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

AUG 15 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-DWPF-HET

Dear Mr. Kieling:

The Department of Energy, Carlsbad Field Office has approved the Waste Stream Profile Form (WSPF) Number SR-DWPF-HET, *Defense Waste Processing Facility Debris Waste*, for the Central Characterization Project 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,

E Ziemianski for

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

120817

CBFO:NTP:NC:PG:12-0583:UFC 5900.00

Attachment 2 – CCP Waste Stream Profile Form

(1) Waste Stream Profile Number: SR-DWPF-HET						
(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-W026-DWPF-HET					(11) Summary Category Group: S5000 – Debris Waste	
(12) Waste Matrix Code Group: Heterogeneous Debris Waste					(13) Waste Stream Name: Defense Waste Processing Facility Debris Waste	
(14) Description from the ATWIR: Waste stream SR-DWPF-HET is comprised primarily of organic and inorganic debris waste items. Specific waste items include plastics (e.g., plastic bags, plastic weight, plastic slurry pipettes, caps, tape), crucibles, pads, blue swipes, hose ends, peanut vials, volumetric labware, hood, bags, bottles, Kraft paper, cloth, pig pads.						
(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: Current - 2 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: None						
(22) Applicable TRUCON Content Numbers: SR125 / SR225, SQ154						
(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-15, Revision 0, December 19, 2011, Figures 1, 2, 3, 4 and 5						
(23B) Facility mission description: CCP-AK-SRS-15, Revision 0, December 19, 2011; Section 4.3						
(23C) Description of operations that generate waste: CCP-AK-SRS-15, Revision 0, December 19, 2011, Section 4.6						
(23D) Waste identification/categorization schemes: CCP-AK-SRS-15, Revision 0, December 19, 2011, Section 4.7.2						
(23E) Types and quantities of waste generated: CCP-AK-SRS-15, Revision 0, December 19, 2011, Section 4.7.1						
(23F) Correlation of waste streams generated from the same building and process, as applicable: CCP-AK-SRS-15, Revision 0, December 19, 2011, Section 4.7.3						
(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-15, Revision 0, December 19, 2011, Section 5.1			
(25B) Waste stream volume and time period of generation: CCP-AK-SRS-15, Revision 0, December 19, 2011, Section 5.2			
(25C) Waste generating process description for each building: CCP-AK-SRS-15, Revision 0, December 19, 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-15, Revision 0, December 19, 2011, Section 5.4			
(25F) Waste Material Parameter Weight Estimates per unit of waste: See table entitled "Waste Stream SR-DWPF-HET Waste Material Parameters" in Summation of Aspects of AK Summary Report: Waste Stream SR-DWPF-HET"			
(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: See P164 in Summation of Aspects of AK Summary Report: Waste Stream SR-DWPF-HET, Source Documents			
(27B) Standard operating procedures: See P102, P103, P104, P106, P108, P118, P119, P122, P157, P159, P162, P163 and P165 in Summation of Aspects of AK Summary Report: Waste Stream SR-DWPF-HET, Source Documents			
(27C) Safety Analysis Reports: See D027, D028, D029, D030, D031, D032, D033, D034, D039 and D084 in Summation of Aspects of AK Summary Report: Waste Stream SR-DWPF-HET, Source Documents			
(27D) Waste packaging logs: NA			
(27E) Test plans/research project reports: NA			
(27F) Site databases: See M052 in Summation of Aspects of AK Summary Report: Waste Stream SR-DWPF-HET, Source Documents			
(27G) Information from site personnel: See C098, C099, C101, C103, C107, C108 and C109 in Summation of Aspects of AK Summary Report: Waste Stream SR-DWPF-HET, Source Documents			
(27H) Standard industry documents: NA			
(27I) Previous analytical data: See M066 in Summation of Aspects of AK Summary Report: Waste Stream SR-DWPF-HET, Source Documents			
(27J) Material safety data sheets: See M056 and P156 in Summation of Aspects of AK Summary Report: Waste Stream SR-DWPF-HET, Source Documents			
(27K) Sampling and analysis data from comparable/surrogate Waste: See M066 in Summation of Aspects of AK Summary Report: Waste Stream SR-DWPF-HET, Source Documents			
(27L) Laboratory notebooks: Summation of Aspects of AK Summary Report: NA			
Confirmation Information			
For the following, when applicable, enter procedure title(s), number(s) and date(s)			
(28)	Radiography: CCP-TP-053, July 20, 2011, Revision 11		
	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: 7-17-2012

Reviewed by STR (if necessary): YES [X] N/A [ ] Date: 7-17-2012

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	7-18-2012
Signature of Site Project Manager	Printed Name	Date

