CCP-AK-SRS-4, Central Characterization Program Acceptable Knowledge Summary Report For Savannah River Site, Waste Streams: SR-W027-221H-HET, SR-W027-221H-HEPA, SR-W027-HBL-BOX, SR-W027-221H-HET-C, SR-W027-221H-HET-D, SR-W027-221H-HOM), C056, C057, C058, C059, C064, C065, C066, DR004, M022, and M025).

HB-Line managers and technical support personnel stated unambiguously that hydrofluoric acid was never brought into HB-Line as pure chemical or used as a pure chemical in any process, consistent with scrap dissolution procedures; therefore, U134 for hydrofluoric acid will not be applied to this waste stream (Reference M016).

Trace amounts of beryllium may be present in some drums due to past beryllium operations on the site; however, the source documents make no mention of powdered beryllium ever being used (Reference D003). Any beryllium present in this waste stream does not meet the definition of a P015-listed waste. Waste stream SR-SWMF-HET-B is therefore not assigned a P-listed HWN. Debris wastes contaminated during the spill cleanup and remediation would also only

contain trace amounts of beryllium, if present. Therefore, any beryllium present in waste stream SR-SWMF-HET-B will be less than one percent by weight of the waste in any payload container, including ten-drum overpacks (References DR004, M022, and M025).

Polychlorinated Biphenyls

Polychlorinated biphenyls (PCB)s have not been identified in waste stream SR-SWMF-HET-B. Repackaging operations have identified the presence of PCBs in debris waste in two of the containers in waste stream SR-SWMF-HET-A (e.g., PCB light ballasts); however, PCBs are not expected in debris generated during cleanup and remediation. Therefore, this waste stream is not regulated as a Toxic Substances Control Act (TSCA) waste under 40 CFR 761 (References M022 and M025).

Prohibited Items

Certified RTR was performed by CCP to ensure the absence of sealed containers greater than four liters and prohibited quantities of liquid. Since absorbed waste is likely included in this waste stream, the presence of prohibited quantities of liquid due to dewatering or incomplete absorption is possible. Any container identified with liquids in excess of amounts allowed by the WIPP-WAP, or having containers greater than four liters, unpunctured aerosol cans, compressed gas cylinders, or explosives will be segregated from the waste stream and will not be eligible for disposal at WIPP until the prohibited materials are removed and/or remediated (References P002, P004, P005, P006, P007, P008, P009, P010, P019, P021, P022, P025, and P030).

Method for Determining Waste Material Parameter Weights per Unit of Waste

Waste Material Parameter (WMP) data was not available for waste stream SR-SWMF-HET-B. However, a brief description of the contents of each container was available in the source documents (References C063 and C072), and a description of observed waste types was recorded in RTR Quick Screen data sheets provided by SRS.

An evaluation of the data compiled from the source document and RTR Quick Screen data sheets indicates that the waste is predominantly inorganic at about 70 wt%. An evaluation was performed on each container in the current SR-SWMF-HET-B waste stream. The results from this evaluation are presented in the table below, Waste Stream SR-SWMF-HET-B Waste Material Parameters.

Waste Stream SR-SWMF-HET-B Waste Material Parameters

Waste Material Parameter	Avg. Weight Percent	Weight Percent Range
Iron-based Metals/Alloys	27.53%	0 – 84.20%+
Aluminum-Based Metals/Alloys	0.00%	0 – 0.00%
Other Metals	0.00%	0 – 0.00%
Other Inorganic Materials	42.96%	0 – 69.04%
Cellulosics	24.52%	0 – 32.63%
Rubber	0.00%	0 – 0.00%
Plastic (waste materials)	4.99%	0 – 31.00%
Organic Matrix	0.00%	0 – 0.00%
Inorganic Matrix	0.00%	0 – 0.00%
Soils/Gravel	0.00%	0 – 0.00%
Total Organic Waste Avg.	29.51%	
Total Inorganic Waste Avg.	70.49%	

List of Any 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 TRUPACT-II Content (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

Radiological data was available for all but one of the containers in waste stream SR-SWMF-HET-B; however, the burial ground record for the one omitted container listed variety of contamination code 83. The ratios of radionuclides found in variety of contamination code (SRS equivalent to a Material Type Code) 83 were used for this container in order to perform the calculations in the table below, Waste Stream SR-SWMF-HET-B Radiological Characterization. To determine isotopic ratios for waste stream SR-SWMF-HET-B as a whole, the total isotopic weight percentage for each individual radionuclide reported on the container paperwork for each container in the waste stream was divided by the total mass of all radioactive constituents in the waste stream and converted to a percentage. This result is listed as "Total Radionuclide Wt%." To determine the radionuclide weight percent range for individual containers, the radiological mass in each container in the waste stream was summed. The mass of each individual radionuclide in a container was divided by the total radiological mass for that container and converted to a percentage. The minimum and maximum results are listed as "Radionuclide Wt% Range for Individual Containers." As shown in the table below, Waste Stream SR-SWMF-

HET-B Radiological Characterization, Pu-239 and Np-237 are expected to be the two most predominant radionuclides by mass (References C068 and P045).

