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

AUG 24 2012

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

Subject: Review of Los Alamos National Laboratory - Central Characterization Project Waste Stream Profile Form Number LA-MIN04-S.001

Dear Mr. Kieling:

The Department of Energy, Carlsbad Field Office has approved the Waste Stream Profile Form (WSPF) Number LA-MIN04-S.001, *Salt Waste from TA-55*, for the Central Characterization Project at the Los Alamos National Laboratory.

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

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

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

Sincerely,

Jose R. Franco, Manager
Carlsbad Field Office

Enclosure

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

120830

CBFO:NTP:JRS:GL:12-0595:UFC 5900.00

Attachment 2 – CCP Waste Stream Profile Form

(1) Waste Stream Profile Number: LA-MIN04-S.001					
(2) Generator site name: Los Alamos National Laboratory			(3) Generator site EPA ID: NM0890010515		
(4) Technical contact: Terri-Anne Groover			(5) Technical contact phone number: 505-606-2344		
(6) Date of audit report approval by New Mexico Environment Department (NMED): September 23, 2011					
(7) Title, version number, and date of documents used for WIPP-WAP Certification: CCP-PO-001, CCP Transuranic Waste Characterization Quality Assurance Project Plan, Revision 20, June 16, 2011; CCP-PO-002, CCP Transuranic Waste Certification Plan, Revision 26, July 14, 2011; CCP-PO-012, CCP/Los Alamos National Laboratory (LANL) Interface Document, Revision 10, July 9, 2012					
(8) Did your facility generate this waste?	YES	X	NO		
(9) If no, provide the name and EPA ID of the original generator: NA					
Waste Stream Information					
(10) WIPP ID: LA-MIN04-S.001			(11) Summary Category Group: S3000		
(12) Waste Matrix Code Group: Salt Waste			(13) Waste Stream Name: Salt Waste from TA-55		
(14) Description from the ATWIR: Inorganic homogeneous solid waste generated during plutonium recovery, fabrication, R&D, facility and equipment operations, and maintenance processes.					
(15) Defense TRU Waste:	YES	X	NO		
(16) Check One:	CH	X	RH		
(17) Number of SWBs: NA (17a) Number of SLB2: NA	(18) Number of Drums: Current – 66 55-gallon drums Projected – 248 55-gallon drums/year		(19) Number of Canisters: NA		
(20) Batch Data Report numbers supporting this waste stream characterization: See Characterization Information Summary (CIS) Correlation of Container Identification Numbers to Batch Data Report Numbers.					
(21) List applicable EPA Hazardous Waste Numbers:[1] D004, D005, D006, D007, D008, D009, D010, D011, D018, D019, D021, D022, D035, D038, D039, D040, F001, F002 and F005					
(22) Applicable TRUCON Content Numbers: LA 224					
(23)**Acceptable Knowledge Information**					
(For the following, enter the supporting documentation used [i.e., references and dates])					
Required Program Information					
(23A) Map of site: CCP-AK-LANL-006, Revision 11, September 23, 2011, Attachments 1 and 2					
(23B) Facility mission description: CCP-AK-LANL-006, Revision 11, September 23, 2011, Section 4.2					
(23C) Description of operations that generate waste: CCP-AK-LANL-006, Revision 11, September 23, 2011, Section 4.4					
(23D) Waste identification/categorization schemes: CCP-AK-LANL-006, Revision 11, September 23, 2011, Section 4.3.1					
(23E) Types and quantities of waste generated: CCP-AK-LANL-006, Revision 11, September 23, 2011, Section 4.3.6					
(23F) Correlation of waste streams generated from the same building and process, as applicable: CCP-AK-LANL-006, Revision 11, September 23, 2011, Section 4.3.7					

(24) Waste certification procedures: CCP CH TRU Waste Certification and WWIS/WDS Data Entry, CCP-TP-030, Revision 30, May 21, 2012			
(25)Required Waste Stream Information			
(25A) Area(s) and building(s) from which the waste stream was generated: CCP-AK-LANL-006, Revision 11, September 23, 2011, Section 8.1			
(25B) Waste stream volume and time period of generation: CCP-AK-LANL-006, Revision 11, September 23, 2011, Section 8.2			
(25C) Waste generating process description for each building: CCP-AK-LANL-006, Revision 11, September 23, 2011, Section 8.3			
(25D) Waste Process flow diagrams: CCP-AK-LANL-006, Revision 11, September 23, 2011, Attachment 4			
(25E) Material inputs or other information identifying chemical/radionuclide content and physical waste form: CCP-AK-LANL-006, Revision 11, September 23, 2011, Section 8.4			
(25F) Waste Material Parameter Weight Estimates per unit of waste: See table entitled "Waste Stream LA-MIN04-S.001 Waste Material Parameter Estimates in Summation of Aspects of AK Summary Report: Waste Stream LA-MIN04-S.001			
(26) Which Defense Activity generated the waste:			
	Weapons activities including defense inertial confinement fusion		Naval Reactors development
	Verification and control technology	X	Defense research and development
X	Defense nuclear waste and material by products management	X	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 M286, M289, M290, M292, M294, M299, M300, M302, M303, M304, P177, P180, P181, P182, P183, P185, P186, P189, P190, D058, M012, M014, M024, M026, M028, M029, M030, M074, M076, M085, M086, M088, M089, M090, M095, M096, M097, M137, M180, M181, M182, M184, M185, M186, M189, M200, M202, M206, M212, P001, P011, P012, P014, P015, P028, P029, P033, P034, P036, P080, P094, P095, P096, P097, P098, P104, P105, P154, P155, P156, P157, P158, P159, P160, P161, P162, P163, P164, P165, P166, P167, P168, P169 and P170 in the Summation of Aspects of AK Summary Report: Waste Stream LA-MIN04-S.001, Source Documents			
(27C) Safety Analysis Reports: See D014, D068, P147 and P148 in the Summation of Aspects of AK Summary Report: Waste Stream LA-MIN04-S.001, Source Documents			
(27D) Waste packaging logs: See M001, M018, M019, M219 and M279 in the Summation of Aspects of AK Summary Report: Waste Stream LA-MIN04-S.001, Source Documents			
(27E) Test plans/research project reports: See C186, C189, M306 and D028 in the Summation of Aspects of AK Summary Report: Waste Stream LA-MIN04-S.001, Source Documents			
(27F) Site databases: See C216, M307, C101, M158, M222 and U004 in the Summation of Aspects of AK Summary Report: Waste Stream LA-MIN04-S.001, Source Documents			
(27G) Information from site personnel: See C188, C189, C190, C191, C192, C194, C195, C197, C199, C200, C201, C209, C210, C213, C220, C001, C002, C005, C007, C010, C014, C017, C018, C020, C023, C031, C033, C035, C037, C038, C039, C040, C041, C047, C057, C061, C062, C064, C066, C067, C068, C069, C073, C083, C085, C087, C092, C102, C104, C105, C108, C113, C117, C121, C129, C130, C131, D017, P109 and P110 in the Summation of Aspects of AK Summary Report: Waste Stream LA-MIN04-S.001, Source Documents			
(27H) Standard industry documents: See D055 in the Summation of Aspects of AK Summary Report: Waste Stream LA-MIN04-S.001, Source Documents			

(27J) Material safety data sheets: See M284, C009 and C121 in the Summation of Aspects of AK Summary Report: Waste Stream LA-MIN04-S.001, Source Documents	
(27K) Sampling and analysis data from comparable/surrogate Waste: See P187 in the Summation of Aspects of AK Summary Report: Waste Stream LA-MIN04-S.001, Source Documents	
(27L) Laboratory notebooks: See M281 in the Summation of Aspects of AK Summary Report: Waste Stream LA-MIN04-S.001, Source Documents	
Confirmation Information	
For the following, when applicable, enter procedure title(s), number(s) and date(s)	
(28)	Radiography: CCP Standard Real-Time Radiography (RTR) Inspection Procedure, CCP-TP-053, Revision 11, July 20, 2011
	Visual Examination: NA
(29) Comments: For a list of the waste characterization procedures used and date of respective procedures see the list of procedures on the attached CIS.	