CHARACTERIZATION INFORMATION SUMMARY

WSPF # SR-DWPF-HET

Lot 1

TABLE OF CONTENTS

CCP Characterization Information Summary Cover Page

Waste Stream # SR-DWPF-HET Lot #: 1

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

SPM Review: Richard Kantrowitz Date: 8/2/2012

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-053	Rev. 11	07/20/11	CCP Standard Real-Time Radiography (RTR) Inspection Procedure

Non Destructive Assay (NDA):

CCP-TP-191	Rev. 1	10/20/09	CCP Box Neutron Assay System (BNAS) Operating Procedure

Headspace Gas Sampling and Analysis (HSG):

CCP-TP-093	Rev. 16	09/07/11	CCP Sampling of TRU Waste Containers
CCP-TP-106	Rev. 7	12/29/10	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. 19	12/29/10	CCP Project Level Data Validation and Verification
CCP-TP-002	Rev. 24	12/28/11	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-003	Rev. 18	12/29/10	CCP Data Analysis for S3000, S4000, and S5000 Characterization
CCP-TP-005	Rev. 24	11/28/11	CCP Acceptable Knowledge Documentation
CCP-TP-005	Rev. 23	05/30/11	CCP Acceptable Knowledge Documentation
CCP-TP-030	Rev. 30	05/21/12	CCP CH TRU Waste Certification and WWIS/WDS Data Entry
CCP-TP-030	Rev. 29	04/26/11	CCP CH TRU Waste Certification and WWIS/WDS Data Entry

WAP Certification:

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. 30	10/17/11	CCP/SRS Interface Document

CCP Correlation of Container Identification Numbers to Batch Data Report Numbers

Waste Stream: # SR-DWPF-HET

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	
*DWPF06001	SRLBC0666	SR4RTR0231	N/A	N/A	N/A		SRHSG1210	ECL12018M	N/A
DWPF06002	SRLBC0664	SRSRTR0550	N/A	N/A	N/A		SRHSG1210	ECL12018M	N/A

* Container DWPF06001 is not being certified and is not eligilble for disposal at WIPP at this time, as valid NDA results have not been generated. It is included for EPA HWN verification only and BDRs listed are for information.

Signature of Site Project Manager

Richard Kantrowitz
Printed Name

8/2/2012
Date

CHS003

CCP Headspace Gas UCL_{90} Evaluation Form

WSPF #: SR-DWPF-HET **Waste Stream Headspace Gas Lot Number** 1 through 1

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)	Transformed PRQL (N/A or Value)	UCL_{90} > PRQL Yes	EPA Hazardous Waste Number
Acetone	No	2	2[3]	15.00	8.05	9.83	29.44	100	N/A		
Benzene	No	1	2[3]	0.16	0.10	0.08	0.28	10	N/A		
Bromoform	No	0	2[3]	0.02	0.02	0.00	0.02	10	N/A		
Butanol	No	2	2[3]	0.73	0.57	0.23	1.07	100	N/A		
Carbon Disulfide[2]	No	0	2[3]	0.07	0.06	0.01	0.09	10	N/A		
Carbon tetrachloride	No	0	2[3]	0.03	0.02	0.00	0.03	10	N/A		
Chlorobenzene	No	0	2[3]	0.04	0.03	0.01	0.05	10	N/A		
Chloroform	No	0	2[3]	0.04	0.04	0.01	0.05	10	N/A		
Chloromethane[2]	No	0	2[3]	0.10	0.09	0.01	0.12	10	N/A		
Cyclohexane[a]	No	0	2[3]	0.06	0.05	0.01	0.07	10	N/A		
1,1-Dichloroethane	No	0	2[3]	0.05	0.04	0.01	0.06	10	N/A		
1,2-Dichloroethane	No	0	2[3]	0.05	0.04	0.01	0.06	10	N/A		
1,1-Dichloroethylene	No	0	2[3]	0.05	0.05	0.01	0.06	10	N/A		
cis-1,2-Dichloroethylene[e]	No	0	2[3]	0.05	0.04	0.01	0.06	10	N/A		
trans-1,2-Dichloroethylene	No	0	2[3]	0.05	0.04	0.01	0.06	10	N/A		
1,2-Dichloropropane[2]	No	0	2[3]	0.04	0.04	0.01	0.05	10	N/A		
Ethyl benzene	No	0	2[3]	0.04	0.03	0.01	0.05	10	N/A		
Ethyl ether	No	0	2[3]	0.07	0.06	0.01	0.08	10	N/A		
Methanol	No	1	2[3]	5.50	2.82	3.79	11.07	100	N/A		
Methyl ethyl ketone	No	1	2[3]	1.40	0.73	0.95	2.80	100	N/A		
Methyl isobutyl ketone	No	1	2[3]	0.51	0.27	0.34	1.01	100	N/A		
Methylene chloride	No	0	2[3]	0.06	0.05	0.01	0.07	10	N/A		
1,1,2,2-Tetrachloroethane	No	0	2[3]	0.03	0.03	0.00	0.03	10	N/A		
Tetrachloroethylene	No	0	2[3]	0.03	0.03	0.00	0.03	10	N/A		
Toluene	No	1	2[3]	1.90	0.97	1.32	3.83	10	N/A		
1,1,1-Trichloroethane	No	0	2[3]	0.04	0.03	0.01	0.05	10	N/A		
Trichloroethylene	No	0	2[3]	0.04	0.04	0.01	0.05	10	N/A		
Trichlorofluoromethane[2]	No	0	2[3]	0.04	0.03	0.01	0.05	10	N/A		
1,1,2-Trichloro-1,2,2-trifluoroethane	No	0	2[3]	0.03	0.03	0.00	0.03	10	N/A		