Waste Stream SR-SWMF-HET-B Radiological Characterization

Isotope	Total Radionuclide Wt%[1,5]	Radionuclide Wt% Range for Individual Containers[2,5]	Total Radionuclide Ci%[3,5]	Radionuclide Ci% Range for Individual Containers[4,5]	Suspected Present (Yes/No)
WIPP-Required Radionuclides					
Am-241	0.16%	0.00% - 0.27%	0.44%	0.00% - 0.52%	Yes
Pu-238	0.30%	0.21% - 0.47%	4.05%	2.41% - 18.58%	Yes
Pu-239	**67.88%**	47.36% - 79.61%	3.28%	0.00% - 6.86%	Yes
Pu-240	**5.43%**	3.04% - 6.54%	0.96%	0.83% - 1.61%	Yes
Pu-242	**0.10%**	0.03% - 0.14%	Trace	0.00% - Trace	Yes[6]
U-233	Not Reported				Yes
U-234	Not Reported				Yes
U-238	Not Reported				Yes
Cs-137	Trace	0.00% - Trace	0.16%	0.00% - 0.27%	Yes
Sr-90	Trace	0.00% - Trace	0.19%	0.00% - 0.12%	Yes
Additional Radionuclides					
Am-242m	Trace	0.00% - Trace	0.01%	0.00% - 0.02%	Yes
Am-243	3.51%	0.00% - 5.71%	0.54%	0.00% - 0.64%	Yes
Ba-137m	Trace	0.00% - Trace	0.15%	0.00% - 0.26%	Yes
Ce-144	Trace	0.00% - Trace	Trace	0.00% - Trace	Yes
Cm-244	0.86%	0.00% - 1.41%	54.33%	0.00% - 63.75%	Yes
Cm-245	0.04%	0.00% - 0.07%	Trace	0.00% - Trace	Yes
Cm-246	0.03%	0.00% - 0.06%	Trace	0.00% - Trace	Yes
Cm-247	Trace	0.00% - Trace	Trace	0.00% - Trace	Yes
Cm-248	Trace	0.00% - Trace	Trace	0.00% - Trace	Yes
Cs-134	Trace	0.00% - Trace	0.02%	0.00% - 0.03%	Yes
Eu-154	Trace	0.00% - Trace	Trace	0.00% - 0.01%	Yes
Eu-155	Trace	0.00% - Trace	Trace	0.00% - Trace	Yes
H-3	Trace	0.00% - Trace	Trace	0.00% - Trace	Yes
Kr-85	Trace	0.00% - Trace	0.01%	0.00% - 0.02%	Yes
Np-237	**21.22%**	10.28% - 48.80%	0.01%	0.00% - 0.08%	Yes
Pm-147	Trace	0.00% - Trace	0.02%	0.00% - 0.02%	Yes
Pr-144	Trace	0.00% - Trace	Trace	0.00% - Trace	Yes

Isotope	Total Radionuclide Wt%[1,5]	Radionuclide Wt% Range for Individual Containers[2,5]	Total Radionuclide Ci%[3,5]	Radionuclide Ci% Range for Individual Containers[4,5]	Suspected Present (Yes/No)
Pu-241	0.45%	0.30% - 0.52%	35.75%	28.60% - 72.86%	Yes
Rh-106	Trace	0.00% - Trace	Trace	0.00% - Trace	Yes
Ru-106	Trace	0.005 - Trace	Trace	0.00% - Trace	Yes
Sm-151	Trace	0.00% - Trace	Trace	0.00% - Trace	Yes
Tc-99	Trace	0.00% - Trace	Trace	0.00% - Trace	Yes
Te-125	Trace	0.00% - Trace	Trace	0.00% - Trace	Yes
U-235	Trace	0.00% - Trace	Trace	0.00% - Trace	Yes
Y-90	Trace	0.00% - Trace	0.12%	0.00% - 0.19%	Yes

1. This listing indicates the total weight percent of each radionuclide over the entire waste stream.
2. This listing is the weight percent 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.
3. This listing indicates the total activity (curie) percent of each radionuclide over the entire waste stream.
4. This listing is the curie percent range of each radionuclide on a container-by-container basis.
5. "Trace" indicates <0.01 weight or curie percent for that radionuclide.
6. Pu-242 cannot be quantified by gamma spectroscopy. Its value is calculated based on other measured plutonium isotopes

Payload management will not be utilized for this waste stream.