Reviewed by AK Expert: YES [X] **Date:** 7/31/2012

Reviewed by STR (if necessary): YES [X] N/A [ ] **Date:** 7/27/2012

Waste Stream Profile Form Certification:

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

Signature of Site Project Manager	Terri-Anne Groover Printed Name	8\13\12 Date

NOTE: (1) If radiography or visual examination were used to confirm EPA Hazardous Waste Numbers, attach signed Characterization Information Summary documenting this determination.

CHARACTERIZATION INFORMATION SUMMARY

WSPF # LA-MIN04-S.001

Lot 1

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GIS001

CCP Characterization Information Summary Cover Page

Waste Stream # LA-MIN04-S.001 Lot #: 1

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

SPM Review: Richard Kantrowitz Date: 8/14/2012

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

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

List of procedures used:

Radiography (RTR/NDE):

CCP-TP-053	Rev. 11	07/20/11	CCP Standard Real-Time Radiography (RTR) Inspection Procedure
CCP-TP-053	Rev. 10	03/04/11	CCP Standard Real-Time Radiography (RTR) Inspection Procedure
CCP-TP-053	Rev. 9	09/30/10	CCP Standard Real-Time Radiography (RTR) Inspection Procedure
CCP-TP-053	Rev. 8	06/30/10	CCP Standard Real-Time Radiography (RTR) Inspection Procedure
CCP-TP-053	Rev. 7	10/21/09	CCP Standard Real-Time Radiography (RTR) Inspection Procedure
CCP-TP-053	Rev. 6	03/04/08	CCP Standard Real-Time Radiography (RTR) Inspection Procedure

Non Destructive Assay (NDA):

CCP-TP-063	Rev. 13	04/11/11	CCP Operating the High Efficiency Neutron Counter Using NDA2000
CCP-TP-063	Rev. 12	11/17/10	CCP Operating the High Efficiency Neutron Counter Using NDA2000
CCP-TP-063	Rev. 11	10/22/08	CCP Operating the High Efficiency Neutron Counter Using NDA2000
CCP-TP-103	Rev. 10	08/30/11	CCP Data Reviewing, Validating and Reporting Procedure for the High Efficiency Neutron Counter and the Super High Efficiency Neutron Counter Using NDA2000
CCP-TP-103	Rev. 9	03/14/11	CCP Data Reviewing, Validating and Reporting Procedure for the High Efficiency Neutron Counter and the Super High Efficiency Neutron Counter Using NDA2000
CCP-TP-103	Rev. 8	07/12/10	CCP Data Reviewing, Validating and Reporting Procedure for the High Efficiency Neutron Counter Using NDA2000
CCP-TP-103	Rev. 7	11/16/06	CCP Data Reviewing, Validating and Reporting Procedure for the High Efficiency Neutron Counter Using NDA2000

Solids Sampling:

INST-OI-73	Rev. 4	04/07/09	Manual Drum Coring Operations
INST-OI-16	Rev. 30	04/07/09	Drum Coring Operations

Solids Analysis:

CCP-TP-180	Rev. 2	12/29/10	CCP Analytical Sample Management
CCP-TP-181	Rev. 0	05/02/07	CCP Determination of Mercury by CVAA for TRU Waste Characterization
CCP-TP-182	Rev. 1	01/26/09	CCP Determination of Metals by ICP-AES for TRU Waste Characterization
CCP-TP-183	Rev. 0	05/02/07	CCP Microwave Assisted Digestion of Homogeneous Solids and Soil/Gravel
CCP-TP-184	Rev. 0	05/02/07	CCP Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry
CCP-TP-185	Rev. 1	11/18/08	CCP Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry
CCP-TP-186	Rev. 1	08/22/07	CCP Determination of Nonhalogenated Volatile Organic Compunds by Gas Chromatography
CCP-TP-187	Rev. 1	11/18/08	CCP Sample Preparation for Semivolatile Organic Compounds
CCP-TP-188	Rev. 2	12/29/10	CCP Analytical Data Recording, Review, and Reporting

CH5002

CCP Characterization Information Summary Cover Page

Project Level Data Validation / DQO Reconciliation:

CCP-TP-001	Rev. 19	12/29/10	CCP Project Level Data Validation and Verification
CCP-TP-001	Rev. 18	08/09/10	CCP Project Level Data Validation and Verification
CCP-TP-001	Rev. 17	09/24/07	CCP Project Level Data Validation and Verification
CCP-TP-002	Rev. 24	12/28/11	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-002	Rev. 23	12/29/10	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-002	Rev. 22	06/25/10	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-002	Rev. 21	08/04/09	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-002	Rev. 20	08/18/08	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-003	Rev. 18	12/29/10	CCP Data Analysis for S3000, S4000, and S5000 Characterization
CCP-TP-003	Rev. 17	11/09/09	CCP Data Analysis for S3000, S4000, and S5000 Characterization
CCP-TP-003	Rev. 16	10/02/07	CCP Data Analysis for S3000, S4000, and S5000 Characterization
CCP-TP-005	Rev. 24	11/28/11	CCP Acceptable Knowledge Documentation
CCP-TP-005	Rev. 23	06/30/11	CCP Acceptable Knowledge Documentation
CCP-TP-005	Rev. 22	04/21/11	CCP Acceptable Knowledge Documentation
CCP-TP-005	Rev. 21	12/29/10	CCP Acceptable Knowledge Documentation
CCP-TP-005	Rev. 20	11/01/10	CCP Acceptable Knowledge Documentation
CCP-TP-005	Rev. 19	07/06/10	CCP Acceptable Knowledge Documentation
CCP-TP-005	Rev. 18	11/16/06	CCP Acceptable Knowledge Documentation
CCP-TP-030	Rev. 30	05/21/12	CCP CH TRU Waste Certification and WWIS/WDS Data Entry
CCP-TP-030	Rev. 29	04/26/11	CCP CH TRU Waste Certification and WWIS/WDS Data Entry
CCP-TP-030	Rev. 28	05/12/10	CCP CH TRU Waste Certification and WWIS/WDS Data Entry
CCP-TP-030	Rev. 27	12/14/09	CCP CH TRU Waste Certification and WWIS/WDS Data Entry
CCP-TP-030	Rev. 26	05/27/09	CCP CH TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 25	01/22/09	CCP CH TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 24	08/20/08	CCP CH TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 23	03/12/08	CCP CH TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 22	07/24/07	CCP CH TRU Waste Certification and WWIS Data Entry

WAP Certification:

CCP-PO-001	Rev. 20	06/16/11	CCP Transuranic Waste Characterization Quality Assurance Project Plan
CCP-PO-001	Rev. 19	12/29/10	CCP Transuranic Waste Characterization Quality Assurance Project Plan
CCP-PO-001	Rev. 18	06/30/10	CCP Transuranic Waste Characterization Quality Assurance Project Plan
CCP-PO-001	Rev. 17	06/23/09	CCP Transuranic Waste Characterization Quality Assurance Project Plan
CCP-PO-001	Rev. 16	10/31/07	CCP Transuranic Waste Characterization Quality Assurance Project Plan
CCP-PO-002	Rev. 26	07/14/11	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 25	12/29/10	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 24	06/30/10	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 23	04/07/10	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 22	01/12/10	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 21	01/26/09	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 20	11/02/07	CCP Transuranic Waste Certification Plan
CCP-PO-012	Rev. 10	07/09/12	CCP/Los Alamos National Laboratory (LANL) Interface Document
CCP-PO-012	Rev. 9	01/04/12	CCP/Los Alamos National Laboratory (LANL) Interface Document
CCP-PO-012	Rev. 8	12/29/10	CCP/Los Alamos National Laboratory (LANL) Interface Document
CCP-PO-012	Rev. 7	05/08/08	CCP/Los Alamos National Laboratory (LANL) Interface Document