CT 5004

CCP Headspace Gas UCL_{90} Evaluation Form

WSPF #: SR-DWPF-HET

Waste Stream Headspace Gas Lot Number 1 through 1

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)	Transformed PRQL (N/A or Value)	UCL_{90} > PRQL Yes	EPA Hazardous Waste Number
1,3,5-Trimethylbenzene[a]	No	0	2[(3)]	0.03	0.03	0.00	0.04	10	N/A		
1,2,4-Trimethylbenzene[a]	No	0	2[(3)]	0.04	0.03	0.00	0.04	10	N/A		
m,p-Xylene[b]	No	1	2[(3)]	0.29	0.16	0.18	0.56	10	N/A		
o-Xylene	No	1	2[(3)]	0.41	0.22	0.27	0.80	10	N/A		
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.

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) 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 UCL_{90} for completeness.

(3) Valid UCL_{90} generated, however, the W statistic and P-value cannot be computed with less than three values as there is no meaningful covariance. As a consequence, the data could not be evaluated for normality and the non-transformed data set was automatically chosen.

CTS005

Signature of Site Project Manager

Richard Kantrowitz
Printed Name

8/2/2012
Date

CCP Headspace Gas Summary Data

Waste Stream Number SR-DWPF-HET Lot Number (s) 1

Tentatively Identified Compound	Maximum Observed Estimated Concentrations (ppmv)	# Samples Containing TIC	% Detected
None	N/A	N/A	N/A

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 8/2/2012

CIS006

CCP RTR/VE Summary of Prohibited Items and AK Confirmation

Waste Stream Number: SR-DWPF-HET Lot(s)#: 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 performed on any of the 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: RTR was selected as the characterization method for the containers because the waste was previously packaged and RTR meets all the Data Quality Objectives for NDE for waste stream SR-DWPF-HET.

Site Project Manager Signature | Richard Kantrowitz (Printed Name) | 8/2/2012 (Date)

CIS007

CCP Reconciliation with Data Quality Objectives

WS# SR-DWPF-HET Lot # 1

Sampling Completeness

RTR/VE:

Number of Valid Samples: 1 Number of Total Samples Analyzed: 1
Percent Complete: 100 (QAO is 100%)

NDA

Number of Valid Samples: 1 Number of Total Samples Analyzed: 1
Percent Complete: 100 (QAO is 100%)

HSG

Number of Valid Samples: 2 Number of Total Samples Collected: 2
Percent Complete: 100 (QAO is ≥90%)
Number of Valid Samples: 2 Number of Total Samples Analyzed: 2
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%)

CIS008

CCP Reconciliation with Data Quality Objectives

WS# SR-DWPF-HET 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 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.

CIS009

CCP Reconciliation with Data Quality Objectives

WS# SR-DWPF-HET 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	N	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

Comments: NONE

Signature of Site Project Manager | Richard Kantrowitz (Printed Name) | 8/2/2012 (Date)

CISOIO

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

Overview

Waste stream SR-DWPF-HET consists of contact-handled (CH) Transuranic (TRU) heterogeneous debris waste generated in the analytical laboratory at the Defense Waste Processing Facility (DWPF) located in Building 221-S at the Savannah River Site (SRS). The waste was generated from the decontamination of labware, sampling, sample preparation, analysis, and housekeeping operations in the DWPF 221-S laboratory shielded cells. The DWPF is part of an integrated waste treatment system at the SRS to treat F- and H-Canyon wastes containing radioactive contaminants. The DWPF converts alkaline slurries of aqueous high-level waste (HLW) into a durable borosilicate glass waste form (vitrification) suitable for eventual disposal in a geological repository.

