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

OCT 14

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 the Central Characterization Project-Savannah River Site Waste Stream Profile SR-BCLDP.004.002, Battelle Columbus Laboratories Decommissioning Project Remote Handled Transuranic Cartridge Water Filters from the Building JN-1 Hot Cell Laboratory Transfer and Storage Pool

Dear Mr. Bearzi:

The Department of Energy Carlsbad Field Office has approved the Waste Stream Profile Form, SR-BCLDP.004.002, Battelle Columbus Laboratories Decommissioning Project (BCLDP) Remote Handled Transuranic Cartridge Water Filters from the Building JN-1 Hot Cell Laboratory Transfer and Storage Pool.

Enclosed is a copy of the form as required by Section B-5a of the WIPP Hazardous Waste Facility Permit No. NM4890139088-TSDF.

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

Sincerely,

Roger A Nelson 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
P. Martinez, CTAC ED
P. Gilbert, LANL ED
G. Lyshik, LANL ED
C. Walker, TechLaw ED
CBFO, M&RC

CBFO:NTP:JRS:GS:10-1576:UFC 5900.00

101031

Attachment 2 –CCP Waste Stream Profile Form

(1) Waste Stream Profile Number: SR-BCLDP.004.002						
(2) Generator site name: Savannah River Site					(4)Technical contact: Irene Quintana	
(3) Generator site EPA ID: SC1890008989					(6) Technical contact phone number: 303-843-2165	
(5) Date of audit report approval by New Mexico Environment Department (NMED): October 25, 2007; March 13, 2009, August 6, 2009, March 16, 2010						
(7) Title, version number, and date of documents used for WAP Certification: CCP-PO-001, CCP Transuranic Waste Characterization Quality Assurance Project Plan, Revision 18, June 30, 2010 CCP-PO-002, CCP Transuranic Waste Certification Plan, Revision 24, June 30, 2010 CCP-PO-004, CCP/SRS Interface Document, Revision 27, May 22, 2009						
(8) Did your facility generate this waste?	YES		NO	X		
(9) If no, provide the name and EPA ID of the original generator: Battelle Memorial Institute – West Jefferson North Site, OHT400013892						
Waste Stream Information[1]						
(10) WIPP ID: SR-BCLRH-T002					(11) Summary Category Group: S5000	
(12) Waste Matrix Code Group: Filters					(13) Waste Stream Name: Battelle Columbus Laboratories Decommissioning Project (BCLDP) Remote Handled Transuranic Cartridge Water Filters from the Building JN-1 Hot Cell Laboratory Transfer and Storage Pool	
(14) Description from the TWBIR: Pool Water Prefilters and Debris consists of the cartridge prefilters and debris generated during the change-out of resin used for filtering the Transfer/Storage Pool water. The filter matrix is composed of glass and cellulose fibers combined with melamine resin. The end caps are polypropylene and the filters are placed in the canisters with rubber gaskets (butyl/nitrile). Other debris that may be present from the original packaging may include paper (blotter paper and Floor Dry bags), plastic liners, rubber gaskets, muslin resin bags, rubber gloves, and other miscellaneous plastic, cellulosics, and metal materials. The waste matrix will also include Floor Dry and Radsorb added during repackaging to absorb any water from condensation or dewatering.						
(15) Defense TRU Waste:	YES	X	NO			
(16) Check One:	CH		RH	X		
(17) Number of SWBs: N/A	(18) Number of Drums: NA				(19) Number of Canisters: 2[3]	
(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] D004, D005, D006, D007, D008, D009, D011, D019, F002, F005						
(22) Applicable TRUCON Content Numbers: SR 319						
(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-SRS-540, Revision 1, June 10, 2009, Attachments 1, 2 & 3						
(23B) Facility mission description: CCP-AK-SRS-540, Revision 1, June 10, 2009, Section 4.1						
(23C) Description of operations that generate waste: CCP-AK-SRS-540, Revision 1, June 10, 2009, Section 4.2.2						

(23D) Waste identification/categorization schemes: CCP-AK-SRS-540, Revision 1, June 10, 2009, Section 5.4			
(23E) Types and quantities of waste generated: CCP-AK-SRS-540, Revision 1, June 10, 2009, Section 4.2.1			
(23F) Correlation of waste streams generated from the same building and process, as applicable: SR-RL-BCLDP.001, SR-BCLDP.001.001, SR-BCLDP.001.002, SR-BCLDP.002, SR-BCLDP.003, SR-BCLDP.004.003			
(24) Waste certification procedures: CCP-TP-530, Revision 9, CCP RH TRU Waste Certification and WWIS/WDS Data Entry, December 11, 2009			
(25)Required Waste Stream Information			
(25A) Area(s) and building(s) from which the waste stream was generated: CCP-AK-SRS-540, Revision 1, June 10, 2009, Section 5.1			
(25B) Waste stream volume and time period of generation: CCP-AK-SRS-540, Revision 1, June 10, 2009, Section 5.2			
(25C) Waste generating process description for each building: CCP-AK-SRS-540, Revision 1, June 10, 2009, Section 4.2.2 and 5.4			
(25D) Waste Process flow diagrams: CCP-AK-SRS-540, Revision 1, June 10, 2009, Attachment 5			
(25E) Material inputs or other information identifying chemical/radionuclide content and physical waste form: CCP-AK-SRS-540, Revision 1, June 10, 2009, Sections 5.4			
(25F) Waste Material Parameter Weight Estimates per unit of waste: See Table 2 of the Summation of Aspects of AK Summary Report: SR-BCLDP.004.002			
(26) Which Defense Activity generated the waste: (check one)[4]			
	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: See S1 AK#s on Attachment 1 to Summation of Aspects of AK Summary Report			
(27B) Standard operating procedures: See S2 AK#s on Attachment 1 to Summation of Aspects of AK Summary Report			
(27C) Safety Analysis Reports: See S3 AK#s on Attachment 1 to Summation of Aspects of AK Summary Report			
(27D) Waste packaging logs: See S4 AK#s on Attachment 1 to Summation of Aspects of AK Summary Report			
(27E) Test plans/research project reports: See S5 AK#s on Attachment 1 to Summation of Aspects of AK Summary Report			
(27F) Site databases: See S6 AK#s on Attachment 1 to Summation of Aspects of AK Summary Report			
(27G) Information from site personnel: See S7 AK#s on Attachment 1 to Summation of Aspects of AK Summary Report			
(27H) Standard industry documents: See S8 AK#s on Attachment 1 to Summation of Aspects of AK Summary Report			
(27I) Previous analytical data: See S9 AK#s on Attachment 1 to Summation of Aspects of AK Summary Report			
(27J) Material safety data sheets: See S10 AK#s on Attachment 1 to Summation of Aspects of AK Summary Report			
(27K) Sampling and analysis data from comparable/surrogate Waste: See S12 AK#s on Attachment 1 to Summation of Aspects of AK Summary Report			

(27L) Laboratory notebooks: See S11 AK#s on Attachment 1 to Summation of Aspects of AK Summary Report	
Confirmation Information[2]	
For the following, when applicable, enter procedure title(s), number(s) and date(s)	
(28)	Radiography: NA
(29)	Visual Examination: CCP-TP-500, Revs. 7, 2/27/2008 and 8, 7/24/2008

(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: 10/5/2010**

Reviewed by STR (if necessary): YES [X] NA [ ] **Date: 10/5/2010**

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)	(32) Irene Quintana	(33) 10/5/10
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 stream consists of 5 55-gallon drums that will be loaded into 2 RH canisters.
(4) This waste was also generated by the following defense activity: defense research and development.