CFS003

CCP Correlation of Container Identification Numbers to Batch Data Report Numbers

Waste Stream: # LA-MIN04-S.001 Lot # 1

Container ID Number	Long Container ID	NDA BDR	NDE BDR	Solids Sampling BDR	Solids Analytical BDRs	Load Management/ Overpack Yes
62259	LA00000062259	2LANDA0396	LA-RTR2-10-0128_R1	SSG11-00005	ALD11025M ALD11025N ALD11025S ALD11025V	Yes
62535	LA00000062535	1LANDA1323	LA-RTR2-10-0137	SSG11-00005	ALD11025M ALD11025N ALD11025S ALD11025V	
62655	LA00000062655	1LANDA1026	LA-RTR2-10-0022	SSG11-00005	ALD11025M ALD11025N ALD11025S ALD11025V	
62679	LA00000062679	2LANDA0395	LA-RTR2-10-0024	SSG11-00005	ALD11025M ALD11025N ALD11025S ALD11025V	
S864549	LAS864549	2LANDA0394	LA-RTR2-10-0024	SSG12-00002	ALD12014M ALD12014N ALD12014S ALD12014V	

Signature of Site Project Manager

Richard Kantrowitz
Printed Name

8/14/2012
Date

CCP Solids Analysis VOC UCL_{90} Evaluation Form

WSPF #: LA-MIN04-S.001 **Waste Stream 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)	UCL90 (ppmv)	PRQL (ppmv)	Transformed PRQL (N/A or Value)	UCL_{90} > PRQL Yes	EPA Code
Benzene	Log	0	5	-1.69	-1.74	0.03	-1.72	10	2.30		
Bromoform	Log	0	5	-1.69	-1.74	0.03	-1.72	10	2.30		
Carbon Disulfide	Log	0	5	-1.69	-1.74	0.03	-1.72	10	2.30		
Carbon Tetrachloride	Log	0	5	-1.69	-1.74	0.03	-1.72	10	2.30		
Chlorobenzene	No	0	5	0.18	0.16	0.04	0.18	10	N/A		
Chloroform	Log	1	5	-0.67	-1.53	0.48	-1.20	10	2.30		
1,1-Dichloroethene	Log	0	5	-1.69	-1.74	0.03	-1.72	10	2.30		
1,2-Dichloroethane	Log	0	5	-1.69	-1.74	0.03	-1.72	10	2.30		
Ethyl benzene	Log	0	5	-1.69	-1.74	0.03	-1.72	10	2.30		
Methylene chloride	No	0	5	0.28	0.26	0.01	0.27	10	N/A		
m,p-Xylene[d]	No	0	5	0.35	0.31	0.07	0.36	10	N/A		
o-Xylene	No	0	5	0.18	0.16	0.04	0.18	10	N/A		
1,1,2,2-Tetrachloroethane	Log	0	5	-1.69	-1.74	0.03	-1.72	10	2.30		
Tetrachloroethene	No	0	5	0.18	0.16	0.04	0.18	10	N/A		
Toluene	No	0	5	0.18	0.16	0.04	0.18	10	N/A		
trans-1,2-Dichloroethylene	Log	0	5	-1.69	-1.74	0.03	-1.72	10	2.30		
1,1,1-Trichloroethane	Log	0	5	-1.69	-1.74	0.03	-1.72	10	2.30		
Trichloroethene	Log	0	5	-1.69	-1.74	0.03	-1.72	10	2.30		
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	Log	0	5	-1.69	-1.74	0.03	-1.72	10	2.30		
1,1,2-Trichloroethane	Log	0	5	-1.69	-1.74	0.03	-1.72	10	2.30		
Trichlorofluoromethane	No	0	5	0.28	0.26	0.01	0.27	10	N/A		
Vinyl chloride	Log	0	5	-1.69	-1.74	0.03	-1.72	4	1.39		
Acetone	No	0	5[(2)]	23.00	23.00	0.00	23.00	100	N/A		
Butanol	No	0	5[(3)]	50.00	30.75	27.22	90.00	100	N/A		
Methanol	No	0	5[(3)]	50.00	30.75	27.22	90.00	100	N/A		
Methyl ethyl ketone	No	0	5[(3)]	50.00	30.75	27.22	90.00	100	N/A		

CIS005

CCP Solids Analysis VOC UCL_{90} Evaluation Form

WSPF #: LA-MIN04-S.001 **Waste Stream 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)	UCL90 (ppmv)	PRQL (ppmv)	Transformed PRQL (N/A or Value)	UCL_{90} > PRQL Yes	EPA Code
Ethyl ether	No	0	5[4]	0.00	0.00	0.00	0.00	10	N/A		
Isobutanol	No	0	5[2]	23.00	23.00	0.00	23.00	100	N/A		
Pyridine	No	0	5[3]	50.00	30.75	27.22	90.00	100	N/A		
1,2-Dichlorobenzene[c]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Formaldehyde[a]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Hydrazine[b]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		

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

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

[c] Can also be analyzed as an SVOC. If analyzed as an SVOC, the QAO's of CCP-TP-001, Table C3-6 apply.

[d] 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."

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) As a result of dilution requirements for 4 of the 5 samples, Acetone and Isobutanol were reported as non-detected with an MDL value in excess of the PRQL. In accordance with the Waste Analysis Plan, Section C4-3e such observations with elevated MDL values due to dilution were not used in calculating the mean concentration. Consequently, the subject analytes were evaluated with 1, rather than 5, usable observations. A valid UCL_{90} could not be calculated and the single result is used as the UCL_{90}. The W statistic and P-value cannot be computed with less than three values as there is no meaningful covariance. As a consequence, the data could not be evaluated for normailty and the non-transformed data set was automatically chosen.

(3) As a result of dilution requirements for 3 of the 5 samples, Butanol, Methanol, Methyl ethyl ketone, and Pyridine were reported as non-detected with an MDL value in excess of the PRQL. In accordance with the Waste Analysis Plan, Section C4-3e such observations with elevated MDL values due to dilution were not used in calculating the mean concentration. Consequently, the subject analytes were evaluated with 2, rather than 5, usable observations. Valid UCL_{90} generated, however, the W statistic and P-value cannot be computed with less than three values as there is no meaningful covariance. As a consequence, the data could not be evaluated for normailty and the non-transformed data set was automatically chosen.

(4) As a result of dilution requirements for all 5 samples, Ethyl Ether was reported as non-detected with an MDL value in excess of the PRQL. In accordance with the Waste Analysis Plan, Section C4-3e such observations with elevated MDL values due to dilution were not used in calculating the mean concentration. Consequently, there was no usable data for Ethyl ether. A valid UCL_{90} could not be generated and the non-transformed data set was chosen to be listed on this page. Ethyl ether is not found in the AK. If the consevative approach is taken and the EPA HWN is assigned for Ethyl ether, it would be F003. Since F003 is only assigned for flammable liquids and this waste stream is not flammable liquids, no action is taken.

Signature of Site Project Manager

Richard Kantrowitz
Printed Name

8/14/2012
Date

CT5006

CCP Solids Analysis SVOC UCL_{90} Evaluation Form

WSPF #: LA-MIN04-S.001 **Waste Stream 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)	UCL90 (ppmv)	PRQL (ppmv)	Transformed PRQL (N/A or Value)	UCL_{90} > PRQL Yes	EPA Code
1,2-Dichlorobenzene [a]	Log	0	5	-1.61	-2.17	0.32	-1.96	40	3.69		
1,4-Dichlorobenzene [a]	Log	0	5	-1.61	-2.17	0.32	-1.96	40	3.69		
2,4-Dinitrophenol	No	0	5	0.10	0.10	0.00	0.10	40	N/A		
2,4-Dinitrotoluene	No	0	5	0.10	0.10	0.00	0.10	40	N/A		
Hexachlorobenzene	No	0	5	0.10	0.10	0.00	0.10	40	N/A		
Hexachloroethane	Log	0	5	-1.61	-2.17	0.32	-1.96	2.6	0.96		
2-Methylphenol (cresols)	No	0	5	0.10	0.10	0.00	0.10	2.6	N/A		
3&4 -Methylphenol (cresols)	No	0	5	0.10	0.10	0.00	0.10	40	N/A		
Nitrobenzene	Log	0	5	-1.61	-2.17	0.32	-1.96	40	3.69		
Pentachlorophenol	No	0	5	0.10	0.10	0.00	0.10	40	N/A		

[a] Can also be analyzed as a VOC. If analyzed as a VOC, the QAO's of CCP-TP-001, Table C3-4 apply.

