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

APR 2 1 2011

MAY 2011

ENTERED

Mr. James Bearzi, Chief
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303

Subject: Review of Central Characterization Project – Hanford Site Waste Stream Profile Form Number, RLBWD.001, Babcock and Wilcox Plutonium Facility Contact-Handled Transuranic Debris Waste

Dear Mr. Bearzi:

The Department of Energy Carlsbad Field Office has approved the Waste Stream Profile Form, RLBWD.001, Babcock and Wilcox Plutonium Facility Contact-Handled Transuranic Debris Waste.

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

If you have questions on this matter, please contact J.R. Stroble at (575) 234-7313.

Sincerely,

RAWeber for Ed Ziemianski

Edward Ziemianski
Acting Manager

Enclosure

cc: w/enclosure
S. Zappe, NMED * ED

cc: w/o enclosure
J. Kieling, NMED ED
J. R. Stroble, CBFO ED
N. Castaneda, CBFO ED
C. Fesmire, CBFO ED
G. Basabilvazo, CBFO ED
S. McCauslin, CBFO ED
K. Watson, CBFO ED
*ED denotes electronic distribution

CBFO:NTP:JRS:GS:11-0269:UFC 5900.00

Attachment 2 – CCP Waste Stream Profile Form

(1) Waste Stream Profile Number: RLBWD.001	
(2) Generator site name: Hanford	(4)Technical contact: Veronica Waldram
(3) Generator site EPA ID: WA7890008967	(6) Technical contact phone number: (575) 234-7187
(5) Date of audit report approval by New Mexico Environment Department (NMED): September 2, 2010	
(7) Title, version number, and date of documents used for WAP Certification: CCP-PO-001, CCP Transuranic Waste Characterization Quality Assurance Project Plan, Rev. 19, December 29, 2010 CCP-PO-002, CCP Transuranic Waste Certification Plan, Rev. 25, December 29, 2010 CCP-PO-011, CCP/CH2M HILL Plateau Remediation Company Interface Document, Rev.4, March 2, 2011	
(8) Did your facility generate this waste? YES [ ] NO [X]	
(9) If no, provide the name and EPA ID of the original generator[4]: Babcock & Wilcox Parks Township Site Plutonium Facility	
Waste Stream Information[1]	
(10) WIPP ID: RLBW-01	(11) Summary Category Group: S5000
(12) Waste Matrix Code Group: Heterogeneous Debris Waste	(13) Waste Stream Name: Babcock and Wilcox Plutonium Facility Contact-Handled Transuranic Debris Waste
(14) Description from the TWBIR: Combustible and noncombustible debris waste generated from operations and decontamination and decommissioning of the Babcock and Wilcox Parks Township Site Plutonium Facility. Combustible waste may include wood, plastics, paper and rags. Noncombustible waste may include metals, glass, concrete, and absorbed liquids.	
(15) Defense TRU Waste: YES [X] NO [ ]	
(16) Check One: CH [X] RH [ ]	

(17) Number of SWBs NA	(18) Number of Drums 618	(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:[2] D005, D006, D007, D008, D009, D011, F001, F002, and F005
(22) Applicable TRUCON Content Numbers: RH 125/225
(23)**Acceptable Knowledge Information[1]**
(For the following, enter the supporting documentation used [i.e., references and dates])
Required Program Information
(23A) Map of site: CCP-AK-RL-104, Revision 0, June 3, 2010, Figures 1, 2, and 3,
(23B) Facility mission description: CCP-AK-RL-104, Revision 0, June 3, 2010,Section 4.2
(23C) Description of operations that generate waste: CCP-AK-RL-104, Revision 0, June 3, 2010, Sections 4.4 and 5.3
(23D) Waste identification/categorization schemes: CCP-AK-RL-104, Revision 0, June 3, 2010, Section 4.5
(23E) Types and quantities of waste generated: CCP-AK-RL-104, Revision 0, June 3, 2010, Sections 4.5.1 and 5.2
(23F) Correlation of waste streams generated from the same building and process, as applicable: CCP-AK-RL-104, Revision 0, June 3, 2010, Section 4.6.1
(24) Waste certification procedures: CCP-TP-030, CCP TRU Waste Certification and WWIS/WDS Data Entry, Rev.28, May 12, 2010
(25)Required Waste Stream Information:

(25A) Area(s) and building(s) from which the waste stream was generated: CCP-AK-RL-104, Revision 0, June 3, 2010, Section 5.1			
(25B) Waste stream volume and time period of generation: CCP-AK-RL-104, Revision 0, June 3, 2010, Section 5.2			
(25C) Waste generating process description for each building: CCP-AK-RL-104, Revision 0, June 3, 2010, Sections 4.4 and 5.3			
(25D) Waste Process flow diagrams: CCP-AK-RL-104, Revision 0, June 3, 2010, Figures 6, 7, 8, and 9			
(25E) Material inputs or other information identifying chemical/radionuclide content and physical waste form: CCP-AK-RL-104, Revision 0, June 3, 2010, Section 5.4			
(25F) Waste Material Parameter Weight Estimates per unit of waste: See Table 3 of the Summation of Aspects on AK Summary Report: RLBWD.001			
(26) Which Defense Activity generated the waste[3]: (check one)			
	Weapons activities including defense inertial confinement fusion	X	Naval Reactors development
	Verification and control technology		Defense research and development
	Defense nuclear waste and material by products management		Defense nuclear material production
	Defense nuclear waste and materials security and safeguards and security investigations		
(27)Supplemental Documentation			
(27A) Process design documents: NA			
(27B) Standard operating procedures: See S2 AK Element # On Attachment 1 to Summation of Aspects of AK Summary Report			
(27C) Safety Analysis Reports: See S3 AK Element # On Attachment 1 to Summation of Aspects of AK Summary Report			
(27D) Waste packaging logs: See S4 AK Element # On Attachment 1 to Summation of Aspects of AK Summary Report			
(27E) Test plans/research project reports: See S5 AK Element # On Attachment 1 to Summation of Aspects of AK Summary Report			
(27F) Site databases: NA			
(27G) Information from site personnel: See S7 AK Element # On Attachment 1 to Summation of Aspects of AK Summary Report			
(27H) Standard industry documents: NA			
(27I) Previous analytical data: See S9 AK Element # On Attachment 1 to Summation of Aspects of AK Summary Report			
(27J) Material safety data sheets: See S10 AK Element # On Attachment 1 to Summation of Aspects of AK Summary Report			
(27K) Sampling and analysis data from comparable/surrogate Waste: NA			
(27L) Laboratory notebooks: NA			
Confirmation Information[2]			
For the following, when applicable, enter procedure title(s), number(s) and date(s)			
(28)	Radiography: CCP-TP-053, Revision 9, September 30, 2010		
(29)	Visual Examination: NA		

Attachment 2 – CCP Waste Stream Profile Form (Continued)

(30)Comments:

For a list of the waste characterization procedures used and date of the respective procedures see the list of procedures on the attached CIS.

Reviewed by AK Expert:	**YES** [X]		**Date: 2-28-2011**
Reviewed by STR (If necessary):	**YES** [X]	**N/A** [ ]	**Date: 2-25-2011**

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.

(31) Veronica Waldram	(32) Veronica Waldram	(33) 3-24-2011
Signature of Site Project Manager	Printed Name	Date

NOTE: (1) Use back of sheet or continuation sheets, if required.

(2) If, radiography, visual examination were used to confirm EPA Hazardous Waste Numbers, attach signed Characterization Information Summary documenting this determination.

(3) This waste was also generated by the following defense activities: defense research and development, and defense nuclear materials production

(4) Babcock & Wilcox originally generated this waste and shipped it to Hanford. Hanford is managing this waste and shipping it under the Hanford EPA ID (WA7890008967). In Addition, because RCRA had not been implemented at the time the Babcock & Wilcox waste was shipped to Hanford, an EPA ID for Babcock & Wilcox Facility was unavailable.