Waste Stream SR-DWPF-HET was generated in the 221-S analytical laboratory of the DWPF. TRU wastes generated in the DWPF analytical laboratory resulted from defense nuclear waste and materials by-products management and are therefore defense waste.

This summation of the Acceptable Knowledge (AK) Summary Report includes information to support Waste Stream Profile Form (WSPF) number SR-DWPF-HET for heterogeneous debris generated and stored at SRS. The primary source of information for this Summation is CCP-AK-SRS-15, *Central Characterization Project Acceptable Knowledge Summary Report For Defense Waste Processing Facility at the Savannah River Site Waste Stream: SR-DWPF-HET*, Revision 0, December 19, 2011.

Waste Stream Identification Summary

Wastes Stream Name:	Defense Waste Processing Facility Debris Waste
Waste Stream Number:	SR-DWPF-HET
Dates of Waste Generation:	February 2006
Waste Stream Volume – Current:	2 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:	SR125 / SR225, SQ154
Annual Transuranic Waste Inventory Report (ATWIR) Identification Number:	SR-W026-DWPF-HET

Waste Stream Description and Physical Form

Waste stream SR-DWPF-HET is comprised primarily of organic and inorganic debris waste items. Work in the laboratory shielded cells generates waste in the form of the peanut vials used to collect the samples, and perishable items such as blue wipes (Kimwipes), tape, bags, plastic bottles and caps, plastic slurry pipettes, and crucibles. The waste items listed on the Operation Safety Requirement (OSR) 29-90 forms indicated that the drums contained job control waste consistent with what is expected, and included: crucibles, pads, blue swipes, hose ends, peanut vials, volumetric labware, plastic bags, plastic weight, tape, hood, bags, bottles, plastic slurry pipettes, caps, Kraft paper, cloth, and pig pads.

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. This waste stream was generated during sampling and analysis and associated operations (e.g., decontamination, housekeeping) in the DWPF 221-S laboratory shielded cells.

Point of Generation

Location

Waste stream SR-DWPF-HET was generated at the SRS in Aiken, South Carolina. The waste is currently stored at the Solid Waste Management Facility (SWMF) in E-Area.

Area and/or Buildings of Generation

Waste stream SR-DWPF-HET was generated in the DWPF laboratory shielded cells which are in the Vitrification Building (221-S) in S-Area.

Generating Processes

Description of Waste Generation Processes

The waste items in the two waste drums that make up waste stream SR-DWPF-HET were generated from sampling, sample preparation, sample analysis, decontamination of labware, and housekeeping operations associated with the feed composition sludge slurry from the HLW Tank Farms. The DWPF Laboratory samples and analyzes the process at several different points to ensure that the Vitrification Facility produces only high quality glass. Samples of slurry were prepared for analysis using one of two methods; the samples were converted to a glass form and then analyzed, or the slurry was directly analyzed without vitrification. The waste from the 221-S laboratory shielded cells bounded by this waste stream was contaminated by the feed slurry analysis before vitrification had taken place (References C098, C101, C103, C108, and P164).

In the DWPF, feed material is pumped out of each process vessel in 212-S, through a recirculating sample loop to the DWPF laboratory and back into the process vessel. The recirculating loop limits the amount of radioactive material in the laboratory, while still providing a sample which is representative of the contents of the process vessel. To take a sample, a portion of the feed from the recirculating loop is diverted into a sampling container in the laboratory. This diversion is accomplished through use of a manually actuated ram which is

part of the DWPF remote sample valve. After a sample is captured, the ram is retracted, closing the valve. The sampling container is then removed, and 25-40 sample vials are taken from the sampling container (References C099, C109, and P164).

Several analyses were completed inside the shielded cells on a portion of these undiluted sample vials. These analyses include density, pH, base equivalence, weight percent solids, and weight percent calcines. None of these analyses require the addition of other chemicals; the analyses are performed on the raw material only. The information obtained from these analyses is used by Operations and Engineering personnel to make decisions regarding the process, and to verify the quality of the final glass product. The actual analyses performed on the feed material to the vitrification process are specified in the DWPF Analytical Sample Schedule. The sample schedule provides the sample location, description, sample code, analytical instrument, required analyses, analysis purpose, analysis basis, analytical range, operating range, units, analysis time, and analysis frequency (References C099 and C109).