Comments:

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

CTS007

Signature of Site Project Manager

Richard Kantrowitz
Printed Name

8/14/2012
Date

CCP Solids Analysis Metals UCL_{90} Evaluation Form

WSPF #: LA-MIN04-S.001 **Waste Stream 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)	UCL90 (ppmv)	PRQL (ppmv)	Transformed PRQL (N/A or Value)	UCL_{90} > PRQL Yes	EPA Code
Antimony	Log	0	5	-0.69	-0.98	0.16	-0.87	100	4.61		
Arsenic	Log	0	5	-0.11	-0.86	0.42	-0.57	100	4.61		
Barium	No	1	5	19.00	5.68	7.45	10.79	2000	N/A		
Beryllium	Log	4	5	1.92	-0.49	1.92	0.83	100	4.61		
Cadmium	Log	5	5	7.74	2.55	3.35	4.85	20	3.00	Yes	D006
Chromium	No	5	5	1000.00	423.08	423.67	713.58	100	N/A	Yes	D007
Lead	Log	5	5	7.24	3.76	3.17	5.94	100	4.61	Yes	D008
Mercury	No	2	5	0.13	0.04	0.06	0.08	4	N/A		
Nickel	No	5	5	1000.00	638.00	343.69	873.66	100	N/A	Yes	(2)
Selenium	Log	5	5	4.70	2.76	1.50	3.79	20	3.00	Yes	D010
Silver	Log	0	5	-2.30	-2.86	0.31	-2.65	100	4.61		
Thallium	SQRT	3	5	3.87	2.01	1.39	2.97	100	10.00		
Vanadium	Log	5	5	4.28	3.30	0.90	3.91	100	4.61		
Zinc	Log	5	5	7.00	2.83	2.58	4.60	100	4.61		

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) Nickel is not listed under 40CFR 261.30 or as a toxicity characteristic compound per 40CFR261.20.

CIS008

Signature of Site Project Manager

Richard Kantrowitz
Printed Name

8/14/2012
Date

CCP Solid VOCs Summary Data

Waste Stream Number LA-MIN04-S.001 Waste Stream Lot Number 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 _____ Date 8/14/2012

CCP Solid SVOCs Summary Data

Waste Stream Number LA-MIN04-S.001 Waste Stream Lot Number 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 _____ Date 8/14/2012

CCP RTR/VE Summary of Prohibited Items and AK Confirmation

Waste Stream Number: LA-MIN04-S.001 Lot #: 1

Container Number	RTR Prohibited Items [a,b]	Visual Examination Prohibited Items [a,b]
See correlation of container ID numbers for list of remaining drum numbers in this Lot.	None of the containers in this lot had prohibited items identified during RTR.	VE was not used to certify any containers in this Lot.

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

Justification for the selection of RTR and/or VE: Containers in this waste stream were characterized using RTR. RTR was selected as the characterization method for the containers because the waste was previously packaged and RTR meets all the Data Quality Objectives for NDE for waste stream LA-MIN04-S.001.

Site Project Manager Signature | Richard Kantrowitz (Printed Name) | 8/14/2012 (Date)

CIS011

CCP Reconciliation with Data Quality Objectives

WSPF# LA-MIN04-S.001 Lot # 1

Sampling Completeness

RTR:

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

NDA

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

HSG

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 VOC

Number of Valid Samples: 5 Number of Total Samples Collected: 5
Percent Complete: 100 (QAO is ≥90%)
Number of Valid Samples: 5 Number of Total Samples Analyzed: 5
Percent Complete: 100 (QAO is ≥90%)

Total SVOC

Number of Valid Samples: 5 Number of Total Samples Collected: 5
Percent Complete: 100 (QAO is ≥90%)
Number of Valid Samples: 5 Number of Total Samples Analyzed: 5
Percent Complete: 100 (QAO is ≥90%)

Total Metals

Number of Valid Samples: 5 Number of Total Samples Collected: 5
Percent Complete: 100 (QAO is ≥90%)
Number of Valid Samples: 5 Number of Total Samples Analyzed: 5
Percent Complete: 100 (QAO is ≥90%)

CCP Reconciliation with Data Quality Objectives

WSPF# LA-MIN04-S.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	NA	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	Y	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	Y	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	Y	Mean concentrations, (UCL_{90}) values for the mean concentration, standard deviations, and the number of samples collected for total metals were calculated and compared with the program required quantitation limits and regulatory thresholds, as reported in the Characterization Information Summary, CCP-TP-003 Attachment 6, and additional EPA HWNs were assigned as required. Samples were randomly collected.

CCP Reconciliation with Data Quality Objectives

WSPF# LA-MIN04-S.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	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	Y	TICs were appropriately identified and reported in accordance with the requirements of Section C3-1 of the QAPjP.
13	NA	The PRQLs for headspace gas VOCs were met for all analyses as evidenced by the analytical batch data reports.
14		The overall completeness, comparability, and representativeness QAOs were met for each of the analytical and testing procedures as specified in the WAP Sections C3-2 through C3-9 prior to submittal of a waste stream profile form for a waste steam or waste stream lot.

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

Comments:
None

Signature of Site Project Manager | Richard Kantrowitz (Printed Name) | 8/14/2012 (Date)

SUMMATION OF ASPECTS OF AK SUMMARY REPORT: LA-MIN04-S.001

Overview

Waste stream LA-MIN04-S.001 is contact-handled (CH) inorganic homogeneous solid waste generated at Technical Area (TA)-55, Plutonium Facility Building 4 (PF-4) at the Los Alamos National Laboratory (LANL). LANL's current central mission is to enhance global security by ensuring the safety and reliability of the U.S. nuclear stockpile, developing technologies to reduce threats from weapons of mass destruction, and solving problems related to energy, environment, infrastructure, health and national security concerns. Since 1978, PF-4 has been located at TA-55 and used for the extraction and recovery of plutonium from residue and scrap generated from operations at LANL facilities and other U.S. Department of Energy (DOE) sites in the defense complex. The scrap and residues are processed to recover as much plutonium as economically feasible. The recovered plutonium is converted into pure plutonium feedstock.

This waste stream consists of salt waste generated during the purification of plutonium metal and scrap that is recovered from TA-55 research and development (R&D)/fabrication and associated recovery, facility and equipment maintenance, decontamination and decommissioning (D&D), waste repackaging, and below-grade retrieval operations. The defense activities that generated this waste are: defense nuclear waste and materials by-products management, defense nuclear materials production, and defense research and development.

This Summation of the AK Summary Report includes information to support Waste Stream Profile Form (WSPF) number LA-MIN04-S.001 for inorganic homogeneous solid waste. The primary source of information for this Summation is CCP-AK-LANL-006, *Central Characterization Project Acceptable Knowledge Summary Report For Los Alamos National Laboratory TA-55 Mixed Transuranic Waste: Waste Streams LA-MHD01.001, LA-CIN01.001, LA-MIN02-V.001, LA-MIN04-S.001*, Rev. 11, September 23, 2011.

Waste Stream Identification Summary

Waste Stream Name:	Salt Waste from TA-55
Waste Stream Number:	LA-MIN04-S.001
Dates of Waste Generation:	March 1980 to present
Waste Stream Volume – Current:	66 55-gallon drums
Waste Stream Volume – Projected:	248 55-gallon drums per year
Summary Category Group:	S3000
Waste Matrix Code Group:	Salt Waste
Waste Matrix Code:	S3140, Salt Waste
TRUCON Content Number:	LA 224

Annual Transuranic Waste Inventory
Report Identification Numbers: LA-TA-55-32, LA-MIN04-S.001

Waste Stream Description and Physical Form

Waste stream LA-MIN04-S.001 consists of inorganic homogeneous solids. The waste is largely comprised of salts which are a byproduct from a variety of plutonium metal purification operations including electrorefining, molten salt extraction, salt stripping, fluoride reduction, and direct oxide reduction. Salts serve as a transportation vehicle for plutonium ions and provide a trap for impurities that are driven or extracted out during the purification process. Salt waste can include varying mixtures of calcium chloride, cesium chloride, lithium chloride, magnesium chloride, potassium chloride, sodium chloride, zinc chloride, residual entrained calcium and zinc metal, and various plutonium and americium compounds. The waste may also be contaminated with solvent metals and reagent materials such as barium, bismuth, cadmium, calcium carbonate, gallium, lead, molybdenum, niobium, tantalum, titanium, tungsten, vanadium, yttrium, and zirconium. A small fraction of debris waste (mainly plastic packaging, metal packaging, and secondary waste from repackaging [e.g., plastic sheeting, plastic/metal wire ties]) and magnesium oxide crucible pieces may also be present.