CHARACTERIZATION INFORMATION SUMMARY

WSPF # SR-BCLDP.004.002

Lot 1

TABLE OF CONTENTS

CCP Characterization Information Summary Cover Page

Waste Stream #: SR-BCLDP.004.002 Lot #: 1

AK Expert Review: Kevin Peters Date: 10/5/2010

SPM Review: Irene Quintana Date: 10/5/2010

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)

NA

Headspace Gas Sampling and Analysis (HSG):

Scenario 3 Acceptable Knowledge Sufficiency Determination Request approval by the Permittees on September 27, 2010

Visual Examination (VE):

CCP-TP-500	Rev. 7	02/27/08	CCP Remote-Handled Waste Visual Examination
CCP-TP-500	Rev. 8	07/24/08	CCP Remote_handled Waste Visual Examination

Project Level Data Validation / DQO Reconciliation:

CCP-TP-002	Rev. 22	6/30/2010	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-005	Rev. 19	07/08/10	CCP Acceptable Knowledge Documentation
CCP-TP-005	Rev. 18	11/16/08	CCP Acceptable Knowledge Documentation
CCP-TP-530	Rev. 9	12/11/09	CCP RH TRU Waste Certification and WWIS/WDS Data Entry

WAP Certification:

CCP-PO-001	Rev. 18	06/30/10	CCP Transuranic Waste Characterization Quality Assurance Project Plan
CCP-PO-004	Rev. 27	5/22/2009	CCP/SRS Interface Document

WAC Certification:

CCP-PO-002	Rev. 24	6/30/2010	CCP Transuranic Waste Certification Plan

CIS 3

CCP Correlation of Container Identification Numbers to Batch Data Report Numbers

Waste Stream: # SR-BCLDP.004.002 Lot # 1

Container ID Number	Historical Container ID	NDA BDR or Radiological Characterization BDR (CH only)	RTR BDR	VE BDR	Solids Sampling BDR	Solids Analytical BDR	Load Management/ Overpack Yes	[1]Permit Required Headspace Gas BDR			
								Sample	Analysis		
BC0001	NA	NA	NA	RHSRSVE080002	NA	NA		NA	NA	NA	NA
BC0009	NA	NA	NA	RHSRSVE080002	NA	NA		NA	NA	NA	NA
BC0012	NA	NA	NA	RHSRSVE080002	NA	NA		NA	NA	NA	NA
BC0017	NA	NA	NA	RHSRSVE080002	NA	NA		NA	NA	NA	NA
BC0021	NA	NA	NA	RHSRSVE080002	NA	NA		NA	NA	NA	NA

[1] Permit Head Space Gas Sampling is not required for SR-BCLDP.004.002 per Scenario 3 Acceptable Knowledge Sufficiency Determination Request approved by the Permittees on September 27, 2010.

Signature of Site Project Manager

Irene Quintana — Printed Name

10/5/2010 — Date

CCP RTR/VE Summary of Prohibited Items and AK Confirmation

Waste Stream Number: SR-BCLDP.004.002 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.	Radiography was not performed on these containers.	None of the containers in this Lot had prohibited items identified during Visual Examination.

a. See Batch Data Reports

Justification for the selection of RTR and/or VE: Visual examination of the BCLDP media was the appropriate method for characterizing this waste stream because visual examination was performed by BCLDP at the time of packaging and the data quality objectives for visual examination were achieved.

Site Project Manager Signature	Irene Quintana	10/5/2010
	Printed Name	Date

CCP Reconciliation with Data Quality Objectives

WSF# SR-BCLDP.004.002 Lot # 1

Sampling Completeness

VE

Number of Valid Samples: 5 Number of Total Samples Analyzed: 5
Percent Complete: 100 (QAO is 100%)

RTR

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

HSG

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

Total VOC

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

Total SVOC

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

Total Metals

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

CCP Reconciliation with Data Quality Objectives

WSF# SR-BCLDP.004.002 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	Y	AK Sufficiency. Is there an approved AK Sufficiency Determination for this waste stream?
6	NA[1]	Mean concentrations, UCL90 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 Environmental Protection Agency (EPA) Hazardous Waste Numbers were assigned as required. Samples were randomly collected (when appropriate).
7a	NA	Mean concentrations, UCL90 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 Hazardous Waste Numbers were assigned as required. Samples were randomly collected.
7b	NA	Mean concentrations, UCL90 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 Hazardous Waste Numbers were assigned as required. Samples were randomly collected.
7c	NA	Mean concentrations, (UCL90) 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 Hazardous Waste Numbers were assigned as required. Samples were randomly collected.

CCP Reconciliation with Data Quality Objectives

WSF# SR-BCLDP.004.002 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	NA	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	NA1	TICs were appropriately identified and reported in accordance with the requirements of Section B3-1 of the QAPjP.
13	NA1	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 CCP-PO-001 Sections B3-2 through B3-9 prior to submittal of a waste stream profile form for a waste steam or waste stream lot.

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

Comments: 1. Permit requied HSG not required for SR-BCLDP.004 002 per Scenario 3 Accetable Knowledge Sufficiency Determination Request approved by the Permittees on September 27, 2010

Irene Quintana

Signature of Site Project Manager

Irene Quintana

Printed Name

10/5/2010

Date

SUMMATION OF ASPECTS OF AK SUMMARY REPORT: SR-BCLDP.004.002

Overview

Waste Stream SR-BCLDP.004.002 is remote handled (RH) mixed heterogeneous debris waste (cartridge water filters) generated during decontamination and decommissioning (D&D) operations of the Transfer and Storage Pool located in Building JN-1 Hot Cell Laboratory at the Battelle Memorial Institute – West Jefferson North Site, West Jefferson, Ohio. The debris was generated in 1999 and is stored at the Savannah River Site (SRS).

Experiments relating to radiation performance of materials were historically conducted in the Building JN-1Hot Cell Laboratory. The research consisted primarily of reactor fuel studies that evaluated materials such as uranium, thorium, and plutonium alloys and compounds thereof, in pellet, dispersion, and ceramic form. Control rod material studies included rare-earth absorbers such as europium titanate dispersions in stainless steel. Structural and cladding material studies evaluated stainless steel, zirconium (Zircaloy), nickel alloy, refractory metal, and pressure vessel steel. The Transfer and Storage Pool was used to receive, store, transfer, and examine fuel assemblies. The pool was also used for the extended storage of fuel assemblies sent to Building JN-1 for examination.

Waste stream SR-BCLDP.004.002 was generated from defense related activities. Defense related activities conducted in Building JN-1 Hot Cell Laboratory at the Battelle Memorial Institute included atomic energy defense activities associated with naval reactor development and defense research and development. Waste stream SR-BCLDP.004.002 was generated in support of these defense related activities.

This Summation of the AK Summary Report includes information to support Waste Stream Profile Form (WSPF) number SR-BCLDP.004.002 for Remote Handled (RH) TRU composite filter debris waste. The primary source of information for this Summation is CCP-AK-SRS-540, Central Characterization Project Acceptable Knowledge Summary Report For: *Battelle Columbus Laboratories Decommissioning Project (BCLDP) Remote-Handled Transuranic Waste From the Building JN-1 Hot Cell Laboratory Transfer and Storage Pool, Waste Streams: SR-BCLDP.004.002-Cartridge Water Filters and SR-BCLDP.004.003- Tri-Nuc Vacuum Filters*, Rev. 1, June 10, 2009. CCP-AK-SRS-540 includes information obtained from numerous sources, including facility safety basis documentation, historical document archives, generator and storage facility waste records and documents, program/processing documentation, and interviews with knowledgeable personnel.

Waste Stream Identification Summary

Waste Stream Name:	Battelle Columbus Laboratories Decommissioning Project (BCLDP) Remote Handled Transuranic Cartridge Water Filters from the Building JN-1 Hot Cell Laboratory Transfer and Storage Pool

Waste Stream Number:	SR-BCLDP.004.002
Site Where TRU Waste Was Generated:	Battelle Memorial Institute – West Jefferson North Site, West Jefferson, Ohio
Site Where TRU Waste Is Currently Stored:	Savannah River Site
Facility Where TRU Waste Was Generated:	Building JN-1 Hot Cell Laboratory at Battelle Memorial Institute – West Jefferson North Site
Waste Stream Volume – Current:	2 canisters[1]
Waste Stream Volume – Projected:	0 canisters
TRUCON Content Numbers:	SR 319
Dates of Waste Generation:	1999
Summary Category Group:	S5000 – Debris Waste
Waste Matrix Code:	S5410- Composite Filter Debris
Waste Matrix Code Group:	Filters
Annual Transuranic Waste Inventory Report Identification Numbers:	SR-BCLRH-T002
RCRA EPA Hazardous Waste Numbers:	D004, D005, D006, D007, D008, D009, D011, D019, F002, and F005

Waste Stream Description and Physical Form

Waste stream SR-BCLDP.004.002 consists of the cartridge water filters and debris generated during the change-out of resins used for filtering the Building JN-1 Transfer and Storage Pool water. The filter matrix is composed of glass and cellulose fibers combined with melamine resin. The filter end caps are polypropylene with rubber gaskets (butyl/nitrile). Other debris packaged with the filters includes: rubber gaskets, rubber gloves, muslin resin bags, paper, cloth (wipes), tape, metal cans, and plastic bags, sheeting, and gloves. The waste matrix also includes Floor Dry (clay based absorbent) and Radsorb (sodium polyacrylate homopolymer) added during repackaging.