CHARACTERIZATION INFORMATION SUMMARY

WSPF # RLBWD.001

Lot 1

TABLE OF CONTENTS

CIS001

CCP Characterization Information Summary Cover Page

Waste Stream #	RLBWD.001	Lot #:	1
AK Expert Review:	N/A	Date:	N/A
SPM Review:	Veronica Waldram *Veronica Waldram*	Date:	2/14/2011

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. 7	10/21/09	CCP Standard Real-Time Radiography (RTR) Inspection Procedure
CCP-TP-053	Rev. 8	06/30/10	CCP Standard Real-Time Radiography (RTR) Inspection Procedure
CCP-TP-053	Rev. 9	09/30/10	CCP Standard Real-Time Radiography (RTR) Inspection Procedure

Non Destructive Assay (NDA):

CCP-TP-070	Rev. 0	01/11/10	CCP Gamma Energy Assay (GEA) Calibration, Confirmation, and Verification Procedure
CCP-TP-071	Rev. 0	01/11/10	CCP Gamma Energy Assay (GEA) Operating Procedure
CCP-TP-072	Rev. 0	01/12/10	CCP Gamma Energy Assay (GEA) Data Review, Validation, and Reporting Procedure
CCP-TP-072	Rev. 1	01/28/11	CCP Gamma Energy Assay (GEA) Data Review, Validation, and Reporting Procedure

Headspace Gas Sampling and Analysis (HSG):

CCP-TP-093	Rev. 13	03/19/07	CCP Sampling of TRU Waste Containers
CCP-TP-093	Rev. 14	12/29/10	CCP Sampling of TRU Waste Containers
CCP-TP-106	Rev. 6	07/12/07	CCP Headspace Gas Sampling Batch Data Report Preparation
CCP-TP-106	Rev. 7	12/29/10	CCP Headspace Gas Sampling Batch Data Report Preparation
CCP-TP-173	Rev. 1	09/30/09	CCP Analysis of Gas Samples for VOCs by GC/FID
CCP-TP-175	Rev. 0	05/02/07	CCP Analysis of Gas Samples for VOCs by GC/MS
CCP-TP-175	Rev. 1	03/29/10	CCP Analysis of Gas Samples for VOCs by GC/MS
CCP-TP-175	Rev. 2	12/29/10	CCP Analysis of Gas Samples for VOCs by GC/MS

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	06/09/10	CCP Project Level Data Validation and Verification
CCP-TP-001	Rev. 19	12/29/10	CCP Project Level Data Validation and Verification
CCP-TP-002	Rev. 21	08/04/09	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-002	Rev. 22	06/30/10	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-003	Rev. 17	11/09/09	CCP Data Analysis for S3000, S4000, and S5000 Characterization
CCP-TP-003	Rev. 18	12/29/10	CCP Data Analysis for S3000, S4000, and S5000 Characterization
CCP-TP-005	Rev. 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-030	Rev. 27	12/14/09	CCP CH TRU Waste Certification and WWIS/WDS Data Entry
CCP-TP-030	Rev. 28	05/12/10	CCP CH TRU Waste Certification and WWIS/WDS Data Entry

WAP Certification:

CCP-PO-001	Rev. 17	06/23/09	CCP Transuranic Waste Characterization Quality Assurance Project Plan
CCP-PO-001	Rev. 18	06/30/10	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-002	Rev. 22	01/12/10	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 23	04/07/10	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 24	06/30/10	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 25	12/29/10	CCP Transuranic Waste Certification Plan
CCP-PO-011	Rev. 0	07/22/09	CCP/CH2M Hill Plateau Remediation Company Interface Document
CCP-PO-011	Rev. 1	12/22/09	CCP/CH2M Hill Plateau Remediation Company Interface Document
CCP-PO-011	Rev. 2	07/27/10	CCP/CH2M Hill Plateau Remediation Company Interface Document
CCP-PO-011	Rev. 3	10/05/10	CCP/CH2M Hill Plateau Remediation Company Interface Document

CIS002

CCP Correlation of Container Identification Numbers to Batch Data Report Numbers

Waste Stream: # RLBWD.001 — 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	
RL0040437	RLGEAA0049	RLRTRB0046	NA	NA	NA		RLHSGS100002	ECL10016M	ECL10016G
RL0055064	RLGEAA0049	RLRTRB0046	NA	NA	NA		RLHSGS100002	ECL10016M	ECL10016G
RL0055146	RLGEAA0049	RLRTRB0046	NA	NA	NA		RLHSGS100002	ECL10016M	ECL10016G
RL0056331	RLGEAA0049	RLRTRA0056	NA	NA	NA		RLHSGS100002	ECL10016M	ECL10016G
RL0056617	RLGEAA0088	RLRTRB0067	NA	NA	NA		RLHSGS100005	ECL10025M	ECL10025G
RL0058304	RLGEAA0049	RLRTRA0056	NA	NA	NA		RLHSGS100002	ECL10016M	ECL10016G
RL0058581	RLGEAA0049	RLRTRA0056	NA	NA	NA		RLHSGS100005	ECL10025M	ECL10025G
RL0067192	RLGEAA0049	RLRTRB0046	NA	NA	NA		RLHSGS100005	ECL10025M	ECL10025G
RL0069202	RLGEAA0049	RLRTRA0056	NA	NA	NA		RLHSGS100005	ECL10025M	ECL10025G
RL0070628	RLGEAA0049	RLRTRA0056	NA	NA	NA		RLHSGS100005	ECL10025M	ECL10025G

Veronica Waldram
Signature of Site Project Manager

Veronica Waldram
Printed Name

2/14/2011
Date

CTS003

CCP Headspace Gas UCL_{90} Evaluation Form

WSPF #: RLBWD.001

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
Benzene	SQRT	5	10	0.91	0.44	0.29	0.57	10	3.16		
Bromoform	Log	0	10	-2.53	-3.80	0.67	-3.50	10	2.30		
Carbon tetrachloride	SQRT	2	10	0.29	0.19	0.06	0.21	10	3.16		
Chlorobenzene	Log	0	10	-2.12	-3.38	0.67	-3.09	10	2.30		
Chloroform	Log	3	10	-1.61	-2.98	0.85	-2.60	10	2.30		
Cyclohexane[a]	Log	1	10	0.79	-2.44	1.31	-1.87	10	2.30		
1,1-Dichloroethane	Log	0	10	-1.61	-2.86	0.67	-2.57	10	2.30		
1,2-Dichloroethane	Log	0	10	-1.71	-2.96	0.66	-2.67	10	2.30		
1,1-Dichloroethylene	Log	0	10	-1.61	-2.86	0.67	-2.57	10	2.30		
cis-1,2-Dichloroethylene	Log	0	10	-2.00	-3.26	0.66	-2.97	10	2.30		
trans-1,2-Dichloroethylene	Log	0	10	-1.35	-2.59	0.66	-2.30	10	2.30		
Ethyl benzene	Log	4	10	1.65	-1.53	2.10	-0.61	10	2.30		
Ethyl ether	Log	0	10	-1.31	-2.56	0.66	-2.27	10	2.30		
Methylene chloride	Log	3	10	1.55	-2.08	1.67	-1.35	10	2.30		
1,1,2,2-Tetrachloroethane	Log	0	10	-2.53	-3.76	0.66	-3.47	10	2.30		
Tetrachloroethylene	Log	0	10	-2.16	-3.43	0.66	-3.14	10	2.30		
Toluene	Log	9	10	3.04	-0.46	2.03	0.43	10	2.30		
1,1,1-Trichloroethane	Log	1	10	-2.04	-3.55	0.83	-3.18	10	2.30		
Trichloroethylene	Log	0	10	-1.90	-3.16	0.66	-2.87	10	2.30		
Trichlorofluoromethane(2)	Log	0	10	-2.04	-3.29	0.67	-3.00	10	2.30		
1,1,2-Trichloro-1,2,2-trifluoroethane	Log	0	10	-2.41	-3.68	0.67	-3.39	10	2.30		
1,2,4-Trimethylbenzene[a]	Log	0	10	-1.80	-3.05	0.66	-2.76	10	2.30		
1,3,5-Trimethylbenzene[a]	Log	0	10	-1.71	-2.97	0.67	-2.68	10	2.30		
m,p-Xylene[b]	Log	4	10	1.74	-1.82	2.20	-0.86	10	2.30		
o-Xylene	Log	4	10	0.53	-1.97	1.69	-1.23	10	2.30		
Acetone	Log	7	10	4.29	1.40	2.40	2.45	100	4.61		
Butanol	SQRT	6	10	2.90	1.11	1.11	1.59	100	10.00		
Methanol	Log	1	10	3.83	2.20	0.57	2.45	100	4.61		
Methyl ethyl ketone	No	6	10	11.00	2.64	3.55	4.19	100	N/A		

CTS 004

CCP Headspace Gas UCL_{90} Evaluation Form

WSPF #: RLBWD.001

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
Methyl isobutyl ketone	SQRT	6	10	0.62	0.39	0.12	0.44	100	10.00		
Chloromethane(2)	SQRT	9	10	2.49	1.05	0.70	1.35	10	3.16		
Carbon Disulfide(2)	Log	9	10	0.34	-0.77	0.80	-0.42	10	2.30		
1,2-Dichloropropane(2)	Log	0	10	-1.97	-3.22	0.66	-2.93	10	2.30		
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.