The waste stream meets the definition of waste materials that have common physical form, that contain similar hazardous constituents, and that are generated from a single process or activity. This waste was generated during the purification of plutonium metal and scrap that is recovered from TA-55 R&D/fabrication and associated recovery, facility and equipment maintenance, D&D, waste repackaging, and below-grade retrieval operations.

Point of Generation

Location

Waste stream LA-MIN04-S.001 was generated at LANL in Los Alamos, New Mexico. The waste is stored at the TA-54 Material Disposal Area G (Area G).

Area and/or Buildings of Generation

Waste stream LA-MIN04-S.001 was generated in the TA-55, Plutonium Facility Building 4.

Generating Processes

Description of Waste Generating Processes

Mixed salt waste is generated by or originated from materials used during TA-55 R&D/fabrication and associated recovery, facility and equipment maintenance, D&D, waste repackaging, and below-grade retrieval operations. R&D/fabrication operations include preparing ultra-pure plutonium metals, alloys, and compounds; preparing (on a large scale) specific alloys, including casting and machining these materials into specific shapes; determining high-temperature thermodynamic properties of plutonium; reclaiming plutonium from scrap and residues produced by numerous feed sources; disassembling components for inspection and analysis; manufacturing of parts on a limited basis; processing mixtures of plutonium and uranium oxides for reactor fuels; and Pu-238 generator and heat source R&D, fabrication, testing, and recycling (References D041 and D083). Typically, salts are generated after multiple plutonium purification runs involving the heating and cooling of various salt and

metal mixtures (i.e., Pyrochemical and Chloride Operations). However, salts can be contaminated, generated, processed, or recovered in any of the following six operational areas. The six plutonium operational areas that contributed to and/or generated this waste stream are: Nitrate Operations, Miscellaneous Operations, Special Processing Operations, Metal Operations, Pyrochemical and Chloride Operations, and Pu-238 Operations. Following is a summary of the six operational areas and associated facility and equipment maintenance, D&D, waste repackaging, and below-grade retrieval operations that contribute to this waste stream. Examples of respective steps, or operations and materials used, are included in the following subsections.

Nitrate Operations

Nitrate operations are used to recover plutonium from scrap and residues, and produce purified plutonium oxide for conversion to metal. The primary feed sources for the nitrate operations are plutonium residues from other recovery operations (e.g. chloride operations), metal preparation, metal fabrication, analytical operations, and residues from other DOE facilities. Nitrate operations consist of the following steps (References C129, D008, and D036):

- Pretreatment
- Dissolution
- Advanced Testing Line for Actinide Separations
- Purification and Oxide Conversion/Refinement
- Americium Oxide Production
- Evaporation
- Cement Fixation (waste from this process is included in a separate waste stream)

Miscellaneous Operations

R&D projects involve techniques and methods designed to study and improve operations associated with the purification, separation, extraction, recovery, and characterization of actinides (primarily plutonium). General types of miscellaneous operations are described below (References C131, D008, D009, and D032).

- Actinide Chemistry R&D
- Experimental Oxide Characterization
- Analytical Chemistry Laboratory Operations
- Laser Induced Breakdown Spectroscopy
- Actinide Processing Demonstration
- Electrochemistry Operations
- Material Identification and Surveillance
- Long Term Storage and Compatibility Testing
- Pyrochemical Matrix Studies (Standard Fabrication)
- Metallography Operations
- Electrolytic Decontamination
- Waste Management Operations
- Material Management Operations
- The Non-Confirming Drums
- Extraction Separation Studies
- Non-Aqueous Dissolution/Extraction Operations

- Halogenated Studies
- Measurement/Detection Operations and Studies

Special Processing Operations

Special Processing includes operations for material type (MT) 42 and R&D activities for MT 52. Material types are designators representing the isotopic makeup for Pu-239 and Pu-242 recovery process samples. Examples of recovery steps include (References C131, D010, and D030):

- Head-end Operations
- Nitrate Ion Exchange Operations
- Chloride Ion Exchange Operations
- Pyrochemical Operations

Metal Operations

Metal operations utilize the high purity metal produced by pyrochemical operations and produce shaped metal pieces. The activities conducted in metal operations include (References C131, D011, and D029):

- Casting
- Machining
- Plutonium Surfaces Studies
- Accelerated Aging of Plutonium
- Fuel Fabrication
- Developmental Metal Operations
- Physical Properties
- The Special Recovery Line
- Thermal Hydriding/Dehydriding

Pyrochemical and Chloride Operations

Pyrochemical operations include metal preparation, metal purification, and ancillary metal production operations (chloride operations and metal oxidation). Pyrochemical outputs are most often high-purity metal feed materials (e.g., plutonium) for metal operations (e.g., casting). Salts and crucibles above the discard limit (DL) are sent to chloride operations or the vault for storage. Salts and crucibles below the DL are sent to solid waste packaging for disposal. Pyrochemical chemical operations include the following (References D011 and D028):

- Direct Oxide Reduction
- Metal Preparation Line
- Molten Salt Extraction
- Electrorefining

Chloride operations are used to recover plutonium from scrap and residues and to produce a purified plutonium oxide for conversion to metal. The primary feed sources are plutonium residues and salts from pyrochemical operations, plutonium-beryllium (PuBe) neutron sources, analytical chemistry laboratory solutions, and residues from other DOE facilities. Chloride operations are broken down into the following steps (Reference D007):

- Pretreatment
- Dissolution
- Purification
- Hydroxide Precipitation

Pu-238 Operations

The Heat Source Fabrication process at TA-55 was used to fabricate the General Purpose Heat Source, Light Weight Radioactive Heater Unit, and MilliWatt Generator Pu-238 heat sources. Current heat source production involves fuel fabrication and scrap and process residues processing (References C198 and C220).

The Fuel Fabrication process uses Pu-238 feed material that is weighed then prepared using splitting, ball milling, slugging and screening, and granule seasoning. During the fuel fabrication process, analytical samples are frequently required for both Pu-238 oxide feed material and product specimens either to characterize the material or to determine whether the material meets current production specifications (References C192, C194, C195, C197, C212, C220, D080, M285, M286, and P180).

The Scrap and Process Residues Processing operation receives material and weighs, sorts, segregates, and loads it into a shipping container. The product from this process either goes to storage or feeds into calorimetry operations (References D080 and M285).

The Metallography process receives Pu-238 oxide fuel recovered from encapsulated heat sources, impacted heat sources, fuel pellets, or other sources. The metallography process is a physical process involving cutting, mounting, grinding, polishing, photography, and etching of Pu-238 fuel specimens (References C194, C197, M287, and P181).

The Routine Pu-238 Waste Solidification process of precipitating Pu-238 in waste solutions has been conducted since 1979 and is still active. The feed material for this process comes from analytical operations, Pu-238 heat source fabrication operations, metallography operations, and other LANL groups (References C194, C196, M293, P155, and P182).

Aqueous Scrap Processing involves the purification of Pu-238 oxide in a nitric acid stream, similar to the recovery activities already established for Pu-239 as part of TA-55 nitrate operations (References C210, C213, D079, and D080).