The waste material that comprises waste stream SR-BCLDP.004.002 was generated from a single process or from an activity that is similar in material, physical form, and hazardous constituents and is therefore a single waste stream.

[1] This waste stream consists of 5 55-gallon drums that will be loaded into 2 RH canisters.

Point of Generation

Location

Waste stream SR-BCLDP.004.002 is stored at the Savannah River Site in Aiken, South Carolina. Waste stream SR-BCLDP.004.002 was generated at the Battelle Memorial Institute, West Jefferson North Site Building JN-1 Hot Cell Laboratory in West Jefferson, Ohio.

Area and/or Buildings of Generation

Waste stream SR-BCLDP.004.002 was generated during D&D operations of the Transfer and Storage Pool located in Building JN-1 Hot Cell Laboratory at the Battelle Memorial Institute.

Generating Process

Description of Waste Generating Processes

The Building JN-1 Hot Cell Laboratory was constructed in 1955 in anticipation of the emerging commercial nuclear power industry. When operations officially ended in 1987, the Hot Cell Laboratory housed three large hot cells, ten small Alpha-Gamma Cells, a Mechanical Test Cell, and support areas including the large Transfer and Storage Pool, chemical test room, counting room, machine shop, shear testing room, hydraulic room and waste storage rooms.

Waste stream SR-BCLDP.004.002 consists of cartridge water filters from the Transfer and Storage Pool water filtration system in the Building JN-1 Pump Room. The filters were generated during operation and D&D of the Building JN-1 Storage and Transfer Pool.

BCLDP D&D Process Description

The BCLDP program involved the segregation and packaging of debris and equipment in the hot cells and repackaging of waste packaged by historic operations. Container contents were sorted, inspected surveyed, and decontaminated, as applicable. Suspect TRU waste was assessed to determine if decontamination was feasible. Low level waste was segregated and managed separately. TRU waste was placed into steel drum liners containing Radsorb and/or Floor Dry. In an effort to increase packaging efficiency, the waste was compacted in the liners during packaging.

Two methods were used to decontaminate waste, equipment, and cell surfaces that could not be decontaminated by simple cleaning (e.g., wiping and vacuuming). A heated, closed-loop, recirculating ultrasonic bath system that used Sonatol (an environmentally safe Freon substitute) and steam cleaners was used to decontaminate that debris. Debris not successfully decontaminated and filters from the ultrasonic bath were packaged as RH TRU waste. A pressure wash system was also used to decontaminate debris using hot water and Spray Nine or De-Solve-It (non-hazardous petroleum distillate mixture). Water and sediment were treated and stored pending filtration and evaporation. A flocculating agent (ammonium sulfate-mineral oil emulsion) was added to precipitate solids and sediment. The resulting sludge was collected and packaged as RH TRU waste. High pressure steam cleaners were also used to decontaminate larger areas inside the hot cells (e.g., walls, floors, larger equipment). The drums containing predominantly absorbed water are not included in waste stream SR-BCLDP.004.002.

Waste materials generated during repackaging of historical waste containers stored in Building JN-1 also included cotton rags, towels, and mop heads. Bags, polypropylene sock filters, cotton lint, sludge (mixed with Radsorb), and wipes used during maintenance of the laundry system were packaged as RH TRU waste and are not part of this waste stream.

In 1971 and 1972, the High Bay was added onto Building JN-1 to house the High Energy Cell, the Transfer and Storage Pool, and support areas. The High Energy Cell and Transfer and Storage Pool were used to receive, store, transfer, and examine fuel assemblies. The pool was also used for the extended storage of fuel assemblies sent to Building JN-1 for examination.

Shipping casks containing fuel assemblies and fuel rod bundles were received at the Building JN-1 High Bay. A crane was used to transfer the casks to the Washdown Room where dirt was removed using water and soap including Radiacwash, Spray Nine, and other non-hazardous soaps and detergents. After cleaning, the casks were filled with water and then placed into the Transfer and Storage Pool. The cask lid was removed, and the fuel assemblies or bundles of rods were lifted out of the cask and placed in storage racks in the pool. The cask was lifted out of the pool, decontaminated with deionized water and soap, reassembled, and placed back on the bed of the truck for reuse.

The fuel rod bundles or fuel assemblies were moved through a transfer canal in the pool to the access area for the High Energy Cell. The assemblies and bundles were then lifted into the cell.

The Transfer/Storage Pool contained nearly 150,000 gallons of water. A tank of deionized water in the Pump Room replenished pool water lost to evaporation. The pool water was filtered by an ion-exchange system in the Pump Room. Pool water was pumped through prefilters to remove particulates then through resin beds to remove minerals, salts, and other ions. The resulting filtered water was recirculated back to the pool.

When radiation levels on the ion-exchange canisters rose to approximately 200 millirem per hour (mR/hr), the resin, resin bags, and prefilters (comprised of glass fiber/cellulose/melamine resin) were replaced. The resin bags and filters were drained then placed in 30-or 55-gallon drums lined with polyethylene bags. Floor Dry absorbent (diatomaceous earth) was placed in the bottom of the liner and on top of the resin waste.

Transfer and Storage Pool D&D

The BCLDP program was responsible for draining and decontaminating the Transfer and Storage pool. This operation involved draining and evaporating the deionized water, vacuuming the surfaces of the pool, and painting the pool floor and walls.

In 1989, the presence of cesium in a Building JN-1 sump prompted an investigation to identify the source which was subsequently identified as the JN-1 Transfer and Storage Pool. An evaporation system and a vacuum cleaning system were used to empty and clean the pool surfaces. Underwater vacuuming of the pool surfaces began after metal debris (e.g., fuel pieces, wire, nuts, and bolts) remaining on the pool floor was removed. The water remaining in the pool was filtered by the ion-exchange system in the Pump Room to further remove contaminants prior to initiating the evaporation process. The water was pumped through a filter and ion-exchange resin bed into tanks. The water was then sampled, released, and evaporated into the atmosphere. The filtering and evaporating systems were taken from the site at the completion of the transfer and not included in the BCLDP waste streams. The pool was drained

and the walls were cleaned with Spray Nine (non-hazardous germicidal cleaner). The empty pool was then painted with strippable paint (ALARA 1146 Cavity Decon, a water-based vinyl).

Repackaging of Transfer and Storage Pool Filters

Waste stream SR-BCLDP.004.002 was generated from the repackaging of the Transfer and Storage Pool prefilters and resins. Storage drums containing the filters and resins were opened, sorted and transferred into polyethylene rigid liners in 55-gallon drums. Cartridge water filters and debris (e.g., resin bags, plastic bags, paper, and cloth) were segregated from the resins and placed into separate liners. Floor Dry and Radsorb were added to the bottom of the liner. A Radsorb pad was also placed between the bottom of the drum and the rigid liner. The drums were sealed and surveyed, and those drums determined to be low level were disposed of as low-level waste. Most of the resins were identified as low level.

Although the chemicals associated with historic operations conducted in the JN-1 hot cells were not directly used during D&D, this waste stream may contain chemicals from contact with hot cell waste during storage or from cross contamination during the BCLDP waste segregation and repackaging operations. Historical operations conducted in Building JN-1 included nondestructive and destructive operations, mechanical testing and metallurgical examinations.

The following historical operations contaminated the hot cells and subsequent debris packaged by the BCLDP.