Veronica Waldram
Signature of Site Project Manager

Veronica Waldram
Printed Name

2/14/2011
Date

CCP Headspace Gas Summary Data

Waste Stream Number RLBWD.001 Lot Number (s) 1

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

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 Veronica Waldram Date 2/14/2011

CTS 0016

CCP RTR/VE Summary of Prohibited Items and AK Confirmation

Waste Stream Number: RLBWD.001 Lot(s)#: 1

Container Number	RTR Prohibited Items [a]	Visual Examination Prohibited Items [a]
See correlation of container ID numbers for list of remaining drum numbers in this Lot.	RTR Data confirm that none of the containers in this lot contain any prohibited items.	None of the containers in this lot were processed through VE.

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 containers were previously packaged and RTR is an acceptable characterization method to meet all the Data Quality Objectives for NDE of waste stream RLBWD.001.

Veronica Waldram — Veronica Waldram — 2/14/2011

Site Project Manager Signature — Printed Name — Date

CIS 007

CCP Reconciliation with Data Quality Objectives

WSF# RLBWD.001 Lot # 1

Sampling Completeness

RTR:

Number of Valid Samples: 10 Number of Total Samples Analyzed: 10

Percent Complete: 100 (QAO is 100%)

NDA

Number of Valid Samples: 10 Number of Total Samples Analyzed: 10

Percent Complete: 100 (QAO is 100%)

HSG

Number of Valid Samples: 10 Number of Total Samples Collected: 10

Percent Complete: 100 (QAO is ≥90%)

Number of Valid Samples: 10 Number of Total Samples Analyzed: 10

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%)

CTS008

CCP Reconciliation with Data Quality Objectives

WSF# RLBWD.001 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.

CTS009

CCP Reconciliation with Data Quality Objectives

WSF# RLBWD.001 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.

14	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

Veronica Waldram	Veronica Waldram	2/14/2011
Signature of Site Project Manager	Printed Name	Date

SUMMATION OF ASPECTS OF AK SUMMARY REPORT: RLBWD.001

Overview:

The RLBWD.001 waste stream consists of TRU contact-handled (CH) mixed heterogeneous debris resulting from mixed plutonium oxide fuels and facility decontamination and decommissioning (D&D) of the Babcock & Wilcox Parks Township Site Plutonium Facility (B&W) located in Leechburg, Pennsylvania. Waste stream RLBWD.001 was packaged and shipped to Hanford between 1972 and 1983. All of the waste generated at B&W has been repackaged.

TRU waste generated by B&W facility is contaminated with radiological materials generated from atomic energy defense activities as follows: naval reactors development, defense nuclear materials production, and defense research and development. The mixed oxide fuel produced at this facility supported breeder reactor operations and research conducted by the U.S. Department of Energy (DOE) and its predecessor organizations.

Fuel manufactured by B&W was used to irradiate experiments in the Experimental Breeder Reactor II (EBR-II) and Fast Flux Test Reactor (FFTF) reactors. At EBR-II, experiments conducted included long running experiments in support of research for Bettis Atomic Power Laboratory, which was dedicated to supporting the Naval Nuclear Propulsion Program. For FFTF, B&W provided a significant portion of the fuel pins used in cores 1 and 2, and all of cores 3 and 4 for the reactor. Experiments conducted in FFTF included the FSP-1 and FSP-1R experiments, performed as part of the Strategic Defense Initiative Organization's SP-100 program, which was intended to develop space-based reactor systems for national defense. Additionally, the plutonium oxides used by B&W were supplied by Hanford and included plutonium processed under the Plutonium Recycle Program and obtained from various sources, including both defense (i.e., weapons) and non-defense activities. Therefore, waste from the B&W facility is eligible for disposal as TRU Defense waste at WIPP.

This Summation of the Acceptable Knowledge Summary Report includes information to support Waste Stream Profile Form (WSPF) RLBWD.001 for the Babcock and Wilcox Plutonium Facility Contact-Handled Transuranic Debris waste. The primary source of information for this report is CCP-AK-RL-104, *Central Characterization Project Acceptable Knowledge Summary Report for Babcock and Wilcox Plutonium Facility Contact-Handled Transuranic Debris Waste, Waste Stream: RLBWD.001,* Revision 0, dated June 3, 2010. CCP-AK-RL-104 includes information obtained from numerous sources, including facility safety basis documentation, historical document archives, generator and storage facility waste records and documents including databases, and interviews with operational and waste management personnel.

Waste Stream Identification Summary:

Waste Stream Name:	Babcock and Wilcox Plutonium Facility Contact-Handled Transuranic Debris Waste
Waste Stream Number:	RLBWD.001
Site Where TRU Waste Was Generated:	Babcock & Wilcox Parks Township Site
Facility Where TRU Waste was generated:	Babcock & Wilcox Parks Township Site Plutonium Facility

Site Where TRU Waste is Currently Stored:	Hanford
Waste Stream Volume – Current:	618 55 gallon drums
Waste Stream Volume – Projected:	None
Dates of Waste Generation:	1964 - 1983
TRUCON Content Numbers:	RH125/ RH225
Summary Category Group:	S5000
Waste Matrix Code:	S5400
Waste Matrix Code Group:	Heterogeneous Debris Waste
ATWIR Identification Number:	RLBW-01
RCRA EPA Hazardous Waste Numbers:	D005, D006, D007, D008, D009, D011, F001, F002, F005

Waste Stream Description and Physical Form:

The RLBWD.001 waste stream consists of TRU mixed heterogeneous debris waste resulting from B&W fuel production and the associated D&D operations at the B&W Facility consisting of line, non-line, fabrication, High Efficiency Particulate Air (HEPA) filter, plutonium laboratory waste, scrap recovery, combustible, non-combustible, and absorbed liquid waste. Based on a review of previous waste streams that have been generated at the B&W facility, examples of potential waste items in the RLBWD.001 waste stream are provided below:

- Iron-based Metals/Alloys:
    - Glovebox material
    - Ductwork, metallic storage vaults
    - Balances, tools
    - Angle frames, pipe, trays, cans
- Aluminum-based Metals/Alloys:
    - Rejected fuel cladding
    - Laboratory boats
- Other Metals:
    - Batteries
    - Miscellaneous equipment, (e.g., balances, furnaces, electrodes)
    - Fluorescent light bulbs, light bulbs, mercury thermometers and switches

- Other Inorganic Materials:
  - Glass, (e.g., glovebox windows, glassware, beakers)
  - Asbestos: likely to be present in building material
  - Ceramic, (e.g., Leco crucibles)
  - Clay based vermiculite
  - Cement, sand, firebrick

- Cellulosics:
  - Paper, (e.g., cardboard, fiberboard, ice cream containers, Kimwipes)
  - Cloth, (e.g., personal protective equipment [PPE], cloth sheeting, rags used for Decontamination)
  - Wood, (e.g., ladders, brush handles, and framing material for filter media)
  - Filter media

- Rubber:
  - Gloves, lead lined gloves

- Plastics:
  - Polyvinylchloride (PVC) bag material, neoprene gloves, plastic vials and containers, tape, polyethylene

- Organic Matrix:
  - Klean Strip (contains methylene chloride and methonol), NUTEC (contains toluene, methyl ethyl ketone, acetone, and methanol) TURCO Steam cleaning solution (contains acetone and toluene) spent hydraulic fluid, vacuum pump oil, and residual cotton seed oil

- Inorganic Matrix:
  - Absorbed inorganic liquids (e.g. cleaning liquid comprised of sulfuric acid, silver sulfate, iron (III), sodium bisulfate and trace nitric acid) contaminated with process residues absorbed in cement, sand and vermiculite based Speedi-Dri vermiculite-based absorbent

Waste stream RLBWD.001 drums contain lesser amounts of organic and inorganic homogenous solids; however, no drum will exceed 50 percent by volume of these homogeneous solids.

The Waste Matrix Code S5400, Heterogeneous Debris, is assigned to the waste stream. The materials that comprise waste stream RLBWD.001 have common physical form, contain similar hazardous constituents, and were generated form a single process or activity (fuel production and associated D&D operations), and therefore assigned to a single waste stream.

Point of Generation

Location

Waste stream RLBWD.001 was generated from the Babcock & Wilcox Parks Township Site Plutonium Facility operations in Leechburg Pennsylvania (formally, Nuclear Materials and Equipment Corporation [NUMEC]). The waste was shipped to the Burial Grounds at the Hanford Site for storage. All of the waste has been being repackaged at the Waste Receiving and Processing Plant and T Plant after it was retrieved from the Burial Grounds.