Other examples of scrap processing include the following (References C194, C197, C200, C211, C220, C221, D071, D080, M288, M289, M290, M291, M292, M294, M299, M306, P156, and P189):

- Induction Heating and Levitation
- Pu-238 Direct Oxide Reduction
- Thermal Decomposition of Cellulose
- Routine Scrap Processing
- Recovery of Pu-238 Oxide from Contaminated Iridium
- Recovery of Pu-238 from Sucrose Solutions

Facility and Equipment Maintenance Operations

Facility and equipment maintenance operations conducted in TA-55 involve cleaning and decontamination, equipment inspection and replacement, modification and repair of facilities, and general housekeeping. Cleaning and decontamination activities include physical wiping and the use of cleaning solutions (e.g., Fantastik, water) to remove contamination. Equipment inspection, calibration, and replacement activities are performed to ensure continued operability and process efficiency. Solid waste generated from these activities includes paper, plastic, glass, small equipment (e.g., labware, motors, pumps), and small tools. Modification of facilities include plumbing, electrical fixtures and equipment installation, and installation or removal of gloveboxes, ventilation ductwork, and windows. General housekeeping includes cleaning, repair, and organization of the facility/infrastructure (References D002, D008, D009, D011, D013, D014, D017, D023, D024, D026, D032, D045, M011, P001, P102, and P155).

Decontamination and Decommissioning (D&D) Operations

D&D operations are commonly performed at PF-4 in TA-55 to reduce the amount of floor space posted as radiological controlled areas and to support upgrades to existing facilities and equipment. Commercially available, non-hazardous cleaning products, such as Fantastik, are used to remove loose contaminants. Decontamination activities include the use of mechanical and chemical cleaning techniques such as brushing, stripping, washing, and wiping to remove contamination from gloveboxes, equipment, machinery, furnishings, and support systems. The removal and size reduction of glovebox internals, process piping and supports, tanks and ancillary equipment, and fixed equipment such as ducting, wires, conduits, electrical panels, and cabinets are conducted during D&D (References D002, D013, D014, D026, D034, and D041).

Waste Repackaging and Prohibited Item Disposition

Waste repackaging and prohibited item disposition is performed in three facilities outside of TA-55. Waste containers that fail to meet WIPP criteria are sent to the TA-50 Waste Characterization, Reduction, and Repackaging (WCRR) Facility, the TA-54 Building 412 facility formerly known as the Decontamination and Volume Reduction System (DVRS) facility, or the TA 54 Dome 231 Permacon to be safely remediated. These three facilities are used to perform visual examination (VE), repackaging, and prohibited item dispositioning of TRU waste. Some secondary waste generated during remediation and repackaging operations may be added to the waste containers, including but not limited to: absorbent (e.g., Waste Lock 770), Fantastik bottles used during decontamination, miscellaneous hand tools, paper/plastic tags and labels, plastic/metal wire ties, personal protective equipment (PPE), plastic sheeting used for contamination control, rags and wipes (Kimwipes), and original packaging material (e.g., plastic bags, plywood sheathing, rigid liner lids cut into pieces). Although these activities are performed outside of TA-55, there is no cross contamination with waste from other LANL facilities (References C150, C163, C165, C177, C185, D013, D026, D041, D062, P154, P158, P159, and P192).

Below-Grade Retrieval Project

Based on a review of available AK, Pit 9 and Trenches A–D contain CH waste from TA-55. LANL has established the Legacy Waste Disposition Project to ensure the safe retrieval of containerized TRU waste from below ground storage. Retrieval operations typically include workspace setup, removal of below ground storage material (e.g., soil, plastic, plywood), inspection of waste containers for removal (i.e., evaluation of container integrity), radiological

survey of the containers, physical removal of the containers using various mechanical means, and workspace cleanup. Retrieved containers that are intact may be washed with water and detergent to remove soil or contamination if found. The wash water is treated separately from the containerized waste. Depending on the type and condition of the retrieved container, further repackaging or processing may be required. For instance, drums with integrity or prohibited item (e.g., liquids) issues may be repackaged or overpacked. Materials used during retrieval operations that may contaminate the waste include plastic sheeting, bags, and PPE (References C178, D063, D064, D065, D066, D067, D068, M280, M281, and P174).

Waste Stream Material and Chemical Inputs

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

Toxicity Characteristic and Listed Constituents in Waste Stream LA-MIN04-S.001

Chemical/Product	Use/Source	Document Source(s)	EPA HWN(s)
1,1,1-Trichloroethane	Metallographic sample cleaning (<1992) and contaminant of hydroxide solids. Degreasing solvent and component of Tap Magic.	C019, C020, C089, C194, C195, M154, M160	F001, F002
Arsenic	Contaminant of liquids, filtrates, ash, hydroxide cake, and analytical solutions. Evaporator sludge contaminant and sputter coating reagent.	C010, C196, C197, C207, D078, D080, M153	D004
Barium	Contaminant of plutonium feed, hydroxide cake, ash, actinide separation waste, pyrochemical salts, and analytical solutions.	C038, C087, C192, C197, D075, D078, D080, M153	D005
Benzene	Cement fixation input and actinide chemistry R&D operations reagent.	C027, D009, D032, D077, P080, P081,	D018, F005,
Cadmium	Contaminant of plutonium feed, hydroxide cake, anode heels, ash, actinide separation waste, and analytical solutions. Solvent metal used in electrorefining.	C038, C039, C192, C196, C197, C200, D073, D075, D076, D080, M061, M153	D006
Carbon tetrachloride	Contaminant of cement fixation process and hydroxide solids. Used in plutonium trichloride preparation between 1/87 and 6/89. Chlorination of plutonium oxide and accountable Chemistry and Laser Science chloride solutions (CLS) reagent.	C092, C121, C194, C200, D078, M112, M129, P067	D019, F001
Chlorobenzene	Contaminant of cement fixation process and hydroxide solids. CLS reagent.	C092, C095, C200, D007, D077, D078	D021, F002
Chloroform	Contaminant of cement fixation and miscellaneous processing. CLS reagent.	C027, C092, C102, C117, C194, D077, D078	D022

Chemical/Product	Use/Source	Document Source(s)	EPA HWN(s)
Chromium (potassium chromate, potassium dichromate, sodium chromate)	Contaminant of plutonium feed, anode heels, hydroxide cake, ash, actinide separation waste, and analytical solutions. Potentially leached from stainless-steel materials. Dissolution and chloride anion exchange reagent. Silver nitrate titrations and hydroxide precipitation reagent. Plutonium dissolution and precipitation.	C038, C039, C082, C098, C192, C196, C197, C200, C205, D002, D007, D032, D073, D074, D075, D076, D078, D080, M061, M131 M153, M185, P103	D007
Freon TF (1,1,2-trichloro, 1,2,2-trifluoroethane)	Miscellaneous processing contaminant and recovery operations reagent. Cleaning, cooling, and ultrasonic degreasing operations solvent.	C011, C017, C019, C085, C102, C104, C105, D029, D077 M026, M032, M041, M123, M212, P044, P046, P049	F001, F002
Lead (Lead hydroxide, oxide, and nitrate)	Leaded gloves (<1992), shielding, sheeting, and discs. Contaminant of actinide separation waste, analytical solutions, ash, hydroxide cake, plutonium feed, and solder. Solvent metal used in electrorefining. Actinide R&D reagents.	C039, C041, C192, C196, C197, C200, D002, D011, D032, D073, D074, D075, D076, D078, D080, M050, M061, M153, P183, P186	D008
Mercury (mercury nitrate)	Contaminant of actinide separation waste, analytical solutions, ash, evaporator sludge, hydroxide cake, and plutonium feed. Component of fluorescent bulbs. Catalyst used in nitrate operations.	C023, C095, C176, C196, C197, C200, C207, D029, D078, D080, M064, M153, P109	D009
Methylene chloride	Paint stripper, contaminant of cement fixation, hydroxide cake, and miscellaneous processing. CLS and organoactinide R&D reagent. Component of REZ-N-Bond.	C027, C092, C200, C214, D007, D032, D077, D078, M174, P080	F001, F002
Methyl ethyl ketone	Degreasing solvent. Detected in headspace gas of Pu-238 waste.	D032, D076, D077	D035, F005
Pyridine	Uranium triiodide reagent, R&D solvent, and contaminate in cement fixation process.	D077, P080	D038, F005
Selenium	Contaminant of liquids, filtrates, ash, hydroxide cake, and analytical solutions.	C196, C197, C207, D045, D080, M153	D010
Silver (silver nitrate)	Contaminant of plutonium feed, hydroxide cake, ash, actinide separation waste, cement fixation inputs, and laboratory reagent. Leaching, solvent extraction, and laboratory reagent.	C027, C038, C039, C192, C196, C197, C200, C207, D007, D075, D078, D080, M054, M080, M086, M093, M131, M153	D011
Tetrachloroethylene	Degreasing, cleaning solvent, diluent, contaminant of cement fixation process and hydroxide solids. CLS reagent.	C092, C200, D007, D032, D078, P067	D039, F001, F002
Toluene	Actinide and organoactinide R&D reagent. Detected in headspace gas of Pu-238 waste.	C027, D032, D076, P080,	F005
Trichloroethylene	Clean and polish machined parts. Miscellaneous process and hydroxide cake contaminant. Hydrothermal processing and solvent extraction reagent.	C009, C019, C035, C102, C200, D077, D081, M223, P071, P085	D040, F001, F002