High Energy Cell, Transfer/Storage Pool, and Supporting Areas

The High Energy Cell and Transfer and Storage Pool received, washed (using water and soap), stored, transferred, and examined fuel assemblies. Shipping casks containing fuel assemblies were washed with soaps including Radiacwash (non-hazardous cleaning solution), Spray Nine (non-hazardous germicidal cleaner), and other non-hazardous soaps and detergents. The casks were then lowered into the Transfer and Storage Pool to be opened then transferred to the High Energy Cell.

Once in the High Energy Cell, nondestructive examinations were performed on the assemblies, bundles, and rods. Fuel assemblies were weighed, measured, temperature measured, photographed, and videotaped. Rods were removed, photographed, weighed, measured, and tested. Nondestructive examination included eddy current, profilometry, horizontal and vertical bow, and gamma scan. Fission gases were collected and analyzed. Other activities included studies and characterization of resins, effects of cobalt-60 radiation on instrumentation, and fuel rod compaction. Fuel rods were cut and transferred for destructive testing.

Controlled Access Area

The Controlled Access Area was utilized to transport equipment and specimens to the High Level, Low Level, Mechanical Test, and Alpha-Gamma Cells and the Charpy Room. In addition, the area was used for manipulator arm service, drum compaction, and equipment and specimen decontamination.

The Sabotage Program examined the effects of a terrorist attack on nuclear fuel shipping casks. The program involved shooting a shaped charge at a small model cask containing fuel and then analyzing the solids and gases generated by the collision.

High Level and Low Level Cells

The High Level Cell and the Low Level Cell were used to conduct nondestructive examination, destructive testing, and material preparation (e.g., marking, cutting, grinding). Rod marking, sectioning, defueling, visual examination, and dimensional measuring, in addition to gamma scan, tensile, fission gas, rod void volume, fuel bulk density, autoradiography, and burst testing analyses were conducted in these cells.

Mechanical Test Cell

The Mechanical Test Cell was used to examine spent fuel, irradiated cladding, and structural materials using tensile, creep, vacuum fusion, burst, radial burnup, expanded mandrel, and density testing. In addition to spent fuel, other material studied in the cell included Zircaloy, stainless steel, nickel alloys, refractory material, and pressure vessel steel. Specimens were transferred into the Mechanical Test Cell where burst and tensile testing were performed on fuel cladding. In addition to the destructive mechanical testing, density testing was conducted using elemental mercury.

Alpha-Gamma Cells

The Alpha-Gamma Cells supported metallography testing of fuel rod specimens. Fuel rods and Metmounts (fuel rod specimens) were cut, ground, polished, washed (with alcohol and water), etched with acid, hardness tested and photographed. Unclad fuel samples were tested for thermal conductivity. X-ray diffraction testing of Metmounts was also performed.

Dissolution and solidification of burnup fuel specimens was conducted in one of the hot cells in Building JN-1 Hot Cell Laboratory. The fuel was dissolved from the cladding, and the cladding was returned to another hot cell to be weighed. The fuel was dissolved with nitric acid, diluted with water, mixed with cement, and allowed to solidify in foam cups (referred to as *slugs*). The slugs were consolidated into a single 55-gallon drum.

Charpy Room

In the Charpy Room, shear testing of irradiated nuclear reactor material was performed. Silicon based oil and alcohol baths were used to heat and cool specimens during shear testing. Reconstituting broken specimens was also performed in this area.

Table 1 identifies the toxicity characteristic (TC) and F-listed constituents in waste stream SR-BCLDP.004.002.

Table 1 –TC and F-Listed Constituents in Waste Stream SR-BCLDP.004.002

Constituent	CAS Number	EPA Hazardous Waste Numbers
Arsenic	7440-38-2	D004
Barium	7440-39-3	D005
Benzene	71-43-2	F005

Constituent	CAS Number	EPA Hazardous Waste Numbers
Cadmium	7440-43-9	D006
Carbon tetrachloride	56-23-5	D019
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	F002
Silver	7440-22-4	D011
Toluene	108-88-3	F005
Trichloroethylene	79-01-6	F002
1,1,1-Trichloroethane	71-55-6	F002

RCRA Determinations - Hazardous Waste Determinations

Ignitability, Corrosivity, Reactivity

Waste generated in this waste stream does not qualify for any of the exclusions outlined in 40 CFR 260 or 261. Visual examination (VE) of the BCLDP video media was 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 VE of the BCLDP video media was performed to ensure the absence of prohibited liquids.

Therefore, this waste does not exhibit the characteristic of ignitability (D001). (References C515, P505, P510, and U514).

Corrosivity

This waste does not meet the definition of corrosivity as defined in 40 CFR 261.22. The materials are not liquid, and VE of the BCLDP video media was performed to ensure the absence of prohibited liquids.

The filters were drained, dried, and packaged with absorbents at the point of generation. To further assure the absence of residual liquids, additional absorbents were placed in the bottom of the drum liners.

To ensure the waste does not exhibit the characteristic of corrosivity, liquid in excess of TSDF-WAC limits was removed or immobilized prior to WIPP disposal. Therefore, this waste does not exhibit the characteristic of corrosivity (D002). (References C515, P505, P510, U510, U511, U514, and U517).

Reactivity

This waste stream does not meet the definition of reactivity as defined in 40 CFR 261.23. The waste is 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.

Although sodium and sodium-potassium bonded fuel capsules were disassembled in the hot cells, the sodium and sodium-potassium were reacted with butyl alcohol prior to disposal. Small amounts of a potassium ferricyanate solution were non-routinely used in the 1970s to etch tungsten/rhenium alloy specimens in the alpha-gamma cells. The solution was prepared outside of the cells and unused solution was poured down a process sink. No other potential sources for cyanides or sulfides were identified in this debris; therefore, this waste is not capable of detonation or explosive reaction due to the presence of these compounds. Picric acid was identified in the AK; however, no specific source or use for the acid was identified. Additionally, the Sabotage Program used small explosive charges during experiments. These charges were consumed during the experiments and were not disposed of as waste in Building JN-1.

To ensure the waste does not exhibit the characteristic of reactivity, liquid in excess of TSDF-WAC limits was removed or immobilized, and compressed gases (e.g., aerosol cans) were removed or vented prior to WIPP disposal. Therefore this waste stream does not exhibit the characteristic of reactivity (D003). (References C001, C011, C014, P072, P501, P505, P510 and U514).

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 is conservatively applied to the waste stream.

Arsenic, barium, cadmium, chromium, lead, mercury, and silver were detected in resin and prefilter samples taken during packaging of the pool filter system waste. Historic assignment of EPA HWNs based on this data has been inconsistently applied to these waste materials. For this reason, EPA HWNs are conservatively assigned for arsenic (D004), barium (D005), cadmium (D006), chromium (D007), lead (D008), mercury (D009) and silver (D011) (References C518, DR005, DR006, DR010, and U511).

The AK sources identified the use of organic toxicity characteristic compounds including benzene (D018), carbon tetrachloride (D019), methyl ethyl ketone (D035), and trichloroethylene (D040). EPA HWNs are assigned to the waste stream for F-listed solvents benzene (F005), methyl ethyl ketone (F005), and trichloroethylene (F002). Because the more specific F-listed EPA HWNs have been assigned for these compounds, the corresponding toxicity characteristic HWNs D018, D035 and D040 are not assigned. Therefore only HWN D019 for carbon tetrachloride is conservatively assigned to waste stream SR-BCLDP.004.002 (Reference DR011).

Listed Waste

Waste stream SR-BCLDP.004.002 was mixed with or derived from F-listed hazardous waste from non-specific sources as listed in Title 40 *Code of Federal Regulations* (CFR) 261.31. F002 and F005 listed solvents were used in the Building JN-1 Hot Cells and potentially contaminate the waste.

Although F001-listed solvents were identified in the AK record (i.e., 1,1,1-trichloroethane, carbon tetrachloride, methylene chloride, and trichloroethylene), EPA has provided a regulatory clarification that the F001 listing is only appropriate when the listed solvents are used in a "large-scale" degreasing operation such as cold cleaning or vapor degreasing on an industrial scale. Large-scale degreasing operations were not conducted in Building JN-1, and therefore, EPA HWN F001 is not assigned to this waste stream.