All of the chemicals used in the cells are added to the remaining samples which are eventually transported to the analytical laboratory for analysis on other instruments as discussed above. Chemicals which are used in the cells are not stored in the cells. Pre-measured "preloads" of specific chemicals are transported into the cells prior to each sample. When a procedure requires a chemical to be added to a sample during the sample preparation in the cells, the pre-measured preload is simply uncapped and the entire content is added to the sample. The empty preload bottle and cap are discarded as waste after rinsing the bottle out with water. After each sample is completed in the cells, the cells have to be cleaned prior to pulling the next sample to ensure there are no cross-contamination issues between samples. All of the waste contained in waste stream SR-DWPF-HET is the result of the sampling and analysis in the shielded cell (References C098, C099, C101, C103, C109, D031, and M051).

Prior to removal of the cell waste, all contaminated items (e.g., crucibles, volumetric labware) are soaked for up to 24 hours in 5-gallon buckets of 50 percent nitric acid solution to remove all observable indications of sludge. The waste materials are then rinsed with water and hung in the cells until they are dry, and then they are bagged in preparation for removal of the waste from the shielded cells. Other waste items used for contamination control (e.g., cloth, Kraft paper) without visible contamination would be bagged as waste without soaking in nitric acid. All excess sample material, chemicals used in preparation of the samples, contaminated water, and waste nitric acid solution is dumped down the cell drains. Generally, the waste can be decontaminated to the point that it is not TRU waste. The drums of TRU waste in this waste stream were the first that the decontamination process failed to clean below TRU levels (References C098, C101, C109, and C154).

Waste Stream Material and Chemical Inputs

This waste stream was determined not to be regulated as a hazardous waste under the Resource Conservation and Recovery Act (RCRA).

RCRA Determinations

Historical Waste Management

Waste stream SR-DWPF-HET 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. SRS has managed containers in this waste stream as

nonhazardous. Available AK documentation was reviewed to assess chemical inputs and to identify hazardous materials potentially contaminating waste stream SR-DWPF-HET. Material safety data sheet (MSDSs) and other manufacturer information were obtained for the commercial products to determine the presence of RCRA regulated constituents. A review of available AK documentation has determined that this waste is nonhazardous (References C098, C109, D027, D028, D029, D030, D031, D032, D034, and M056).

Hazardous Waste Determinations

Ignitability, Corrosivity, Reactivity

Ignitability

The debris materials in waste stream SR-DWPF-HET do not meet the definition of ignitability as defined in 40 Code of Federal Regulations (CFR) 261.21. A solid waste exhibits the characteristic of ignitability if it has any of the following properties: 1) It is a flammable liquid (flash point less than 60°C), 2) It is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture, or spontaneous chemical change, 3) It is an ignitable compressed gas, or 4) It is an oxidizer (a substance such as a chlorate, permanganate, inorganic peroxide, or a nitrate, that yields oxygen readily to stimulate the combustion of organic matter). Ignitable liquids identified in the process include benzene, isopropyl alcohol, and methyl alcohol. Oxidizers identified in the process include potassium nitrite, sodium nitrite, and potassium permanganate. The contaminated waste items were soaked in a 50 percent nitric acid solution for up to 24 hours, rinsed with water, and then hung in the shielded cells to dry prior to disposal, and therefore, ignitable liquids and oxidizers will not be present. The TRU waste management procedure dictated that small quantities of residual liquids were to be absorbed with absorbent materials (e.g., Celite, Portland cement), before or after packaging (References C101, C109, C154, P103, P104, P108, P118, and P156). The waste material in the waste stream is therefore not ignitable waste (D001).

Corrosivity

The debris materials in waste stream SR-DWPF-HET are not liquid and do not contain unreacted corrosive chemicals; therefore they do not meet the definition of corrosivity as defined in 40 CFR 261.22. A solid waste exhibits the characteristic of corrosivity if it has any of the following properties: 1) It is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5, or 2) It is a liquid and corrodes steel at a rate greater than 0.25 inches per year. Corrosive liquids identified in the process include acids (e.g., nitric acid) and caustics (e.g., sodium hydroxide). The waste was decontaminated with a nitric acid solution and dried prior to disposal, and therefore, corrosive liquid will not be present. The TRU waste management procedure dictated that small quantities of residual liquids were to be absorbed with absorbent materials (e.g., Celite, Portland cement), before or after packaging; therefore, these corrosive liquids will not be present in the waste stream (References C101, C109, P103, P104, P108, P118, and P156). The waste material in the waste stream is therefore not corrosive waste (D002).

Reactivity

The waste material in waste stream SR-DWPF-HET does not meet the definition of reactivity as defined in 40 CFR 261.23. A solid waste exhibits the characteristic of reactivity if it has any of the following properties: 1) It is normally unstable and readily undergoes violent change without

detonating, 2) It reacts violently with water, 3) It forms potentially explosive mixtures with water, 4) When mixed with water, it generates toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment, 5) It is a cyanide or sulfide bearing waste which, when exposed to pH conditions between 2 and 12.5, can generate toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment, 6) It is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement, 7) It is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure, or 8) It is a forbidden explosive, or Class A or Class B explosive as defined in 49 CFR 173, *Shippers – General Requirements for Shipments and Packagings*. Based on a review of available AK documentation, reactive materials were not identified in the process that generated waste stream SR-DWPF-HET (References P103, P104, P108, P118, and P156). The waste material in the waste stream is therefore not reactive waste (D003).