Area and Building of Generation

Waste stream RLBWD.001 was generated from the B&W Facility. The waste is currently stored in above ground storage at the Central Waste Complex at the Hanford Site. All of the B&W waste has been repackaged at the T Plant or Waste Receiving and Processing Plant.

Generating Process

Description of Waste Generating Process

The heterogeneous debris waste stream consists of line, non-line, fabrication, HEPA filter, laboratory, scrap recovery, soft, hard, and absorbed liquid waste. Historically, this waste has been identified as drummed dry waste, drummed liquid waste, and crated dry waste. Soft waste is combustible and consists of paper, cardboard, fiberboard, soft plastics, rubber, or cloth. Soft waste could come in the form of Kimwipes, HEPA filter material, shoe covers, gloves, empty polyethylene bottles, and other discarded materials incidental to processing. Hard waste is non-combustible and considered as crucibles, glass, glovebox windows, and miscellaneous equipment (e.g., balances, furnaces, electrodes).

Absorbed liquid waste was generated through line activities only and consists of raffinate, sludge, oil and laboratory analytical process wastes. These liquids were generated from fabrication, laboratory and scrap recovery activities.

Line Generated Waste

Line-generated waste was commonly produced from glovebox activities and can also be identified as fabrication, HEPA filter, laboratory, and scrap recovery waste. Fabrication, laboratory, and scrap recovery waste includes hard, soft, and liquid waste; HEPA filter waste pertains to hard and soft waste only. This waste was primarily generated when waste was removed from the gloveboxes and hoods and consisted of plastic (PVC) bag material, neoprene gloves, lead-lined gloves, small equipment, plastic vials and containers, O-Rings, Kim-wipes, and cotton pads, muslin cleaning cloths, and absorbed liquids.

For packaging purposes, line-generated waste included fabrication, soft, hard, laboratory, HEPA filters, and scrap recovery waste. Line generated waste (paper, plastic, crucibles, glass, metal components, gloves, glovebox material, etc) was packaged during processing and later during D&D. It was common practice to sweep all powder from line-generated waste before packaging. Glove fingers were cut off to eliminate air pockets during volume reduction. Glassware was placed in metal containers, crushed, and double bagged. Metal cans were cleaned with a wire brush, the can interior and exterior were painted with a latex paint, allowed to dry, and then the can was size reduced. Sharp edges were filed off glovebox/hood equipment and, where filing was not possible, sharp edges were covered with tape. The entire piece of equipment was painted, allowed to dry, and double bagged prior to being placed in the drums.

Some gloveboxes were cut into pieces small enough to fit into 55-gallon drums. The pieces were first inspected to ensure that sharp or protruding objects were removed, blunted, or protected with packaging material. Following this inspection, the outer surface of the waste was fixed. It was then double-bagged in 12-mil-thick PVC with each bag heat sealed. When the drum was filled, the liner was sealed with plastic tape.

Non-Line Generated Waste

Non-line generated waste, generally identified as non-glovebox waste, was generated outside of gloveboxes and included all materials destined for discard from plant operating and service areas where known or potential radioactive materials contamination existed. Non-line waste can also be identified as fabrication, laboratory, and HEPA filter waste that includes hard and soft waste. These types of waste were either plutonium-contaminated combustible or plutonium contaminated noncombustible, and included miscellaneous equipment, furnace brick, packaging material, housekeeping trash, cloth and plastic sheet materials, used non-radioactive materials containers, maintenance scrap, decontamination wipes, any materials used to clean up any spills of contamination, wipes and plastic from bag and glove changes, glovebox operations, canners gloves, vinyl gloves, smears generated by Health & Safety, related low level contamination, and scrap balances. Waste was placed in a polyethylene bag and sealed with tape. Some of the non-line waste drum contents were size reduced to approximately half of their initial bulk volume. The non-line generated waste was then placed in a drum lined with a polyethylene bag. When the drum was filled, the liner was sealed with plastic tape.

Fabrication Generated Waste

Fabrication waste items included spent equipment, broken tools, furnace brick, rejected fuel cladding, equipment components, glovebox windows, solidified liquid, and other items from within the glovebox enclosures too large for 6-L paper carton containment. This waste generally originated in all controlled zones within the facility and was non-combustible. This waste was generated during plant maintenance and cleanout operations.

HEPA Filters

Primary HEPA filters and a nominal amount of jet mill bags have been accounted for separately due to the distinct packaging configurations. Filters and jet mill bags contained both combustible and non-combustible materials and had been used in all gas-handling lines or ducts for particulate removal from gas streams before discharge. Because of the large quantities of powders processed in this facility, the HEPA filters and jet mill bags contained large amounts of plutonium. Over 40 percent of the total crated waste volume shipped to retrievable storage contained large size HEPA filters.

Smaller primary HEPA filters were packaged one per 55-gallon drum. They were of framed configuration with end piping adaptors for inline installation. Filters were bagged off at the nipple and double-bagged in 12 mil thick PVC plastic, the outer PVC bag was dielectrically sealed. Portions of this waste were size reduced. When the drum was filled, the liner was sealed with plastic tape. Each drum was equipped with a standard drum closure, which was then secured.

The jet mill bags that were not sent to Hanford for residue recovery were contained in 6-Liter (1 ½-gallon) paper cans. These cans were then placed in lined 55-gallon drums for shipping. When the drum was filled, the liner was sealed with plastic tape. Each drum was equipped with a standard drum closure, which was then secured.

Two sizes of filters (12" x 12" x 18" and 24" x 24" x 20") were used on the gloveboxes containing dry powders or liquids. These served as the primary filters on the glovebox exhaust. Filter media was machine compacted in the glovebox. This compaction was performed only for volume reduction purposes resulting in approximately a 45 percent reduction of the waste volume in the drums and not supercompaction of a drum into a puck.

Liquid Waste

Absorbed liquids may be present in this waste stream at less than 50 percent by volume per container. The waste summary category will be verified using RTR prior to inclusion in this TRU waste stream.

Liquid waste was generated from glovebox (line-generated) activities such as fabrication, laboratory activities, scrap recovery, glovebox clean out, and power washing the inside of gloveboxes during the decontamination phase of the D&D effort. Fabrication liquid waste included oil and sump drainage. The oils consisted of spent hydraulic fluid, vacuum pump oil, and residual cotton seed oil from pellet press operations.

Absorbed liquids from laboratory activities contained a variety of solutions from the analytical processes and were primarily acidic in nature. Solidified liquids from scrap recovery consisted of sludge and raffinate. Sludge was a term used by the B&W Plutonium Facility and does not meet the current RCRA definition of sludge. The sludge waste consisted of insolubles washed from tank heel or line filter cleanout and spent resins from ion exchange columns. The raffinate was generated from the ion exchange columns and included metallic impurities and uranium in nitric acid solutions. During D&D, gloveboxes were power washed with solutions of NUTEC, generating liquids that were later stabilized.

Volatile Organic Compounds (VOC) associated with the absorbed liquids include methanol, acetone, xylene, toluene, methyl ethyl ketone, and methylene chloride. Methylene chloride is one of the chemical constituents in Klean Strip. Klean Strip paint remover was used for the removal of many layers of paint from plant walls and other painted surfaces which may have contained traces of contamination. TURCO steam cleaning solution contained the acetone and toluene. Methyl ethyl ketone and methanol are components of NUTEC which was used for decontamination purposes. Finally, acetone, methanol, xylene, and butyl alcohol were used as solvents for laboratory analysis of rare earth metals.

Dry Bagged Waste Generation

Dry bagged waste was material removed from the gloveboxes and hoods and consisted of plastic (PVC) bag material, neoprene gloves, lead lined gloves, plastic vials and containers, O-rings, Kim-wipes, cotton pads and muslin cleaning cloths. Approximately 182 one-gallon waste cartons were generated per month during operation.

Non-Glovebox Waste Generation

Plutonium contaminated waste that was generated outside of the gloveboxes consisted of materials used to clean up contamination, wipes and plastic from bag and glove changes, glovebox operator's canners gloves, vinyl gloves, and smears generated by health physics technicians.

Scrap and Obsolete Equipment Generation

Large pieces of equipment were first cleaned to remove loose powders and decontaminated to remove smearable contamination prior to removal and waste packaging.