Even though no source of AK specifically identified F-listed solvent use in the Transfer or Storage Pool or Pump Room areas, several of the solvents were used during Building JN-1 cleaning and degreasing activities or were identified as common ingredients in products (e.g., paints, strippers, and thinners) used in the building. F002 and F005-listed solvents were used in the JN-1 hot cells. For this reason, waste stream SR-BCLDP.004.002 is assigned F-listed EPA HWN F002 for 1,1,1-trichloroethane, methylene chloride, and trichloroethylene and HWN F005 for benzene, methyl ethyl ketone, and toluene (References C518 and DR011).

F003 constituents, including acetone, butyl alcohol, ethyl benzene, methanol, and xylene were also used in Building JN-1. These solvents are listed solely as 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.

The following F-listed constituents contaminate the waste and are applied.

(F002)
1,1,1-trichloroethane, trichloroethylene, methylene chloride

(F005)
Benzene, methyl ethyl ketone, toluene

U, K, and P-Listed Chemicals

Waste stream SR-BCLDP.004.002 was not 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). Based on the AK documentation reviewed, there is no evidence that unused commercial products were disposed of in TRU waste drums.

Beryllium and beryllium compounds may contaminate this waste stream. 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. The review of the AK source documentation did not identify the disposal of unused hydrofluoric acid (U134) or disposal of materials contaminated with spills of this acid; therefore the EPA HWN U134 is not assigned to waste stream SR-BCLDP.004.002. (References C012, P072, P501, P505, P510, P511 and U514).

Waste stream SR-BCLDP.004.002 does not include any of the manufacturing process wastes from the specific industries or sources listed in 40 CFR 261.32.

Waste Stream SR-BCLDP.004.002 is not assigned any U-, K-, or P-Listed EPA HWNs.

Headspace Gas/Volatile Organic Compound Information

A Scenario 3 AK Sufficiency Determination Request was approved by the Permittees on September 27, 2010 for waste stream SR-BCLDP.004.002, therefore headspace gas and VOC analysis is not required for this waste stream.

Conclusion

The following EPA hazardous waste numbers are assigned to this waste stream: D004, D005, D006, D007, D008, D009, D011, D019, F002, and F005.

Polychlorinated Biphenyls (PCBs)

This waste stream does not contain PCBs, and therefore is not regulated as Toxic Substances Control Act waste under 40 CFR 761.

Based on a review of the container documentation, materials potentially containing PCBs were not specifically identified (capacitors, ballasts, etc.). BCLDP waste management practices required identification, segregation, and special management of suspect PCB containing materials (e.g., ballast, capacitors, and transformers). Hydraulic oils that leaked from the system used for the High Level and Low Level Cell doors was UNOCAL UNAX RX 32 Industrial Oil and does not contain PCBs. The only potential source identified for PCB was in an inventory of what was described as "lightly contaminated" hazardous materials originally stored in the Microprobe room. BCLDP waste management practices would have resulted in the segregation and special management of these materials. No other sources of PCBs were identified in the AK record.

Therefore, waste stream SR-BCLDP.004.002 is not regulated as a Toxic Substances Control Act (TSCA) waste under 40 CFR 761 (References C001, C006, C007, C506, P009, P025, P078, P079, P080, P505, P510, P511 and U514).

Prohibited Items

The absence of prohibited items is determined and documented through acceptable knowledge and characterization activities. VE of the BCLDP video media was 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 wastes 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

- Waste 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 B-8 of the WIPP HWFP, unless specifically approved through a Class 3 permit modification.

Each container of waste is certified and shipped only after VE of the BCLDP video media either:

- Did not identify any prohibited items in the waste container, or
- All prohibited items found in a waste container by VE of the BCLDP video media are identified and corrected (i.e., eliminated or removed) through the site non-conformance reporting system.

Justification for the Selection of VE of the BCLDP Video Media

Containers in Lot 1 of this waste stream were characterized using visual examination (VE) of the BCLDP video media. VE of the video media was the appropriate method for characterizing this waste stream because visual examination was performed by BCLDP at the time of packaging and meets all the Data Quality Objectives for Nondestructive Examination (NDE) of S5000 waste.

Method for Determining Waste Material Parameter Weights per Unit of Waste

The waste material parameters (WMPs) for waste stream SR-BCLDP.004.002 were estimated by reviewing the inventory records for the 5 cartridge water filter containers that comprise this waste stream. The WMP weights were estimated for each container assessed and an average was determined for the waste stream. The results of the assessment are presented in Table 2.

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

The WMPs, average weight percent and weight percent range are presented in Table 2.

Table 2. Waste Stream SR-BCLDP.004.002 Waste Material Parameter Estimates

Waste Material Parameter	Avg. Weight Percent	Weight Percent Range
Iron-based Metals/Alloys	0.0%	0.0 – 0.0 %
Aluminum-based Metals/Alloys	0.0 %	0.0 –0.0 %
Other Metals	0.0 %	0.0 – 0.0 %
Other Inorganic Materials	35.5 %	17.5 – 56.3 %
Cellulosics	33.8 %	3.4 – 56.3 %
Rubber	1.3 %	0.8 – 2.5 %
Plastic (waste materials)	6.5 %	4.2 – 9.7 %
Organic Matrix	12.9 %	9.3– 17.7%
Inorganic Matrix	9.9 %	5.7 – 16.9 %

Soils/Gravel	0.0 %	0.0 – 0.0 %

List of AK Sufficiency Determinations

A Scenario 3 AK Sufficiency Determination Request was approved by the Permittees for this waste stream on September 27, 2010 for the 5 containers that make up this waste stream.

Transportation

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

Beryllium

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

Radionuclide Information

Containers in this waste stream have surface dose rates exceeding 200 mrem/h, but less than 1000 rem/h, and contain more than 100 nanocuries per gram (nCi/g) of waste of alpha-emitting TRU isotopes with half lives greater than 20 years. The waste is contaminated primarily with irradiated fuel and special nuclear material.

The 10 WIPP tracked radionuclides are presented in Table 3 in addition to other radionuclides that, in aggregate, constitute 95% of the total radiological hazard.

Table 3. Summary of SR-BCLDP.004.002 Radionuclides

WIPP Tracked Radionuclides	Additional Reported Radionuclides
Am-241	Cm-244
Pu-238	Cs-134
Pu-239	Co-60
Pu-240	Eu-154
Pu-242 (not reported)	Tl-208
U-233	Sb-125
U-234	U-235
U-238	U-236
Cs-137	
Sr-90	

Payload management will not be utilized for this waste stream.

Attachment 1

AK SOURCE DOCUMENTS, SUPPLEMENTAL DOCUMENTATION

Supporting Document Tracking Number	Att. #	Title	Document Number	Revision	Date
C001	S7	Interview Record: Eugene Sands, Master Research Technician; Larry Stickel, Master Technician; Harley Toy, Manager of Regulatory Compliance and Tech. Services; Max Berchtold, JN-1 Lab Technician; George Kirsch, Health Physicist	NA	NA	05/01/1998
C002	S5	Packet of letters concerning Destruction/Immobilization of Toxic Substances by Intense Gamma Irradiation	NA	NA	11/8/1982, 12/13/1982 12/15/1982 1/27/1983
C004	S7	Interview Record: Harley Toy, Manager of Regulatory Compliance and Tech. Services; George Kirsch, Health Physicist, Historical Operations in JN-1.	NA	NA	7/12/1998
C005	S7	Interview Record: Scott Kitts, Manager Special Waste Projects, Hanford N-Reactor Process Tube in JN-1	NA	NA	7/16/1998
C006	S7, S10	Interview Record: Max Berchtold, JN-1 Lab Technician, Historical Operations in JN-1 and Hydraulic Oil Composition (including MSDS)	NA	NA	7/15/1998
C007	S7	Interview Record: Scott Kitts, Manager Special Waste Projects, Separation of Hot Cell Waste from Wastes from Supporting Areas	NA	NA	7/22/1998
C009	S5	Miscellaneous Battelle Memorial Institute correspondence	NA	NA	2/1956 to 10/1968
C011	NA	D&D Fax to Kevin Peters, re: JN-1 Chemical Use Lists	NA	NA	7/24/1998
C012	S7	Interview record of George Kirsch, re: Acid used to dissolve burn-out fuel and when was alpha/gamma Cell 10 added	NA	NA	7/24/1998
C013	S9, S12	Interoffice Correspondence to A. A. Church, re: Status of TCLP Analysis on Leaded Gloves and Lead Glovebox Windows	168-WG-91	NA	3/13/1991
C014	S7	Interview record of George Kirsch and Eugene Sands, re: Use of Potassium Cyanide, pool water evaporation, and nerve agent research	NA	NA	10/22/1998
C015	S7	Interview record of Max Berchtold, re: Description of Change-out of the JN-1 Pool Filtering System Resin Beds	NA	NA	2/19/1999
C016	S7	Interview record of Scott Kitts, re: Telephone Discussions about the Repackaging of Pool Resins and Prefilters	NA	NA	2/24/1999
C017	S7, S10	Interview Record of Pete Wilson (Cuno), re: Description JN-1 Pool Filtering System Pre-filters and Estimated Composition of the Pre-Filter Waste Stream	NA	NA	3/4/1999
C019	S7	Interview Record of Scott Kitts, re: TRU Waste Inventory and Drum Repackaging Operations	NA	NA	4/27/1999
C023	S7	Interview Record of Scott Kitts, re: TRU Waste Inventory Repackaging Operations	NA	NA	9/9/1999
C026	S9	Letter to James Eide, re: Preparation of Hanford Burial Records for Assayed B25 Waste Boxes	NA	NA	4/30/1999