Source Documents

Tracking Number	Document Title
C001	Memo to D. M. Cole Characterization of TRU Job Control Waste Generated on Pad #6 During FB-Line Drum Remediation
C002	Memo to D. M. Cole Characterization of TRU Job Control Waste Generated on Pad #6 During HB-Line Drum Remediation
C003	Memo to K. A. Stone SW's TRU Waste Shipments
C005	E-mail Correspondence from Jeff Lunsford to Jeff Harrison Subject: SWD031533
C006	E-mail Correspondence from Jeff Lunsford to Jeff Harrison Subject: Radiacwash
C007	Memo to D. M. Cole re: Assay Results for JCW Drums 10/07/04
C008	Memo to M. A. Kokovich re: Applicability of Two RCRA Waste Codes to TRU Waste Generated in FB-Line
C009	Memo to M. A. Kokovich re: Applicability of RCRA Waste Codes to TRU Waste Generated in HB-Line
C052	Updated Evaluation of Calculation of Individual and Total Radionuclide Masses and Activities for Waste Stream SR-SWMF-HET-A
C054	E-mail Correspondence from Jeff Lunsford to Jeff Harrison Subject: re: Future Generation of SRS-12 Waste
C055	Updated Evaluation of Calculation of Individual and Total Radionuclide Masses and Activities for Waste Stream SR-SWMF-HET-A
C056	Savannah River Plant (SRP) Burial Ground Building 643-G Appraisal Audit
C057	Leaking Fiberglass Burial Cask (DPSPU 76-272-448) – Separations Incident, SI-76-10-150
C058	Contaminated Liquid Spill (DPSPU 76-272-367) – Separations Incident, SI-76-108
C059	Contamination of TRU Pad No. 3 –Cracked Lid on Fiberglass Burial Box (DPSPU 76-272-454) – Separations Incident, SI-76-153
C061	Evaluation of Volume, Period of Generation and Calculation of Individual and Total Radionuclide Masses and Activities for Waste Stream SR-SWMF-HET-B
C063	Email from Jeff Lunsford to Jim Schoen, Subject: Fw More Info Regarding Use of 643-G TRU Waste
C064	Works Technical Report for August 1979, DPSP-79-1-8
C065	Works Technical Report for October 1976, DPSP-76-1-10
C066	Works Technical Report for November 1976, DPSP-76-1-11
C068	Email From Jeff Harrison to Jim Schoen and Mike Papp, Subject: RE: EA Reviews completed on SRS High Pu-240 AK-12 Soils Drums
C069	Email from Joseph Price to Jim Schoen re: Fw: SR-SWMF-HET-B and SR-SWMF-SOIL RCRA Characterization
C070	Interoffice Memorandum from J. K. Price to D. M. Cole and B. R. Hoeffner, Re: Environmental Guidance for Laboratory Analysis of Legacy Waste
C072	Email from Jeff Lunsford to Lisa Watson and Jeff Harrison, Ref: AK Investigation for 643-G Cntr ID's SR89796 & SR89797
C077	Evaluation of Additional Containers for SR-SWMF-HET-B
C078	Memorandum from C.W. Beaumier to J. C. Kinney re: Waste Certification for Solvent Tanks Closure Operations Solvent Tanks Closure Operations Concerns Resolution
D001	Savannah River Site Solid Waste Management Facility Documented Safety Analysis
D002	Solid Waste Management Facility. The Modular Repackaging System on TRU Pad