Fabrication of Mixed Oxide Nuclear Fuels

From approximately 1972 until 1979 B&W Facility fabricated mixed-oxide nuclear fuel pins for FFTF cores 1, 2, 3, and 4. These fabrication activities involved the following:

- Manufacture of fuel for the FFTF
- Recycle of material
- Scrap recovery of mixed oxide powder to plutonium nitrate
- Analytical and quality control operations
- Research and development (R&D) activities
- Handling of radioactive byproduct source materials
- Fuel storage and shipping

Gloveboxes were used to perform all line operations. Bag-in and bag-out operations were used to introduce working materials into the glovebox line and to remove finished products and wastes materials.

Manufacture of fuel for the FFTF began with the fabrication of fuel pellets using a dry process in which plutonium and uranium oxide powders were mechanically blended. All line operations for manufacturing were performed in any of the 36 controlled glovebox containments in Fabrication Area 1.

Initially, plutonium oxide was received at the B&W Plutonium Facility from Atlantic Richfield Hanford Company (ARHCO) in sealed cans. The isotopic composition of the plutonium included 87 percent Pu-239 and 12 percent Pu-240. The plutonium oxide powder was stored until it could be introduced to the process area where it was weighed, randomly sampled, and analyzed.

The fuel pellet material was made through a series of heating, sizing, and blending with uranium oxide obtained from natural uranium ore or from depleted uranium stock having an isotopic composition of less than 0.3 percent U-235. The pellets are made with an automatic press when the size, density, and composition specified by FFTF operations were achieved.

Inspection of the pellets for certification included the following physical and chemical analyses.

- Plutonium and uranium Assay
- Plutonium and uranium Isoptopic analysis
- Metallic and Non-Metallic Impurities

- Homogeneity and Metallographic Examination
- Oxygen/Metal (O/M) Ratio, Relative Density, and Moisture
- Diameter, Length, and Weight
- Visual examination for Cracks and Chips

The certified pellets were loaded into fuel stacks and sealed in the fuel pins. The fuel pins containing the certified pellets were then decontaminated by repeatedly wiping the fuel pins with cotton swabs and methyl alcohol.

Recycle Operations

Fuel fabrication line operations generated some recyclable material that was treated and added back to the mixed-oxide feed lots. Both sintered (hard) and unsintered (green) materials were processed through the B&W recycle operation.

Scrap Recovery

Scrap recovery involved recovering plutonium from scrap materials Fabrication Area 6. Treatment of the scrap recovery solutions by ion exchange was a cyclical process consisting of four operations:

- Resin preconditioning operation
- Plutonium-loading operation
- Plutonium-wash operation
- Plutonium-elution operation

Laboratory Generated Waste

Laboratory generated waste was produced in both line and non-line activities. Laboratory generated waste included small items of equipment, electrodes, rubber gloves, plastics, primary HEPA filters, Leco crucibles, glass, metal components, pellets in mounts, and absorbed liquids. The following analytical methods were performed by B&W.

Quality Control Analyses

Chemical analysis of process samples was routinely performed on each lot to ensure the fuel products met specified quality control standards. The analytical program required continued sampling of the mixed-oxide powders and pellets and, consequently, contributed to the generation of TRU waste.

Carbon Analysis

Carbon analysis was performed for plutonium oxides, uranium oxides, and plutonium/uranium mixed oxides through combustion to carbon dioxide followed by gas chromatographic measurements. Oxide powder was covered and mixed with a granular tin or copper accelerator, burned with oxygen, and the resultant carbon monoxide converted to carbon dioxide. The carbon dioxide was trapped and passed through a thermal conductivity cell, where it was measured.

Chloride Analysis

Chloride was determined by photometric analysis after pyro-hydrolysis (pyro-hydrolysis is decomposition by the combined action of heat and water). As mixed oxide was pyro-hydrolyzed with a stream of moist air or oxygen, the halogens were volatilized and trapped in solution. The chloride could then be measured by spectrophotometry or ion-selective electrodes. The method was applied to the determination of residual chloride on the surface of fuel pin metal components (i.e., end caps, reflector pins, springs, plenum spacers, cladding tubes, and fuel pins).

Fluoride Analysis

Residual fluoride on the surface of fuel pin metal components (i.e., end caps, reflector pins, springs, plenum spacers, cladding tubes, and fuel pins) was determined by extraction into a known volume of a hot solvent followed by a specific ion electrode procedure. Fluoride was also determined using pyro-hydrolysis and the method described above for chloride.

Volatiles Analysis

To analyze volatiles other than water in mixed-oxide pellets, gas was removed from sintered pellets by vacuum extraction in a tungsten crucible at 1,600°C. The gas was then analyzed by mass spectroscopy.

Moisture Content Analysis

Pellets were analyzed for moisture content using coulometrics in an electrolytic diphosphorous pentoxide cell. The pellet was heated to drive off water, and the moisture was carried into the electrolytic cell by a stream of nitrogen. As the moist stream flowed into the cell, an electrical current through the diphosphorous pentoxide was produced and measured.

O/M Analysis

After sintering, the O/M was determined gravimetrically using the Chikalla method. The pellet was heated for 6 hours at 850°C in a hydrogen/helium atmosphere saturated with water vapor at 0°C to produce an O/M of 2.000. The calculated weight change gave the initial O/M value. An alternate method used a modified Lyons method: oxidation at 850°C followed by reduction in an argon atmosphere with 8 percent hydrogen at 950°C.

Phosphorus Analysis

Molybdenum blue photometric method was used to determine phosphorus concentrations in plutonium and mixed oxide powders. Powder was dissolved in nitric and hydrofluoric acids and fumed with oxalic acid. Phosphorus was separated from uranium and plutonium and measured spectrophotometrically as the blue-reduced form of heteropoly molybdophosphoric acid that was separated using n-butanol.

Sulfur Analysis

The sulfur determination involved combustion of mixed-oxide powders using tin, iron, and copper in Leco crucibles in a stream of oxygen to form sulfur dioxide. The sulfur dioxide was swept into an 0.18 N hydrochloric acid solution containing potassium iodide and a blue starch solution. The sulfur dioxide reduced iodine and was automatically titrated with the potassium iodate solution using a colorimetric end point monitor.

Tungsten Analysis

The tungsten content of mixed oxide powders was determined spectrophotometrically as the blue-green dithiol complex, following separation from uranium and plutonium by liquid-liquid extraction using hot hydrochloric acid and pentyl acetate. Waste from this process may contain titanium, chloride, and sulfate. Later, tungsten content was determined by a mass spectrographic procedure using a silver chloride carrier that may create waste contaminated with pentyl acetate, methanol, and acetone.

Rare Earth Analysis

Mixed oxide powders were also analyzed for their rare earth contents by spectrographic analysis after separation from uranium and plutonium by solvent extraction (Rare earths are defined as dysprosium, europium, gadolinium, and samarium). Mixed oxide powder was dissolved in a nitric-hydrofluoric acid mixture and mixed with tri-n-octylamine, yttrium standard, and boric acid crystals. After mixing, the organic phase was removed and the sample evaporated and measured by copper spark spectroscopy. This process may have generated waste contaminated with a tri-n-octylamine-xylene mixture, acetone, and methanol. The metal standards for the analytes may also have contaminated the waste stream.

Nitrogen Analysis

Nitrogen analysis was performed in one of two ways. In the first method, a carrier gas fusion extraction procedure was used to analyze the oxides for metals. Powdered or small pieces of an oxide were fused in a graphite crucible. The nitrogen was released in its elemental form and measured by gas chromatography. In the second method, mixed oxide powders were analyzed using a distillation spectrophotometric procedure, in which the nitrogen compounds are digested using an acid (hydrochloric or phosphoric-hydrofluoric acid solution), neutralized (sodium hydroxide), distilled, and titrated in Nessler's reagent (potassium tetraiodomercurate) to find the nitrogen content. Waste contaminated with chlorides, fluorides, mercury, and excess sodium hydroxide may have been generated during this analysis.

Plutonium/Uranium Isoptopic Analysis

The isotopic compositions of plutonium and uranium were determined by thermal emission mass spectrometry following the separation of plutonium from americium and uranium by anion exchange purification. To dissolve and prepare the sample many substances were used: anion exchange resin, ethylenediamine tetraacetate, hydrofluoric acid, ferrous sulfamate, hydrochloric acid, hydriodic acid, hydroxylamine hydrochloride, nitric acid, perchloric acid, sodium hydroxide, sodium nitrite, and thenoyltrifluoroacetone.

Plutonium Content Analysis

Determination of the plutonium content of plutonium alloys, metal, nitrate, and oxides was accomplished by dissolving the sample (the oxide is dissolved in fuming sulfuric acid), oxidizing the plutonium to the +6 state with silver oxide, and titrating amperometrically with standard ferrous ammonium sulfate solution. This process could have generated waste contaminated with cleaning liquid comprised of sulfuric acid, silver sulfate, iron (III), sodium bisulfate and trace nitric acid. This procedure utilized a reference electrode using hydrogen.