Source Document Tracking Number	AK #	Title	Document Number	Revision	Date
C027	S9	Letter to Craig Jensen, re: TRU Waste Field Sorting Process Surveillance	NA	NA	7/19/1999
C028	S7	Interview Record of Peter Erickson, re: Operation of the BCLDP TRU Laundry Decontamination System	NA	NA	4/10/2000
C029	S7	Letter to Kevin J. Peters, re: White Powder in Berry Can	NA	NA	12/17/1999
C044	S4	Letter to BCLDP Project Records, re: Camera Failure in the HEC TRU Waste Packaging Area and Power Outages	NA	NA	5/5/2000
C045	S7, S10	Interview Record of Peter Erickson, re: Description of Pressure Wash Operations and Repackaging of Pressure Wash Filters	NA	NA	4/26/2001
C049	S10	Miscellaneous Correspondence to Dave Garber	NA	NA	1/2000 to 3/2000
C051	S9, S12	Letter to AK Record, re: TCLP Analysis of Incandescent, Fluorescent, and Mercury Vapor Light Bulbs	NA	NA	7/6/2001
C056	S9, S12	Letter to AK Record, re: RCRA Hazardous Constituents in Paint and Paint Related Products	NA	NA	12/7/2001
C506	S7	Interview with Dave Garber; BCLDP Waste Management; Waste Compaction, PCB Ballasts, Sealed Bags, and Sources.	NA	NA	4/11/07
C508	S7	Interview with Dave Garber re: BCLDP Waste Management Regarding Inorganic and Organic Debris	NA	NA	06/05/2007
C510	S9	Evaluation of the Representativeness of Swipe Samples for Waste Stream SR-RL-BCLDP.001	NA	NA	08/02/2007 ; 01/31/2008
C511	S9	Memo to file: Justification for Parameter Ranges Used for SRS/BCLDP RH TRU Radiological Characterization	NA	NA	08/02/2007
C512	S8	Intra-Laboratory Memo to C. E. Crouthamel, CMT, and M. J. Steindler, CMT re: LWR Hot-Cell Capability at ANL-E: The D-200 M-Wing Situation	NA	NA	05/03/1985
C515	S4	Waste Material Parameter Weight Evaluation for Transfer and Storage Pool Waste Streams	NA	NA	12/13/2007
C518	NA	Attachment 6 of CBFO's response to NMED's NOD, Regarding the AK Sufficiency Request for Waste Stream SR-RL-BCLDP.001	NA	NA	12/15/2008
C520	S9	ORIGEN 2.2 Input Files for BWRs and PWRs	NA	NA	01/28/2008
C706	S10	Letter to Mike Brown, US DOE CAO re: Trip Report for Battelle Columbus Laboratory Decommissioning Project	98.09.039. md	NA	02/19/1998
C804	S6	Retention of Certain Sources and Waste Management of Other Sources and Items Associated with RSS Source Inventory	1784-04-08	NA	11/10/2003
DR002	S7	Interview Record for Discrepancy Report of George Kirsch, re: Date of the Beginning of Operations of the HEC and Pool	NA	NA	7/28/1998
DR005	S9	Letter to AK Record, re: Discrepancy Report	NA	NA	5/12/1999

Source Document Tracking Number	Attach #	Title	Document Number	Revision	Date
		Relating to Lead Detected in Sample of Pool Water			
DR006	S9	Letter to AK Record, re: Discrepancy Report Relating to RCRA Metals Detected in Samples Pool Resins and Filters	NA	NA	6/29/1999
DR007	S9	Letter to AK Record, re: Discrepancy Report Regarding Generation of Pool Water Prefilters and Debris Waste	NA	NA	11/30/2000
DR008	S9	Letter to AK Record, re: Discrepancy Report Regarding Pool Water Prefilters and Debris Waste	NA	NA	1/24/2001
DR009	S4	Letter to AK Record, re: Discrepancy Report Regarding Generation of Four Debris Waste Streams, 5190-01, 5190-02, 5390-01, and 5390-02	NA	NA	5/25/2001
DR010	NA	Letter to AK Record, re: Discrepancy Report Relating to RCRA Metals Detected in Pool Resins and Filters Samples, and TRU Resin Volume Estimation	NA	NA	5/25/2001
DR011	NA	RCRA Hazardous Waste Number Assignment Discrepancy Report	NA	NA	4/24/2007
M814	S1	Project package 33064-001 for the Welding of RH-TRU Waste Canister BC-0003	33064-001	NA	Various
M815	S1	Project Package 33064-001 for the Welding of RH-TRU Waste Container BC-0002	33064-001	NA	9/23/2003
M816	S2	Completing and Tracking Sampling Documentation for Decontamination and Decommissioning Operations Waste Management Operations Procedure	WA-OP-040	0 and 1	07/09/1998 11/12/2002
M821	S2	Sampling Sediment or Sludge Waste Materials Utilizing a Ponar Dredge Procedure for Decontamination and Decommissioning Operations Waste Management Operations	WA-OP-039	0 and 1	07/09/1998 11/12/2002
M822	S2	Sampling Solid and Sludge Waste materials from Small Access Areas Utilizing a Drain Scoops/Scoopula Procedure for Decontamination and Decommissioning Operations Waste Management Operations	WA-OP-037	0 and 1	07/09/1998 11/12/2002
M825	S2	TRU-100 WIPP Indoctrination for the BCLDP TRU WCP Training Packet	11312-05-01	NA	6/15/2000
P001	S2	Alpha Gamma Cells JN-1A	NA	NA	8/1/1994
P002	S9	Fuel Storage Pool, Pump Room and Washdown Room JN-1B. Decontamination and Decommissioning Operations	NA	NA	7/1/1995
P003	S9	High Energy Cell, Mezzanine, and Top of HEC JN-1B. Decontamination and Decommissioning Operations	NA	NA	12/1/1994
P004	S9	Waste Storage Shed JN-1A. Decontamination and Decommissioning Operations	NA	NA	6/1/1995
P009	NA	Chemistry Laboratory, Counting Room and Microprobe Room	NA	NA	12/01/1994
P010	S9	Evaporator Room JN-1A	NA	NA	11/1/1994