RCRA Determinations

Historical Waste Management

Waste stream LA-MIN04-S.001 has historically been managed in accordance with the generator site requirements and in compliance with the requirements of the New Mexico Environmental Department. Based on historical waste management and LANL's TRU Program (Reference LANL waste stream LA-MIN04-S), the containers in this waste stream were managed as hazardous and assigned EPA hazardous waste numbers (HWNs) for arsenic (D004), barium (D005), cadmium (D006), chromium (D007), lead (D008), mercury (D009), selenium (D010), silver (D011), benzene (D018), carbon tetrachloride (D019), chlorobenzene (D021), chromium (D022), methyl ethyl ketone (D035), pyridine (D038), tetrachloroethylene (D039), trichloroethylene (D040), and F-listed solvents (F001, F002, F003, and F005). A review of available AK documentation has determined that this waste is hazardous for the above constituents, and with the exception of F003, the HWNs were retained. HWN F003 was not assigned because the waste stream does not exhibit the characteristic of ignitability. The following sections describe the characterization rationale for the assignment of EPA HWNs (References C121, C173, and D083).

Hazardous Waste Determinations

Ignitability, Corrosivity, Reactivity

The waste material in waste stream LA-MIN04-S.001 does not meet the definition of ignitability as defined in 40 CFR 261.21. D001 (ignitability) does not apply to the solid waste contaminated with aqueous and organic liquids (e.g., acetone, hexane) because: (a) the solid waste is not liquid, and verification that there are no liquids in the waste is performed prior to certification; (b) the solid waste does not spontaneously ignite at standard pressure and temperature through friction, absorption of moisture, or spontaneous chemical changes; (c) the solid waste is not an ignitable compressed gas; and (d) there are no oxidizers present. The materials in the waste stream are therefore not ignitable wastes (D001) (References C121, C173, C201, C202, C203, D071, D083, P096, P102, and P187).

The waste material in waste stream LA-MIN04-S.001 is not liquid and does not contain unreactive corrosive chemicals; therefore, it does not meet the definition of corrosivity as defined in 40 CFR 261.22. D002 (corrosivity) does not apply to the solid waste contaminated with aqueous acids (e.g., hydrofluoric acid, nitric acid) and bases (e.g., potassium hydroxide, sodium hydroxide) because the solid waste is not a liquid. The materials in the waste stream are therefore not corrosive wastes (D002) (References C121, C173, C194, D071, D083, P091, P096, and P102).

The waste material in waste stream LA-MIN04-S.001 does not meet the definition of reactivity as defined in 40 CFR 261.23. D003 (reactivity) does not apply to the solid waste because it does not possess any of the reactivity properties listed in 40 CFR 261.23. The waste material is stable and will not undergo violent chemical change without detonating; it will not react violently with water, form potentially explosive mixtures with water, or generate toxic gases, vapors, or fumes when mixed with water; it does do not contain reactive cyanides or sulfides; and it is not capable of detonation or explosive reaction. The materials in the waste stream are therefore not reactive wastes (D003) (References C121, C173, C201, D071, and D083).

Controls have also been in place to ensure the exclusion of ignitable, corrosive, and reactive constituents. The associated EPA HWNs do not apply to this waste stream for the following reasons (References D025, D037, D049, D083, P090, P091, P096, P097, P102, and P165):

- Liquids were prohibited from solid waste streams at LANL when the Plutonium Facility opened. Currently, TA-55 Waste Management requires that no liquids be disposed of as a solid waste unless the liquid has been absorbed into some media (like vermiculite).

- Chemical Waste Disposal Requests, introduced in June 1980, included check boxes that the waste generator was required to check if the waste contained corrosive acids or bases, or pyrophoric, flammable, corrosive, explosive, toxic, carcinogenic or highly reactive materials. The Certification Plan and related Generator Attachments were implemented in 1987. Waste generators are required to sign a statement on the Waste Origination and Disposition Form documenting that the waste contains "no free liquids, pyrophorics, explosives, compressed gases, powders or materials other than the indicated matrix." Checkboxes are also present for indicating the presence or absence of corrosive chemicals.

- Waste management inspectors perform visual verification of the waste prior to its initial packaging.

- The Waste Profile Request Form, which has been in use at LANL since 1991, includes a statement which is authenticated by the waste generator, that the waste is not ignitable, reactive, or corrosive.

- Solutions containing spent non-halogenated solvents are sent to the Radioactive Liquid Waste Treatment Facility (RLWTF) if they are below the DL for plutonium.

- If above the DL, the solutions are sent to aqueous recovery as part of chloride or nitrate operations.

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

Toxicity Characteristic

Based on review of AK relative to chemicals used or present in the facility and operations potentially contaminating the salt waste, LA-MIN04-S.001 may be contaminated with toxicity characteristic compounds as defined in 40 CFR 261.24. Where a constituent is identified and there is no quantitative data available to demonstrate at the time of waste generation that the concentration of a constituent is below regulatory threshold levels, the applicable EPA HWN is added to the waste stream. The AK also identified the potential presence of organic toxicity characteristic compounds that are assigned the more specific F-listed EPA HWNs. Although these organic characteristic compounds are covered by the assignment of the F-listed EPA HWNs, the toxicity characteristic EPA HWNs are also assigned to the waste stream for consistency with historical site waste coding. Waste stream LA-MIN04-S.001 is assigned the following HWNs: D004, D005, D006, D007, D008, D009, D010, D011, D018, D019, D021, D022, D035, D038, D039, and D040 (References C121, C173, and D083).

Listed Waste

F-Listed Waste

Based on review of AK relative to chemicals used or present in the facility and operations potentially contaminating the salt waste, LA-MIN04-S.001 may contain or be mixed with F-listed hazardous wastes from non-specific sources listed in 40 CFR 261.31. F001, F002, F003, and F005 listed solvents are utilized and potentially contaminate the waste. F003 constituents, including acetone, n-butyl alcohol, ethyl ether, methanol, and xylene, are listed solely because these solvents are ignitable in the liquid form. The waste stream does not exhibit the characteristic of ignitability and therefore F003 is not assigned. The waste stream is assigned F-listed EPA HWNs F001, F002, and F005 (References C121, C173, and D083).

K-Listed Waste

The material in this waste stream is not hazardous from specific sources since it is not generated from any of the processes listed in 40 CFR 261.32.

P- and U-Listed Wastes

Waste stream LA-MIN04-S.001 does not contain and is not mixed with a discarded commercial chemical product, an off-specification commercial chemical product, or a container residue or spill residue thereof. Constituents identified (e.g., hydrofluoric acid [U134]) were further researched and a determination was made that waste does not meet the definition of a listed waste in 40 CFR 261.33. At one time, HWN P120 was applied to certain TRU drums generated in 1998 because of the temporary use of vanadium pentoxide for about six months in that year. Based upon investigation into the way the material was handled, this code is not assigned to this waste stream. A P120 assignment would be used only if waste resulted from spillage of this material or from disposal of un-reacted/unspent material. No un-reacted/unspent material was disposed of in TRU waste drums. In addition, no documented spill of this material occurred. If a spill had occurred, suitable records would exist (e.g., incident reports, waste profile forms). The absence of such documentation, coupled with information obtained through interviews of people who worked with the material, indicates that a P120 assignment is not necessary (References C061, C173, and D083).

Beryllium may be present in the waste stream, but does not meet the definition of a P015-listed waste. Available AK did not identify the use of beryllium powder (References C121, C122, C173, and M283).

Therefore, this waste stream is not assigned P- or U-Listed EPA HWNs.