The containers in the waste stream will be evaluated in accordance with the WIPP-WAP using real-time radiograph (RTR) or visual examination (VE) prior to shipment to ensure the waste is not ignitable, reactive, or corrosive.

Toxicity Characteristic

Waste stream SR-DWPF-HET does not meet the definition of toxicity for metal compounds as defined in 40 CFR 261.24. Mercury is known to be present in the radioactive feeds from the Tank Farm to the DWPF, but it was assumed to be mostly removed through a recovery effort at the Sludge Receipt and Adjustment Tank used to store the slurry feed material prior to the vitrification process. Trace quantities may have contaminated the waste; however, SRS characterized the waste as nonhazardous. In addition, any mercury present in the waste would be further reduced in concentration because the radioactive decontamination process of soaking it in a 50 percent nitric acid solution for up to 24 hours and subsequent rinsing with water would have also removed any toxic metals. Therefore, EPA hazardous waste number (HWN) D009 for mercury is not assigned to this waste stream (References C103, C154, D027, D028, D030, D031, P164, and P165).

Waste stream SR-DWPF-HET does not exhibit the characteristic of toxicity for organic compounds as defined in 40 CFR 261.24. SRS personnel indicated that benzene might appear in DWPF operations as a degradation product of tetraphenylborate; however, SRS characterized the waste as nonhazardous. The feed material was aqueous and was not expected to contain organic compounds. Any residue benzene present likely to contaminate the waste would only be in trace quantities (i.e., below the regulatory level) and would further be reduced during the decontamination process (i.e., rinsing contaminated waste items with water). Therefore, EPA HWN D018 for benzene is not assigned to this waste stream (References C103, C154, D034, P164, and P165).

Listed Waste

F-Listed Waste

Waste stream SR-DWPF-HET is not an F-listed hazardous waste because the debris wastes were not mixed with hazardous wastes from non-specific sources as listed in 40 CFR 261.31. The F003-listed solvent methyl alcohol was identified as potentially present in this waste stream as a contaminant of debris waste. 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, this waste stream is not an F003-listed hazardous waste (Reference D031).

K-Listed Waste

Waste stream SR-DWPF-HET does not contain hazardous waste from the specific sources in 40 CFR 261.32 and therefore is not a K-listed waste.

P- and U-Listed Waste

Waste stream SR-DWPF-HET does not contain 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. Based on the AK documentation reviewed, there is no evidence that unused commercial products were disposed of in TRU waste drums. Consequently, P- and U-listed EPA HWNs are not assigned to this waste stream. In addition, hydrofluoric acid and beryllium were not used in the DWPF laboratory. Therefore, EPA HWNs U134 and P015 are not assigned to this waste stream. Consequently, P- and U- listed EPA hazardous waste numbers are not assigned to this waste stream (References C098, C099, C101, C103, C109, D031, and M051).

Polychlorinated Biphenyls

Based on documentation reviewed during the AK investigation, materials potentially containing polychlorinated biphenyls (PCBs) were not specifically identified (e.g., capacitors, ballasts). The SRS waste segregation and packaging procedures included controls to exclude PCB items from the waste stream. OSR-29-90s did not identify any materials that may contain PCBs. Therefore, waste stream SR-DWPF-HET is not regulated as a Toxic Substances Control Act waste under 40 CFR 761 (References P103, P104, P108, P118, and P156).

Prohibited Items

Prohibited items are not expected to be present in this waste stream. The SRS waste segregation and packaging procedures included controls for liquids, compressed gases (e.g., aerosol cans), explosives, pyrophorics, non-mixed hazardous waste, sealed containers greater than four liters, and incompatible or potentially ignitable, corrosive and reactive materials encountered during waste repackaging operations (References P103, P104, P108, P118, and P156).

Based on waste management practices, procedures, and container-specific documentation free liquids should not be present in the payload containers in waste stream SR-DWPF-HET. SRS laboratory personnel stated that the contaminated waste items in this waste stream were soaked in a 50 percent nitric acid solution and hung up in the cells to dry. Additionally, packaging procedures required absorption or removal of liquids (References C098, P103, P104, P108, P118, and P165).