Source Document Reference Number	Ref. #	Title	Document Number	Revision	Date
P012	S9	Controlled Access Area JN-1A	NA	NA	9/1/1994
P014	S9	Mechanical Test Cell JN-1A	NA	NA	7/1/1994
P016	S9	Subcells of the High Level and Low Level Cells in JN-1A	NA	NA	11/1/1994
P017	S9	Low Level Cell JN-1A	NA	NA	8/1/1994
P019	S9	Charpy Room JN-1A	NA	NA	6/1/1994
P020	S2	Curie Content Determination and Package Classification of Low-Level Waste at Battelle's Hot Cell	various	NA	6/11/1986
P023	S8	Course 7: Metals for Nuclear Power. Lesson Ten: Structural Materials	NA	NA	1958
P024	S2, S3	Procedures Manual for Battelle's Radioisotope, Gamma, and Hot-Cell Laboratories	BMI-PM-662	3	11/24/1965
P025	S10	Miscellaneous Material Safety Data Sheets (MSDS)	NA	NA	various
P032	S2, S3	Procedures Manual for Battelle's Radioisotope, Gamma, and hot-Cell Laboratories	BMI-PM-662	NA	2/20/1962
P034	S3	Finding of No Significant Impact and Environmental Assessment, Battelle Columbus Laboratories Decommissioning Project	NA	NA	6/1/1990
P039	S2, S8 S10	SCS-300 Operating Manual	NA	NA	1998
P040	S2	Waste Characterization, Classification and Shipping Support Technical Basis Document for Battelle Columbus Laboratories Decommissioning Project (BCLDP) West Jefferson North Facility	DD-98-04	0	5/1/1998
P042	S2	Decontamination and Decommissioning Operations Hot Laboratory Operating Procedure, Changing Resins and Filters in JN-1B Pump Room	HL-OP-010	1	6/4/1993
P050	S2	Waste Management and Transportation Operating Procedure, Operation of the TRU Level Mop Head Decontamination Unit	TC-OP-01.6	0	2/25/2000
P060	S2	Quality Assurance Document, Fixation of Residual Radioactive Contamination on Glovebox Interior Surfaces	Pu-DP-1.9	0	10/19/1978
P071	S5	Interim Report on Shipping Cask Sabotage Source Term Investigation to U.S. Nuclear Regulatory Commission	NA	NA	11/6/1979
P072	S5	Final Report on Shipping Cask Sabotage Source Term Investigation to U. S. Nuclear Regulatory Commission	NA	NA	9/1/1982
P077	S2	Waste Management Operating Procedure: Operation and Maintenance of the Alkota Pressure Washer	WA-OP-061	3	3/6/2001
P078	S2	Work Instruction: Operation of CAA Pressure Wash System	WI-976	2	11/30/2000
P079	S2	Work Instruction: Material Removal from the High level Cell (HCL)	WI-1021	0	2/2/2001

Source Document Tracking Number	Area	Title	Document Number	Revision	Date
P080	S2	Work Instruction: Low Level Cell Gross Decontamination and Support Functions	WI-1026	1	2/26/2001
P300	S2, S8	Transuranic (TRU) Waste Certification Quality Assurance Plan for the Battelle Columbus Laboratories Decommissioning Project Transuranic Waste Certification Program	P300	0	11/17/1998
P301	S2	Transuranic (TRU) Waste Certification Program: Training Plan for the Battelle Columbus Laboratories Decommissioning Project (BCLDP) TRU WCP	P301	3	2/21/2003
P328	S2	Transuranic (TRU) Waste Certification Program Waste Management and Transportation Operating Procedure Segregation and Packaging of TRU Waste	TC-OP-01.4	0	04/12/1999
P328	S2	Transuranic (TRU) Waste Certification Program Waste Management and Transportation Operating Procedure Segregation and Packaging of TRU Waste	TC-OP-01.4	0	04/12/1999
P341	S2	Decontamination and Decommissioning Operations (DDO) Quality Department Administrative Procedure (QD-AP) Corrective Action	P341	3	8/6/2002
P346	S2 S3	Environmental Oversight Walkdowns	1657-04.01	NA	12/31/1996
P501	NA	Building JN-1 Hot Cell Laboratory, Acceptable Knowledge Document	TCP-98-03	NA	8/2001and 8/13/2001
P505	S2, S4	Segregation and Packaging of TRU Waste	TC-OP-01.4	2	8/15/2001
P506	S2, S4	TRU Waste Certification Program - Packaging Video Documentation	P506	2	9/12/2001
P508	S2	Transuranic (TRU) Waste Certification Program Certification Quality Assurance Plan for the Battelle Columbus Laboratories Decommissioning Project Transuranic Waste Certification Program	TCP-98-01.1	0, 2, 3	11/17/1998 ; 4/2000; 2/13/2002
P510	NA	Acceptable Knowledge Process Description - Repackaging of JN-1 Transfer/Storage Pool Filter Change-Out Waste	TCP-98-03.1.1	2	07/23/2001
P511	NA	Technical Basis Document, Acceptable Knowledge Process Description, Repackaging of Building JN-1 Clean-Up Waste Containers	TCP-98-03.1.2	2	7/2001
P512	NA	Technical Basis Document, Acceptable Knowledge Process Description, TRU Waste Laundry Decontamination	TCP-98-03.1.3	1	6/2001
P515	S3	Procurement, Inspection, and Issuance of Packaging for Hazardous Materials Shipments	WA-OP-006	6	Not dated
P517	S2, S8	Decontamination and Decommissioning Operation Waste Management Operations Procedure - Sampling of Waste Materials for Chemical and/or Radiological Characterization	WA-OP-033	3	3/1998
P701	S2	Transuranic Waste Certification Plan for Newly generated Contact-Handled Wastes to be Shipped	BCLDP-89-2	0	10/15/1989

Source Document Tracking Number	Ref. #	Title	Document Number	Revision	Date
		to the Waste Isolation Pilot Plant			
P702	S2	Waste Management Program Quality Assurance Plan Decontamination and Decommissioning Waste Management Document	WA-QAP-1.0	0	10/31/1989
P704	S5	Characterization of Remote-Handled Transuranic Waste for the Waste Isolation Pilot Plant - Final Report	NA	NA	2002
P706	S2	Work Instruction: set Up and Packaging of Transuranic Waste in the High Energy Cell (HEC), JN-1, HEC, JN-3 Pool	WI-958	2	04/18/2000
P708	S2	Transuranic Waste Certification Plan for Newly generated Contact-Handled Wastes to be Shipped to the Waste Isolation Pilot Plant	BCLDP-89-2	2	12/20/1990
P710	S11	Work Instruction for Operation of the SCS-300 System	WI 935; RWP: 98-JN-1-024	NA	10/09/1998
P711	S2	Work Instruction for JN-1 Pool Setup for TRU-Waste Storage in the JN-1 High Bay	WI-924; 99-JN-0-050	NA	10/27/1999
P713	S6	Attachment 7, MicroShield results for the JN Standard Radionuclide Mix plus Additional ORGEN2.1 Radionuclides for liners	NA	NA	3/27/2002
P715	S6	Attachment 8, MicroShield results for the JN Standard Radionuclide Mix plus Additional ORIGEN2.1 Radionuclides for drums	NA	NA	3/27/2002
P716	S6	Review of ORIGEN2.1 input used in Battelle RH-TRU waste characterization study	NA	NA	8/13/2001
P717	S6	Printout File Liner-05	1132-T11-02-06	NA	3/22/2002
P719	S6	Attachment 5, MicroShield results for liners	NA	NA	10/10/2002
P720	S6, S9	Attachment 9, Excel regression analysis output for liners and drums, Minitab regression analysis output for drums and liner, and a comparison of Excel and Minitab regression analysis	NA	NA	10/10/2002
P721	S6	Attachment 6, MicroShield results for drums	NA	NA	10/10/2002
P727	S5 S9	CCP Calculation Cover Sheet Project: SRS RH TRU Radiological Characterization	SRS-RH-01	0, 1, 2	06/26/2007 09/24/2007 11/6/2007
P728	S5 S9	CCP Calculation Cover Sheet Project: SRS RH TRU Radiological Characterization	SRS-RH-02	0, 1	06/26/2007 , 1/05/2007
P729	S5, S9	Swipe Sample Data Analysis Calc Package	SRS-RH-03	0	05/16/2007
P730	S5, S9	Calc Package for MCNP5 Uncertainty Analysis	SRS-RH-04	0	05/16/2007
P731	S5, S9	Calc Package for Dose-to-Curie (DTC) Spreadsheet	SRS-RH-05	0	05/16/2007
P732	S5, S9	Calc Package for Uncertainty Analysis	SRS-RH-06	0	05/16/2007
P733	S5,	Calc Package for LWR Measurements Comparison	SRS-RH-	0	05/16/2007