Uranium Content Analysis

Two methods were used for uranium analysis: a phosphoric acid reduction followed by amperometric titration using standardized potassium dichromate for uranium fuel and process materials; and anion exchange separation and photometric method for uranium at concentrations between 300 and 3,000 part per million (ppm) in ceramic grade plutonium oxide and plutonium nitrate solutions. Waste generated during this analysis may have been contaminated with chromium, tin, chloride, and hydroxylamine.

Decontamination and Decommissioning

In March 1980, B&W announced the phase-out of its Plutonium Facility operations and subsequently began the decontamination and removal of equipment in the facility. Decontamination of facility surfaces or the surrounding grounds was not within the scope of this activity. The B&W Facility contained nine fabrication areas and a hot cell. Approximately 95 gloveboxes and hoods were used within these fabrication areas to support the processing activities described above. Table 1 identifies the fabrication areas and provides a general description of operations performed in these areas. The gloveboxes and hoods identified include both TRU and low-level contaminated enclosures. In addition, the facility contained two sintering furnaces and numerous smaller conversion, presintering, drying, vacuum outgassing, and oxidation/reduction muffle type furnaces and analytical laboratory equipment and apparatus.

Table 1 Fabrication Area Operations

Fabrication Area Designation	General Process Description
Fab 1	Gloveboxes to Manufacture FFTF Fuel and Conversion of plutonium nitrate and Analytical Laboratory
Fab 2	Analytical Laboratory
Fab 3	Metallography and Analytical Gloveboxes, R&D for MOX Work
Fab 4	Analytical Laboratory
Fab 5	Analytical Laboratory
Fab 6	Scrap Recovery Ion Exchange Process
Fab 7	Reloading of FFTF Fuel
Fab 8	Warehouse Area
Fab 9	Fuel Pin Cleaning, Inspection & Packaging Drum Warehouse, NMC Operations and Warm Equipment Storage
Hot Cell	Irradiated cladding and sources

Fabrication area 9 was the only area in the plant that contained uncontaminated equipment. This equipment was sold as scrap, unless it was determined to have inaccessible openings or areas that could not be monitored. In these cases the equipment from fabrication area 9 was disposed of at the U.S. Ecology Beatty, Nevada burial site as Low Specific Activity waste. Decontamination of the B&W Facility was performed using chemical and physical means. Chemical decontamination consisted of high pressure spraying, or application of chemicals to contain or limit contamination. Nutex-600EL (also known as NUTEC) containing glycols, polyethylene, mono (P-[1,1,3,3-Tetramethyl, Butyl]phenyl) Ether (Triton X), nonylphenol polyethoate, and benzotriazole) was used as a decontamination (degreasing) agent to pressure-wash the internal surface of the gloveboxes. Physical decommissioning consisted of disassembly and subsequent removal of contaminated gloveboxes and equipment.

Glovebox Decontamination and Decommissioning

Gloveboxes were decontaminated by first sweeping all powders from surfaces and then cutting the fingers off the gloves to eliminate air pockets during volume reduction. Paper, plastic, and cloth were removed from the glovebox at this point. Glassware was placed in metal containers, crushed, and then double bagged. Metal cans were cleaned with a wire brush, the interior and exterior were painted with a latex paint, allowed to dry, and then size reduced. Large equipment pieces within the gloveboxes were prepared by first cleaning to remove loose powders then further decontaminated to remove the smearable contamination. Sharp edges on glovebox/hood equipment were filed down, or covered with tape if filing was not possible. The pieces of equipment were painted and allowed to dry.

After decontamination, all equipment within the glovebox was removed and prepared for storage/disposal. The interior surfaces of the gloveboxes, that were not disassembled, were then decontaminated, by application of a decontamination agent, to levels less than or equal to 150,000 disintegrations per minute (dpm)/100 square centimeters (cm^2) of smearable surface contamination, or until successive decontamination cleaning operations did not reduce the smearable contamination levels by more than 10 percent. After decontamination, the gloveboxes were coated, inside and out, with a fixative such as Poly Vinyl Alcohol (PVA), paint, or lacquer to reduce smearable surface contamination to less than 10,000 dpm/100cm^2 and allowed to dry.

In total, 56 gloveboxes were decontaminated, disassembled, cut into pieces, placed in plastic, PVC bags, and smeared before packaging in steel burial crates or 55-gallon drums. The remaining 39 gloveboxes were placed intact into steel burial crates.

HEPA Filter Decontamination and Decommissioning

All HEPA filters at the B&W Facility were externally connected to the gloveboxes and hood ventilation system. These filters had external nipples, or sleeves, that were bagged on to the ductwork of the gloveboxes, hoods, and ventilations system. The filters came in two sizes: 12" x 12" x 18" (primary filters) and 24"x 24" x 20" (final filters). Filters were used on gloveboxes containing dry powders or liquids and served as primary filters on the glovebox exhaust. Final filters were used as external exhaust systems and were located throughout the production area. Filters removed from gloveboxes where liquids were processed, such as the scrap or conversion line, contained less than 2 grams of plutonium per filter. Filters removed from dry gloveboxes that processed plutonium oxide and mixed-oxide powders contained as much as 150 grams of plutonium each.

Prior to disassembly, all filters were assayed using Germanium-Lithium detectors for gamma counting. These values served as an initial gross scan for sorting out filters with greater than 10 grams of plutonium. Sodium iodide detectors were used later to determine gamma information prior to shipment. Dry glovebox filters containing more than 10 grams plutonium were physically taken apart, removing the wood frame and filter media. Powder in the plenum was swept up and marked for scrap recovery. After the filters were disassembled, Nondestructive Assay (NDA) was performed. The filter media, contaminated with residual powders, were size reduced and packaged separately from the wood. Both the size reduced filter media and the wood were packaged in 55-gallon drums.

By physically breaking the filters apart, the waste volume was reduced by a factor of five. Filters removed from dry gloveboxes were found to contain as much as 60 g of loose plutonium powder. Exclusive of the loose powder, 80–90 percent of the total plutonium in the filter was tied up within the filter media; the balance was in the wood and floor sweeps. During a 12 month time frame, up to 75 filters had been generated from the plutonium oxide and mixed-oxide process line.

B&W Waste Repackaging at Hanford

All of the B&W waste in CCP waste stream RLBWD.001 has been or will be repackaged at the T Plant or Waste Receiving and Processing Plant (WRAP).

At T-Plant, repackaging operations are performed under the drum inspection hood or within a glove bag. As necessary, and if the condition is readily accessible and can be remediated under the inspection hood, the prohibited item is removed (and bagged into the glove bag for later processing) or the noncompliant condition is remediated, all layers of confinement are breached, and the drum lid is replaced. To prevent cross contamination between waste streams, the glovebags are collapsed and added to a waste container, along with any equipment that cannot be reused, and becomes part of the waste (References P1038 and P1039).

Some drums may be repacked at the WRAP facility in a glovebox. A sorting table is used to sort waste while repackaging. Only the contents of one drum at a time are allowed on the sorting table, and the sorting table and glovebox are cleaned each time a new waste stream is introduced. Waste that is repacked at the WRAP facility will be placed into a double-lidded drum with a filtered inner lid and have zero layers of confinement. These are referred to as "one-trip" drums (References P1088 and P1089).

The inventory included in CCP waste stream RLBWD.001 has been or will be repackaged at WRAP, or repackaged at T Plant after 2008, and therefore will have zero layers of confinement (References C444, P1088, and P1098.

Table 2 identifies toxicity characteristic (TC) and F-listed constituents in waste stream. RLBWD.001

Table 2 –TC and F-Listed Constituents in Waste Stream RLBWD.001

Chemical	CAS Number	EPA Hazardous Waste Numbers
Barium	7440-39-3	D005
Cadmium	7440-43-9	D006
Chromium	7440-47-3	D007
Lead	7439-92-1	D008
Mercury	7439-97-6	D009
Methyl Ethyl Ketone	78-93-3	F005
Methylene Chloride	75-09-2	F001, F002
Silver	7440-22-4	D011
Toluene	108-88-3	F005

RCRA Determinations - Hazardous Waste Determinations

Historical Waste Management

Based on historical waste management, the original site HWN assignments for B&W debris waste (waste stream RLCBWD.001) have been maintained with the exception of F003 constituents. Chemicals including acetone, methanol, n-butyl alcohol, and xylene, are listed solely because these solvents are ignitable in the liquid form. The waste stream will not exhibit the characteristics of ignitability because it is not liquid; therefore, F003 is not assigned.