Certified RTR and/or VE are performed by CCP to ensure liquids do not exceed the amounts allowed by the WIPP-WAP and to ensure the absence of ignitable compressed gases and explosives. Any container identified with liquids in excess of the amounts allowed by the WIPP-WAP, or having 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 P162, P163, M051, and M066).

Method for Determining Waste Material Parameter Weights per Unit of Waste

The waste material parameter weight estimates for waste stream SR-DWPF-HET were derived primarily from information provided by SRS personnel on the OSR 29-90 forms. Included in the container-specific data provided by SRS were weight percentages for waste material categories, including waste components.

Container data provided by SRS indicated that the containers in waste stream SR-DWPF-HET included iron based metals/alloys, aluminum based metals/alloys, other inorganic materials, cellulosics, plastic, and plastic packaging. Average, minimum, and maximum waste material parameter weight percentages were calculated and the results of this analysis are presented in the Waste Stream SR-DWPF-HET Waste Material Parameters table (References C098, C099, C101, C109, M051, M052, and M066).

Waste Stream SR-DWPF-HET Waste Material Parameters

Waste Material Parameter	Weight Percent	Weight Percent Range
Iron-based Metals/Alloys	8.1%	0.0% - 10.0%
Aluminum-based Metals/Alloys	4.0%	0.0% - 5.0%
Other Metals	0.0%	0.0% - 0.0%
Other Inorganic Materials	16.2%	0.0% - 20.0%
Cellulosics	12.6%	5.0% - 45.0%
Rubber	0.0%	0.0% - 0.0%
Plastics (waste materials)	59.1%	55.0% - 60.0%
Organic Matrix	0.0%	0.0% - 0.0%
Inorganic Matrix	0.0%	0.0% - 0.0%
Soils/Gravel	0.0%	0.0% - 0.0%

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 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

The radiological characterization of waste stream SR-DWPF-HET provided is based on generator data (not decay-corrected) reported on OSR 29-90 forms. These data were derived from SRS Dose-to-Curie (References M051, M066, P102, P103, and P156).

To determine isotopic ratios for waste stream SR-DWPF-HET as a whole, the total gram value for each individual radionuclide reported on the OSR 29-90 forms 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%." Because weight percents for each container were based on a default distribution, the reported percentages for each radionuclide were identical for all containers. Therefore, minimum and maximum values for each radionuclide are identical to the weight percent for the entire population. The individual radionuclide gram values were converted to activity, and the same process was applied to determine "Total Radionuclide Ci%." The two most prevalent radionuclides, by mass, are U-238 and U-235. The two most prevalent radionuclides, by activity, are Sr-90 and Y-90.

Waste Stream SR-DWPF-HET Radiological Characterization

Isotope	Total Radionuclide Wt%[1,4]	Radionuclide Wt% Range for Individual Containers[3,4,6]	Total Radionuclide Ci%[2,4]	Radionuclide Ci% Range for Individual Containers[3,4,6]	Suspected Present (Yes/No)
WIPP Required Radionuclides					
Am-241	0.01%	N/A	.08%	N/A	Yes
Pu-238	0.02%	N/A	1.13%	N/A	Yes
Pu-239	0.28%	N/A	0.06%	N/A	Yes
Pu-240	0.03%	N/A	0.02%	N/A	Yes
Pu-242	Trace	N/A	Trace	N/A	Yes[5]
U-233	0.02%	N/A	Trace	N/A	Yes
U-234	0.02%	N/A	Trace	N/A	Yes[5]
U-238	**94.72%**	N/A	Trace	N/A	Yes
Cs-137	0.01%	N/A	1.8%	N/A	Yes
Sr-90	0.11%	N/A	**47.8%**	N/A	Yes[5]
Additional Radionuclides Reported					
Am-243	Trace	N/A	Trace	N/A	Yes
Ba-137m	Trace	N/A	0.94%	N/A	Yes
C-14	Trace	N/A	Trace	N/A	Yes
Cm-244	Trace	N/A	0.05%	N/A	Yes
Co-60	Trace	N/A	0.01%	N/A	Yes
I-129	0.02%	N/A	Trace	N/A	Yes
Ni-59	Trace	N/A	Trace	N/A	Yes
Np-237	0.05%	N/A	Trace	N/A	Yes
Pu-241	Trace	N/A	0.32%	N/A	Yes
Se-79	Trace	N/A	Trace	N/A	Yes
Sn-126	Trace	N/A	Trace	N/A	Yes
Tc-99	0.04%	N/A	Trace	N/A	Yes
U-235	**4.63%**	N/A	Trace	N/A	Yes
U-236	0.04%	N/A	Trace	N/A	Yes
Y-90	Trace	N/A	**47.8%**	N/A	Yes[7]