Source Document Tracking Number	Set #	Title	Document Number	Revision	Date
	S9	to ORIGEN	07		
P736	S5 S9	Calculation Package: SRS RH TRU Radiological Characterization - Sample Data Decay Correction	SRS-RH-10	0, 1	06/26/2007 09/18/2007 11/09/2007
P738	S5, S9	Calc Package for Swipe Radionuclide Information Input Check	SRS-RH-12	0	05/25/2007
P739	S9	Calc Package for Fission Product Contribution to Total Dose Rate	SRS-RH-13	0	0614/2007
P740	S9	Calc Package for ORIGEN2.2 Data Extraction	SRS-RH-14	0	05/29/2007
P743	S2	Operation and Maintenance of the Elite Pressure Washer Procedure for Waste Management	WA-OP-063	0	02/01/2002
P744	S2	HP-AP-36.0 Review to Retire various BCLDP WA Procedures	NA	NA	4/22/2004
P745	S2	Assessment of Procedures and Plans: WA-OP-030 Packaging, Marking and Labeling Radioactive and Radioactive Mixed Waste	164WM-06-04	NA	3/08/2006
P746	S2	Assessment of Procedures and Plans: WA-OP-006: Procurement, Inspection, and Issuance of Packaging for hazardous Material Shipments	164 WM-06-01	NA	3/08/2006
P747	S2	Assessment of Procedures/Plans: WA-OP-022 Radioactive Mixed Waste Accumulation and Storage	164WM-06-03	NA	3/08/2006
P748	S2	Radioactive Waste and Radioactive Mixed Waste Absorption Procedure for Waste Management	WA-OP-029	2, 3	02/20/1999 06/29/2001
P749	S2	Waste Management Operating Procedures: Identification, Segregation, Separation and Documentation of Low Level and Radioactive Mixed Waste	WA-OP-020	8	10/04/2001
P751	S2	Radiation and Contamination Survey Techniques	HP-OP-019	2	Undated
P753	S2 S9	Decontamination a d Decommissioning Operations Radioanalytical Laboratory Test Procedure: Gamma Spectrometric Analysis of Laboratory Samples Using Canberra Procount Software	RL-TP-030	4	Draft
P801	S5 S9	CCP Calculation Package for Pool Sample Data Input Check	SRS-RH-15	0	2/13/2008
P802	S5 S9	CCP Calculation Package for Pool Sample Data Decay Correction	SRS-RH-16	0	2/13/2008
P806	S5 S9	Calculation Package for Pool Filter Waste DTC Correlation for Cs-137 and Co-60	SRS-RH-21	0	2/13/2008
P808	S5 S9	Calculation Package for Pool Filter Sample Data Decay Correction	SRS-RH-23	0	2/13/2008
P809	S5 S9	Calculation Package for Pool Filter Waste Scaling Factor Development	SRS-RH-24	0	2/13/2008
P810	S5 S9	Calculation Package for Pool Filter Waste Uncertainty Analysis	SRS-RH-25	0	2/13/2008
P811	S5 S9	CCP Calculation Package for Pool Filter DTC Spreadsheet	SRS-RH-26	0, 1, 2	2/13/2008; 04/04/2008 06/09/2008

Source Document Tracking Number	Ref #	Title	Document Number	Revision	Date
P812	S5 S9	CCP Calculation Package for Pool Filter Determination of Reportable Isotopes	SRS-RH-27	0	2/13/2008
P753	S2 S9	Decontamination and Decommissioning Operations Radioanalytical Laboratory Test Procedure: Gamma Spectrometric Analysis of Laboratory Samples Using Canberra Procount Software	RL-TP-030	4	Draft
U005	S11	DOE Contract Log	NA	NA	1975-1987
U009	S4	Miscellaneous JN-1 Waste Inventory Data	NA	NA	1988-1997
U010	S11	Hot Cell Receipts and Shipments Logbook	NA	NA	3/21/1960 – 5/14/1973
U011	S11	Battelle Memorial Institute Laboratory Record Book of BMI Reports, No. 13561	No. 13561	NA	6/1957 – 12/1960
U012	S11	Battelle Memorial Institute Laboratory Record Book of BMI Reports, No. 18423	No. 18423	NA	7/1959 – 6/1968
U013	S11	Battelle Memorial Institute Laboratory Record Book of BMI Reports, No. 13117	No. 13117	NA	12/1960 – 8/1965
U014	S6	ENG-92 Contract Projects Database 2 Printout	NA	NA	Query date 10/17/1986
U016	S7	Nuclear Materials Questionnaires	NA	NA	1985
U021	S9, S12	TCLP metals data for leaded glass	NA	NA	7/1/1998
U022	S4	Waste Package Loading Record	NA	NA	10/1997 to 3/1999
U025	S9	Actinide Screen Data for Radionuclides Contained in Strippable Paint from JN-1 Charpy Cell	NA	NA	7/17/2000
U026	S9	69 Sample Basis of DD-98-04 Technical Basis Document	NA	NA	5/25/2001
U027	S9	Cask Smear Sample Data for Isotopic Confirmation	NA	NA	8/20/2001
U501	S2, S8	Transuranic (TRU) Waste Certification Program Verifications of Calculations Performed by Application of Systems Software	TC-AP-07.1	O-A,1	7/2001 10/10/2001
U502	S8, S12	Example of Proposed WIPP Acceptable Knowledge Characterization for RH-TRU Waste Battelle Columbus Laboratories	NA	NA	9/21/2001
U507	S8	Case Study: RH-TRU Waste Transportation From Battelle Columbus Laboratories	NA	0	2002
U510	S9	Waste Profile Sheets (6)	NA	1	2/11/2004
U511	S9	Waste Profile Sheets	NA	NA	4/16/2002
U512	S6, S9	Material Inventory Calculations	NA	NA	11/4/2005
U513	S9	Miscellaneous Inventory Spreadsheets	NA	NA	Various
U514	S4, S9	BCLDP RH Waste Container Documentation	NA	NA	Various
U515	S6	218-W-3AE Waste Information Data System General Summary Report	NA	NA	1/27/2004

Source Document Tracking Number	Attach. #	Title	Document Number	Revision	Date
U517	S4, S9	BCLDP Container Packaging Video Loading Recordings	NA	NA	Various
U703	S2	U.S. DOE CAO Audit Report of the Battelle Columbus Laboratories Decommissioning Project Columbus, Ohio on TRU Waste Characterization Activities Related to Acceptable Knowledge on May 6-7, 1999	A-99-15	NA	06/04/1999
U719	S10	Waste Profile Sheet, Pool Water Filter Resin	NA	NA	7/18/2002
U723	S4	Videotape Log (HEC Packaging Area)	NA	NA	07/30/2001
U725	S4	Background Information Package Disposition of Battelle Columbus Laboratory West Jefferson Facility Transuranic (TRU) Waste	WM-TRUDAT 22445	NA	June 1999
U734	S9	Review of Spreadsheet WJ_samp.xls "69 Swipes from Battelle"	U734	NA	8/07/2001
U821	S11	Radiation Ludlum/Instrument Efficiency Account Book	1784-042	NA	12/21/1992
U822	S11	Radiation Ludlum/Instrument Efficiency Account Book	1784-04-24	NA	9/09/1992
U823	S11	Instrument Efficiency Account Book	NA	NA	2/11/1992
U824	S11	Account Book detailing Rad Canberra 2404 System #1 and Maintenance Log Book	1784-04-19	NA	1/16/1996
U825	S11	Account BookRad Ludlum 2929 GI-92993 and PR-085748 Instrument Efficiency	1784-04-22	NA	2/11/1992
U826	S11	Account Book for Rad Ludlum 2929 s/n GI-93790 and PR-1000062 Instrument Efficiency	1784-04-21	NA	7/22/1993
U827	S8	RAL Balance Calibration Documentation 1991 - 2004	17832-06-11	NA	9/20/2006
U828	S11	Account Book: Rad Canberra 2404 System #1 / Maintenance Log Book	1784-04-20	NA	10/11/1995
U829	S7	Nonconformance Report on Torque Wrench	NCR 06-01	NA	12/02/2005
U834	S4	Spreadsheet with Container Information	NA	NA	Unknown

Alphanumeric Designations

C	Correspondence
DR	Discrepancy Resolution
I	Internal Procedures and Notes
M	Miscellaneous
P	Published Documents
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