Ignitability, Corrosivity, Reactivity

Waste generated in this waste stream does not qualify for any of the exclusions outlined in 40 Code of Federal Regulations (CFR) 260 or 261. Real Time Radiography (RTR) is used to verify that the waste stream is not a liquid waste and does not contain explosives, non-radioactive pyrophoric materials, compressed gases or reactive waste. Therefore, this waste stream does not exhibit the characteristic for ignitability (D001), corrosivity (D002), or reactivity (D003).

Ignitability

The waste does not exhibit the characteristic of ignitability as identified in 40 CFR 261.21. The materials are not liquid, compressed gases, or oxidizers, and are not capable of causing fire through friction, absorption of moisture, or spontaneous chemical change. The materials are not liquid, and RTR is performed to ensure the absence of prohibited liquids.

Ignitable liquids including methanol, acetone, Xylene, and butyl alcohol were used in the processes that generated the waste. B&W waste management practices and Hanford repackaging operations resulted in the absorption, deactivation, and solidification, as necessary, of organic and inorganic liquids and sludges, including potentially ignitable liquids (References C444, M279, P679, P684, P700, P1054, P1088, and P1089).

Oxidizers, including perchloric acid, were used in laboratory processes that generated this waste. Oxidizers were neutralized by absorption with cement or vermiculite. (References P279, P700, P745)

To ensure the waste does not exhibit the characteristic of ignitability, liquid in excess of TSDF-WAC limits will be removed or immobilized, and compressed gases (e.g., aerosol cans) will be removed or vented prior to WIPP disposal. Therefore, this waste does not exhibit the characteristic of ignitability (D001).

Corrosivity

This waste does not exhibit the characteristic of corrosivity as defined in 40 CFR 261.22. The materials are not liquid, and RTR is performed to ensure the absence of prohibited liquids.

Corrosive liquids including nitric acid, hydrofluoric acid, hyriodic acid, perchloric acid, and sodium hydroxide were used in the processes that generated the waste. Based on a review of the AK record relating to the characterization of this waste stream and Hanford repackaging operations, B&W waste management practices and Hanford repackaging operations resulted in the immobilization of organic and inorganic liquids and sludges through solidification and neutralization, including potentially corrosive liquids (References C444, M279, P679, P684, P700, P1054, P1088, and P1089).

To ensure the waste does not exhibit the characteristic of corrosivity, liquid in excess of TSDF-WAC limits will be removed or immobilized prior to WIPP disposal. Therefore, this waste does not exhibit the characteristic of corrosivity (D002).

Reactivity

This waste stream does not meet the definition of reactivity as defined in 40 CFR 261.23. The materials are stable and will not undergo violent chemical change. The materials will not react violently with water, form potentially explosive mixtures with water, or generate toxic gases, vapors, or fumes when mixed with water, and is not capable of detonation or explosive reaction (Reference M279).

Materials from the B&W operations and D&D processes do not exhibit the characteristic of reactivity. Laboratory use of mercuric thiocyanate and sodium cyanide would have produced a waste insufficient in cyanide concentration to generate toxic gas, vapor or fume that presents a danger to human health or the environment. Based on a review of the AK documentation, no use or source for reactive sulfides was identified (Reference M279).

Based on a review of the AK record relating to the characterization of this waste stream and Hanford repackaging operations, B&W waste management practices and Hanford repackaging operations resulted in the immobilization of organic and inorganic liquids and sludges, including potentially reactive liquids (References C444, M279, P679, P684, P700, P1054, P1088, and P1089). To ensure the waste does not exhibit the characteristic of reactivity, liquid in excess of TSDF-WAC limits will be removed or immobilized, and compressed gases (e.g., aerosol cans) will be removed or vented prior to WIPP disposal. Therefore this waste does not exhibit the characteristic reactivity (D003).

Toxicity Characteristic

This waste stream exhibits the characteristic of toxicity per 40 CFR 261.24. The toxicity characteristic contaminants fall into two categories; metals and organics. Where a constituent has been identified and there is no quantitative data available to demonstrate that the concentration is below regulatory threshold, the applicable EPA HWN are applied to the waste stream.

The waste stream contains or is contaminated with toxicity characteristic metals. EPA HWNs D005 (barium), D006 (cadmium), D007 (chromium), D008 (lead), D009 (mercury), and D011 (silver) are assigned to waste stream RLBWD.001. Waste Disposal Records and Contents Inventory Sheets for containers assigned to waste stream RLBWD.001 identify the presence of barium (D005) from moisture analysis, chromium (D007) from uranium analysis, and silver (D011) for plutonium and tungsten analyses on the mixed oxide pellets. Cadmium is a constituent of nickel-cadmium batteries that are present in the waste stream and the D006 hazardous waste number is assigned to this waste stream. The lead HWN (D008) was assigned because of the leaded rubber gloves used in glovebox operations. Mercury (D009) from thermostats, dry cell batteries, and nitrogen and plutonium analyses of the pellets was identified as a potential contaminant from facility process and D&D waste. No other source for RCRA metals was identified during the AK review (References M220, M279, P679, P700, and P745).

The AK sources identified the use of the toxicity characteristic compound methyl ethyl ketone (D035). The EPA HWN is assigned to the waste stream for the F-listed solvent use for methyl ethyl ketone (F005). Because the more specific F-listed EPA HWN has been assigned, the corresponding toxicity characteristic HWN D035 is not assigned (References M279, P611, and P679).

F-Listed Waste

Waste stream RLBWD.001 was mixed with or derived from F-listed hazardous waste from non-specific sources as listed in 40 CFR 261.31. Kleen Strip was used to remove paint from plant walls and other surfaces; therefore, F001 and F002 are assigned to this waste stream. TURCO steam cleaning solution contains acetone and toluene (F005) at greater than 10 percent concentrations before use. NUTEC was used as a cleaning agent/paint stripper containing acetone, methanol, methyl ethyl ketone (F005), and toluene (F005); therefore, the hazardous waste number (HWN) F005 was assigned (References M279, P610, P611, P679, and P743).

While there were no large scale degreasing operations conducted at B&W, F001 is applied to this waste for methylene chloride used for its solvent properties (cleaning and paint stripping), consistent with similar Hanford waste that has already been shipped to WIPP. F003 constituents, including acetone methanol, n-butyl alcohol, and xylene, are listed solely because these solvents are ignitable in the liquid form. The waste stream does not exhibit the characteristic of ignitability because it is not liquid; therefore, F003 is not assigned to waste stream RLBWD.001.

U, K, and P-Listed Chemicals

Waste materials from operations from B&W were determined not to be mixed with a discarded commercial chemical product, an off-specification commercial chemical product, or a container residue or spill residue thereof (40 CFR 261.33) P- and U-listed reagents including acetone (U002), hydrofluoric acid (U134), and xylene (U239) were managed by the laboratory. However, no pure product or unused chemicals would have been placed into the TRU waste stream. The review of the AK source documentation did not identify the disposal of unused hydrofluoric acid or disposal of materials contaminated with spills of this acid; therefore the EPA HWN U134 is not assigned to this waste stream (Reference P1054).

There is a potential for beryllium to be present in the RLBWD.001 waste stream as a trace impurity in the plutonium and plutonium oxides. Based on the AK documentation reviewed, the form of beryllium used does not meet the definition of commercial chemical product beryllium powder (40 CFR 261.33). Therefore, the waste stream does not meet the definition of P015 waste (Reference P1054).

The material in waste stream RLBWD.001 is not a hazardous waste from any of the manufacturing process wastes from the specific industries or sources listed in 40 CFR 261.32 (Reference P1054).

Waste Stream RLBWD.001 is not assigned any U-, K-, or P-Listed EPA HWNs.

Headspace Gas/Volatile Organic Compound Information

Headspace gas sampling has been performed on 10 randomly selected containers in Lot 1 in this waste stream. No UCL_{90} values exceeded respective target analyte Program Required

Quantitation Limits. No tentatively identified compounds were identified in this lot. No New EPA hazardous waste numbers were assigned as a consequence of headspace gas sampling and analysis. The specifics of this information are included in the attached Characterization Information Summary report.

Other Waste Streams Generated from the Same Building and Process

Waste stream RLCBWD.001 (Richland Consolidated Babcock & Wilcox Debris), previously certified and shipped under the Hanford TRU Waste program from the B&W facility is similar in physical form and hazardous constituents to the waste stream RLBWD.001.