Tracking Number	Document Title
	19 Justification for Continued Operation
D003	Consolidated Hazards Analysis For The TRU Visual Examination Facility
D004	Consolidated Hazards Analysis For The Modular Repackaging System On TRU Storage Pad 19
D005	Consolidated Hazards Analysis For Removal Of Prohibited Items From TRU Drums In The Mixed Waste Processing Facility (U)
D018	Safety Analysis Report FB-Line, F-Canyon, FA-Line and Outside Facilities
D019	Burial Ground Facility Building 643-G Operations
D020	Solvent Tanks (S23-S30) Interim Closure Plan (U)
DR001	Discrepancy Resolution for EPA Hazardous Waste Numbers
DR004	Discrepancy Resolution for EPA Hazardous Waste Code Assignments for Waste Streams SR-SWMF-HET-B and SR-SWMF-SOIL
DR005	Discrepancy Resolution to assign a container designated by SRS as Waste Stream SR-SWMF-HET-B to SR-SWMF-SOIL and a container designated as Waste Stream SR-SWMF-SOIL to SR-SWMF-HET-B
M001	OSR 29-90 Transuranic Waste Container Characterization Forms for Drums in Waste Stream SR-SWMF-HET-A
M002	Collection of MSDSs for SR-SWMF-HET-A
M003	Calculation Cover Sheet. Calculation of Curie Fractions Used in Entering Waste Stream in WITS
M004	Calculation Cover Sheet, Plutonium Equivalent Curie Levels for Aerosol Cans and Job Control Waste Drums from TRU Remediation of HB-Line and 235-F Waste
M005	Calculation Cover Sheet, Evaluation of PEC and FGE Values for Remediated TRU Waste from 773-A
M006	Calculation Cover Sheet, Evaluation of PEC and FGE Values for Remediated TRU Waste from 772-F
M007	Calculation Cover Sheet, Evaluation of PEC and FGE Values for Remediated TRU Waste from FB-Line
M008	Calculation Cover Sheet, Development of Composite Distributions for Repackaging TRU Waste
M009	Request for Deviation to SRS Waste Acceptance Criteria Manual. E-Area TRU Remediation Processes
M013	Evaluation of Additional Containers for SRS-12 Waste Stream SR-SWMF-HET-A
M014	29-90s for Drums Added on 2/11/2008
M015	Evaluation of Additional Drums for Waste Stream SR-SWMF-HET-A
M016	Additional Transuranic Waste Container Characterization Form (29-90)
M018	Waste Package Data Report for SWD081406
M019	Addition of 61 Containers to Waste Stream SR-SWMF-HET-A
M020	Waste Stream SR-SWMF-HET-A Radiological Evaluation
M021	SR-SWMF-HET-B Container Cross Reference Documents
M022	Transuranic Waste Container Characterization Forms (SR-29-90) and Burial Ground Records for Containers in Waste Stream SR-SWMF-HET-B
M024	Burial Ground Records for Containers Added to Waste Stream SR-SWMF-HET-A
M025	Go West Data for CCP-AK-SRS-12
M027	RTR Quick Screen Data Sheets for Waste Stream SR-SWMF-HET-B
M029	Burial Ground Records for Containers Added to Waste Stream SR-SWMF-HET-B
P001	SRS Waste Acceptance Criteria Manual

Tracking Number	Document Title
P002	E-Area TRU Pads Transuranic Waste Acceptance Criteria
P003	Waste Characterization and Quantification
P004	Pad 6 and Pad 19 Generated SWMF TRU/MTRU Waste
P005	TVEF Operations (U)
P006	MRS Operations (U)
P007	Removal of Prohibited Items (U)
P008	TVEF Removal of Prohibited Items (U)
P009	Introduction and Removal of TRU Waste for Characterization in TVEF (U)
P010	TVEF Operations (U)
P018	Transferring TRU Drums to SWMF
P019	TRU Drum Inventory Control
P020	Inventory Control of TRU Repackaging Enclosures
P021	GCO TRU Drum Remediation
P022	TRU Drum Repackaging
P025	Absorbing Containerized Liquids
P026	Replacing TRU Repackaging Enclosure Gloves
P030	Absorbing Containerized Liquids
P031	Shipment Preparation for TRU Containers to SWMF
P032	Transuranic (TRU) Waste Repackaging in H-Canyon
P033	F-Canyon Container Transfer
P034	Standard Waste Box Operations (U)
P037	DPSOP40 Savannah River Plant Radiation and Contamination Control/Management of Solid Radioactive Waste
P038	Decontamination of TRU Pad #3
P039	Decontamination of TRU Pad #3 Procedure 2
P040	Solid Waste Operating Procedures Manual Cell 11 TRU Repackaging Operation
P041	Transuranic (TRU) Waste Repackaging of Large Steel Boxes, Standard Large Boxes, and other Miscellaneous Containers in H-Canyon (Phase 11a.1)
P045	Radioactive Solid Waste Burial Record, Enclosure 1
P046	Packaging Sealed Containers With Liquid Waste (U)
P048	Solvent Tanks (S23 – S30) Interim Closure Plan (U)
P049	Solvent Tanks (S23 – S30) Interim Closure Plan (U)
P050	Characterization Plan for Low Level waste Generated From Closure of Solvent Tanks S23 Through S28