1. This listing indicates the total wt percent of each radionuclide over the entire waste stream.
2. This listing indicates the total activity Ci percent of each radionuclide over the entire waste stream.
3. This listing is the 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.
4. "Trace" indicates <0.01 percent for that radionuclide.
5. Pu-242, U-234, and Sr-90 cannot be quantified by gamma spectroscopy. They are calculated based on NDA Memorandum.
6. The radionuclides for the two drums in this waste stream were based on a default distribution, and therefore, the calculated relative mass and activity fractions are the same for both drums (there is no range).
7. Y-90 is not specifically identified on the OSR 29-90 forms. However, there is an "other ß/?" isotopic value given. Sr-90 and Y-90 are known to be in secular equilibrium and therefore it is assumed the "other ß/?" isotope is Y-90.

Payload management will not be utilized for this waste stream.

Source Documents

Tracking Number	Document Title
C098	Attachment 2: Interview with Daniel Roon, GCO of DWPF and Bob Petras, Waste Program Lead at DWPF.
C099	Description of Lab Mission at DWPF
C101	Waste Generation Source for the Two DWPF Drums
C103	Interview of Daniel Roon and Bob Petras of SRS by Allen Dickerson and Chris Chancellor
C106	Email from D.C. Knapp to J.D. Westergreen regarding the completion of DWPF TRU waste stream evaluation
C107	Email from Daniel Roon of SRS to Allen Dickerson RE: Slurry in Drum 06001
C108	Email from Daniel Roon of SRS to Allen Dickerson RE: Verification of data in my report
C109	Email from Michael Hart of SRS to Allen Dickerson RE: Clarification of Waste Generation processes for Waste Stream SR-DWPF-HET
C154	Email from Jeff Lunsford of SRS to Mike Papp Fw: DWPF Waste
D001	Categorization of Solids in the 800 Underground Tanks
D012	Safety Analysis Report, Savannah River Site, F-Canyon, FA-Line and Outside Facilities
D027	Final Safety Analysis Report, Savannah River Site, Defense Waste Processing Facility, Volume 1
D028	Final Safety Analysis Report, Savannah River Site, Defense Waste Processing Facility, Volume 2
D029	Final Safety Analysis Report, Savannah River Site, Defense Waste Processing Facility, Volume 3
D030	Final Safety Analysis Report, Savannah River Site, Defense Waste Processing Facility, Volume 4
D031	Final Safety Analysis Report, Savannah River Site, Defense Waste Processing Facility, Volume 5
D032	Final Safety Analysis Report, Savannah River Site, Defense Waste Processing Facility, Volume 6
D033	Final Safety Analysis Report, Savannah River Site, Defense Waste Processing Facility, Volume 7
D034	Final Safety Analysis Report, Savannah River Site, Defense Waste Processing Facility, Volume 8
D039	Safety Analysis - 200 Area Savannah River Plant F-Area Outside Facility Operations Supplement 10
D047	Citation Determination and Evaluation of Waste Incidental to Reprocessing
D073	Letter from S.R. Wright to MR. B.W. Truesdale. Listed Hazardous Wastes in Savannah River Plant (SRP) High-Level Radioactive Waste Tanks
D082	Defense Waste Processing Facility Preliminary Hazards Analysis (U)
D084	Systems Analysis - 200 Area Savannah River Plant HB-Line Operations
M051	Container Paperwork for Waste Stream SR-DWPF-HET
M052	GoWest Query for DWPF
M056	MSDS Sheets for various products
M066	Solid Waste Characterization for S-Area TRU Waste Drums # DWPF 06001 and

Tracking Number	Document Title
	DWPF 06002
P073	Federal Register Rules for Atomic Energy Commission and Nuclear Regulatory Commission
P102	Dose-to-Curie Waste Characterization
P103	Transuranic Waste Management
P104	Segregation and Packaging of S-Area Noncompactable or Noncombustible Mixed Waste
P106	Temporary Operating Procedure: Mark 42 Billet and Tube Production Part I
P108	Segregation and Packaging Hazardous Waste and Mixed Waste in DWPF and Saltstone
P118	Segregation and Packaging of Low Level Waste
P119	Identification, Segregation, and Handling of S-Area Unknown Waste
P122	Radioactive Liquid Used Oil Handling in 221-S
P156	SRS Waste Acceptance Criteria Manual
P157	Storage of Transuranium (TRU) Waste in 643-G
P159	Technical Standard - Storage of Solid Radioactive Waste
P162	Absorbing Containerized Liquids
P163	TRU Drum Repackaging
P164	Request for DOE Acceptance of revisions to the DWPF Waste Form Qualification Report (WQR) and Waste Form Compliance Plan (WCP)
P165	Waste System Operating Manual