Conclusion

The following EPA HWNs are assigned to this waste stream: D005, D006, D007, D008, D009, D011, F001, F002, and F005.

Polychlorinated Biphenyls

Some of the containers assigned to this waste stream may be contaminated with polychlorinated biphenyls (PCBs), and therefore are regulated as Toxic Substances Control Act waste under 40 CFR 761. The containers are contaminated with PCB Bulk Product waste including but not limited to demolition debris, fluorescent light ballasts, adhesives, applied dried coatings and plastics. The containers would have been contaminated when PCB contaminated articles were placed in containers during housekeeping, cleanout and maintenance activities, stabilization, and D&D activities. Containers that contain PCBs or contain suspect PCB waste items (e.g., light ballasts, capacitors, pumps) identified during RTR that were not originally identified in the generator container documentation, will be managed in accordance with the PCB disposal requirements in the WIPP-WAC (Reference P1054).

Prohibited Items

The absence of prohibited items is determined and documented through acceptable knowledge and characterization activities. Radiography is performed on each container to verify the absence of prohibited items. The following items have been determined as not present in the waste:

- Liquid waste
- Non-radioactive pyrophoric materials
- Hazardous waste not occurring as co-contaminants with TRU mixed wastes (non-mixed hazardous waste)
- Waste incompatible with backfill, seal and panel closure materials, container and packaging materials, or other wastes
- Explosives or compressed gases
- Waste with PCBs not authorized under an EPA PCB waste disposal authorization
- Wastes exhibiting the characteristics of ignitability, corrosivity, or reactivity
- Waste that has ever been managed as high-level waste and waste from tanks specified in Table C-8 of the WIPP HWFP, unless specifically approved through a Class 3 permit modification.

Each container of waste is certified and shipped only after RTR either:

- Did not identify any prohibited items in the waste container, or
- All prohibited items found in a waste container by radiography are identified and corrected through the site non-conformance reporting system.

Justification for the Selection of Radiography

Radiography will be used to characterize RLBWD.001 waste. Radiography is an acceptable characterization method for S5000. Radiography meets the Data Quality Objectives for NDE of S5000 waste.

Method for Determining Waste Material Parameter (WMPs) Weights Per Unit of Waste

The Waste Material Parameters (WMPs) for waste stream RLBWD.001 were derived from 580 containers of B&W debris waste (waste stream RLCBWD.001) processed under the previous Hanford certified TRU Waste Program. Existing Hanford WWIS data was evaluated and a range was generated based on the WWIS data.

This WMPs, average weight percent and weight percent range are presented in Table 3.

This WMP parameters evaluation is documented in a memorandum as required by CCP-TP-005, *CCP Acceptable Knowledge Documentation.*

Table 3 Waste Stream RLBWD.001 Waste Material Parameters

Waste Material Parameter	Average Weight Percent	Weight Percent Range
Iron-based Metals/Alloys	37.8%	0 – 99.2%
Aluminum-based Metals/Alloys	0.2%	0 – 14.7%
Other Metals	2.8%	0 – 86.3%
Other Inorganic Materials	27.3%	0 – 99.2%
Cellulosics	13.4%	0 – 90.9%
Rubber	3.4%	0 – 43.5%
Plastics (waste materials)	15.1%	0 – 84.8%
Inorganic Matrix	trace	NA
Organic Matrix	trace	NA
Soils/Gravel	trace	NA

List of AK Sufficiency Determinations

No AK Sufficiency Determinations were requested 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

The level of beryllium contamination in individual drums is expected to be less than one weight percent. Waste determined to contain greater than one weight percent of beryllium will be managed in accordance with the WIPP-WAC.

Radionuclide Information

The two predominant radionuclide's by mass in the RLBWD.001 waste stream are Pu-239 and U-238. Previous characterization results provided by Hanford were evaluated to determine the radionuclide distribution in the waste stream. The result of this evaluation identified the isotopes listed in Table 4.

Table 4 – Radionuclides in Waste Stream RLBWD.001

WIPP Tracked	Other Radionuclides
Am-241	Am-243
Cs-137	Cm-243
Pu-238	Co-60
Pu-239	Eu-152
Pu-240	Eu-154
Pu-242	K-40
Sr-90	Na-22
U-233	Np-237
U-234	Pu-241
U-238	Ra-226
	U-232
	U-235

Payload management will not be applied to this waste stream.

Attachment 1, AK Source Documents – Additional Documentation

Source Doc. Tracking Number	AK Element #	Title	Document Number	Rev.	Date
C013	S7, S9	Interview of Michael Wesselman by Richard Clinton concerning Sr-90/Cs-137 Ratio Determination	NA	NA	03/28/2002
C037	S2	Memorandum from R Clinton to PJ Crane concerning Transmittal of AK Re-eval Checklist for Waste Stream NPFPD	3T000-PJC-01-043	NA	03/21/2001
C051	S5	Sr-90 to Cs-137 Ratio for Appendix E of Hanford Site Transuranic Waste Certification Plan for NDA	M4T00-PJC-02-276	NA	04/11/2002
C272	S10	Record of Communication for B&W Plutonium Facility Waste Receipt and Processing at Hanford	NA	NA	09/27/2004
C360	S7	Email from NR McCants to SA Nance re: labeling	NA	NA	01/25/2010
C444	N/A	Evaluation of B&WQ Repackaging at Hanford	NA	NA	4/12/2011
M220	S4	Waste Shipment to Hanford Retrievable storage from B&W, Leechburg, Pennsylvania	WHC-EP-0719	NA	02/01/1994
M277	S4, S9	Babcock and Wilcox (B&W) Heat Sealed Bag Evaluation	NA	NA	08/01/2006
M279	NA	Memo – Babcock and Wilcox Mixed Debris Waste Designation	BW-DESDI-01-01	NA	1/18/2006
P113	S4	A History of Solid Waste Packaging at the Hanford Site	WHC-SA-2772-FP	NA	02/01/1995
P198	S2, S4	T Plant Operating Procedure Package Transuranic Waste	DO-100-039	NA	05/04/2006
P276	S4	Contact Handled Transuranic Waste Characterization Based on Existing Records	WHC-EP-0225	Rev. 1	02/01/1990
P585	S4	Hanford Radioactive Solid Waste Packaging, Storage and Disposal Requiremetns	RHO-MA-222	Rev. 2	07/01/1984
P610	S10	MSDS: Klean Strip (KS)-3 Paint Remover	NA	NA	12/03/1991
P611	NA	MSDS Semi Paste Paint and Varnish Stripper	NA	NA	09/05/1994
P621	S5	Nuclear Material Management Branch Monthly Report for June 1973	PWM-550 #6	NA	06/30/1973

Source Doc. Tracking Number	AK Element #	Title	Document Number	Rev.	Date
P679	S4	Technical Data Summary Report on Decontamination and Removal of Equipment in the Parks Township Site Plutonium Facility	NA	NA	05/01/1983
P684	S4	Treatment, Packaging, and Safety Evaluation for Transporting Hard Equipment Waste	810413074 5	NA	03/30/1981
P700	NA	Waste Generated During Fabrication of Mixed Oxide Nuclear Fuels	HEDL-TME-78-71	NA	10/1978
P723	S4	DOE Waste Manifest Designation for Parks Township LLW	NA	NA	06/04/1998
P743	S10	MSDS for TURCO 4305	27589	NA	04/08/1982
P745	S2	1982 Annual Book of ASTM Standards Part 45 Nuclear Standard	3 3679 00029 7988 Part 45	NA	1982
P1050	S3	Spent Nuclear Fuel Project, Interim Storage Area Criticality Prevention Specification	Standard 313	Rev. 1	05/03/2001
P1054	S10	Designation of B&W Heterogeneous Debris Waste Stream	NA	NA	09/01/2004
P1096	S10	MSDS – TURCO Plauduit/Pelton and Crane Omni Cleaner	NA	NA	09/23/1994
P1106	S5	One-Trip System Test Report	SD-W026-TRP-014	Rev. 0	03/01/1994

Alphanumeric Designations

C	Correspondence
D	Documents (e.g. published reports)
DR	Discrepancy Resolution
M	Miscellaneous (e.g. unpublished data)
P	Procedures
U	Unpublished Documents

AK Numbers

S1	Process Design Documents
S2	Standard Operating Procedure
S3	Safety Analysis Reports
S4	Waste Packaging Logs
S5	Test plans/research project reports
S6	Site databases
S7	Information from site personnel
S8	Standard industry documents
S9	Previous analytical data
S10	Material safety data sheets
S11	Laboratory Notebooks
S12	Comparable or surrogate sampling and analysis data
NA	Not applicable