Polychlorinated Biphenyls (PCBs)

No sources of PCBs are introduced into waste stream LA-MIN04-S.001. All transformers known to contain PCBs have been tracked from initiation of recovery operations. When any transformer oil is drained, the oil is handled by a subcontractor who is wholly responsible for its disposal; this oil does not enter the LANL disposal operations. Suspect PCB fluorescent light ballasts occasionally found in heterogeneous debris would not be present in this waste stream. Therefore, this waste stream is not regulated as a Toxic Substances Control Act waste under 40 CFR 761 (References C096, C173, C201, D080, D083, P012, and P162).

Prohibited Items

Based on the review of container documentation and documented waste management practices, no prohibited items are specifically identified in the waste stream. However, procedures allowed containers greater than four liters, sealed with tape, to be used for waste packaging until LANL WIPP-approved procedures were implemented. Lead shielding is often used to increase handling safety, and thick shielding can obscure real-time radiography (RTR) observations. Additionally, based on interviews with site personnel performing VE and prohibited item disposition repackaging, internal cans (both shielded and unshielded) have been measured for dose rate during repackaging and found to contain waste with radiation levels exceeding 200 millirem per hour. Waste packages containing prohibited items identified during characterization activities will be segregated then dispositioned appropriately and/or repackaged to remove the items prior to certification and shipment (References C150, D025, D083, P154, and P158).

Method for Determining Waste Material Parameters (WMPs) Weights per Unit of Waste

To estimate the WMPs for waste stream LA-MIN04-S.001, batch data reports (BDRs) were obtained from the CCP at LANL. Average, minimum, and maximum WMP weight percentages were calculated using this data. These calculations conclude that the relative waste weight percentages for organic waste materials (plastic debris) and inorganic waste materials (primarily salt and metal debris) for waste stream LA-MIN04-S.001 are 11.0 percent and 89.0 percent, respectively. The WMPs, average weight percent and weight percent range are presented in the following table.

Waste Stream LA-MIN04-S.001 Waste Material Parameter Estimates

Waste Material Parameter	Avg. Weight Percent	Weight Percent Range
Iron-based Metals/Alloys	21.0%	0.0 – 58.3%
Aluminum-based Metals/Alloys	0.0%	0.0 – 0.0%
Other Metals	1.3%	0.0 – 3.2%
Other Inorganic Materials	0.0%	0.0 – 0.0%
Cellulosics	0.0%	0.0 – 0.0%
Rubber	0.0%	0.0 – 0.0%
Plastic (waste materials)	11.0%	0.6 – 55.6%
Organic Matrix	0.0%	0.0 – 0.0%
Inorganic Matrix	66.7%	0.0 – 96.2%
Soils/Gravel	0.0%	0.0 – 0.0%

List of AK Sufficiency Determinations Requested for the Waste Stream

No AK Sufficiency Determinations were requested for this waste stream.

Transportation

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

Beryllium

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

Radionuclide Information

Radionuclide data established by the PF-4 waste generator on a container basis and container data from the Area G waste storage records were evaluated to determine the relative radionuclide weight and activity for waste stream LA-MIN04-S.001. This evaluation was performed using the combined data from 100 percent of the containers in this waste stream. From this evaluation, the two predominant isotopes by mass for the waste stream are Pu-239 and Pu-240, while over 95 percent of the total activity in the waste stream is from Pu-238, Pu-239, Pu-240, and Pu-241 (References C172, C182, C224, D041, M279, and M307).

Summary of Radiological Distribution for Waste Stream LA-MIN04-S.001

Nuclide	Number of Containers with Reported Nuclide	Total Nuclide Wt%[1]	Total Nuclide Ci%[2,5]	Nuclide Wt% Range for Individual Containers[3,5]	Nuclide Ci% Range for Individual Containers[4,5]	Expected Present
WIPP Required Radionuclides						
Am-241	51	0.33%	3.22%	0 - 15.50%	0 - 69.26%	Yes
Pu-238	66	0.14%	**6.96%**	Trace - 83.75%	0 - 97.63%	Yes
Pu-239	66	**92.98%**	**16.62%**	86.89% - 96.71%	0 - 40.51%	Yes
Pu-240	66	**6.28%**	**4.11%**	3.13% - 11.50%	0 - 4.88%	Yes
Pu-242	66	0.03%	Trace	0.02% - 0.22%	0 - Trace	Yes
U-233[6]	Not Reported			-	-	Yes
U-234[6]	Not Reported			-	-	Yes
U-238[6]	Not Reported			-	-	Yes
Sr-90[6]	Not Reported			-	-	Yes
Cs-137[6]	Not Reported			-	-	Yes
Additional Radionuclides						
Pu-241	66	0.23%	**69.10%**	0.08% - 0.81%	43.11% - 90.40%	Yes
U-235	1	Trace	Trace	0 - 0.10%	0 - Trace	Yes

1. This listing indicates the total weight percent of each radionuclide over the entire waste stream.
2. This listing indicates the total activity (curie) percent of each radionuclide over the entire waste stream.
3. This listing is the weight percent range of each radionuclide on a container-by-container basis.
4. This listing is the curie percent range of each radionuclide on a container-by-container basis.
5. "Trace" indicates <0.01 weight or activity percent for that radionuclide.
6. Radionuclides not reported but suspected present from secondary radionuclides or decay.

Payload management will not be utilized for this waste stream.

Source Documents

Source Document Tracking Number	Title
C001	Assay of U-234
C002	Vent and Closure dates for TWISP containers submitted to WWIS
C005	TA-55 Pu-238 Processes Issues and SMEs (Acceptable Knowledge Personnel Interview Form)
C007	Segregation of Pu-238 Processing
C009	Electronic Communication from the Author
C010	Interview with R. Gutierrez, SME, re: P/S Code PE
C011	Interview with Dale Soderquist, SME Re: P/S Code DA
C014	Interview with J. Milewski, SME, re: P/S Code ELW
C017	Interview with B. Martinez, SME, re: P/S Codes RAP, RAP2, FSPF, PF, and JA
C018	Interview with J. Simpson, SME, re: P/S Code RL
C019	Interview with G. Zaker, SME, re: P/S Code MA and Chemicals Used in Machining
C020	Interview with G. Zaker, SME, re: P/S Code MA
C023	Interview with G. Jarvinen re: P/S Codes AD, APD
C026	Interview with L. Avens re: P/S Codes MAS, SA
C027	Interview with B. Zwick and J. Byrd Re: P/S Codes AC1 and AC2
C031	Interview with C. Davis re: P/S Code SMP
C033	Interview with J. Foxx re: P/S Codes RD, NCD, WM, and XO/XO
C035	Interview with R. Masen re: P/S Code ME
C037	Interview with D. Wulff re: P/S Code XO
C038	Interview with John Musgrave – TA-55 Miscellaneous Operations, RD&D Processes
C039	Interview with J. Foxx re: Process inputs to P/S Code AD
C040	Interview with J. Foxx re: P/S Codes PB, PuBe, CC, MB, MS, FF, BF, and other issues
C041	Interview with J. Foxx re: Use of Lead in P/S Codes DOP
C047	Metal Operations Process AK; Information on Chemical Use in P/S Code FF
C054	Air Sparging to Eliminate Pyrophoric Sodium
C056	Layers of Packaging in TA-55 Combustible TRU Waste
C057	Commingling of Defense and Nondefense TRU Waste
C061	Vanadium, Vanadium Pentoxide, TA-55-19, TA-55-30
C062	Wire Twist-Tie and Plastic Electrical Tie Bag Closure
C064	Air Sparging to Eliminate Pyrophoric Sodium
C065	WACCC Audit Finding #1 (April 27-May 1, 1987)
C066	Information on Chemical Use in P/S Code FF
C067	Sources of Cs-137, Pa-231, and Cm-244 in TA-55 waste
C068	Timeline for disposal of TA-55 waste with P120
C069	Ac-227 Drums
C073	Interview of J. Foxx re: Sources of Cs-137 and Pa-231 in TA-55 Waste
C076	Memo to P. Rogers re: "Secondary Radionuclides and Toxic Metals in TA-55 TRU Waste"
C079	Interview of J. Foxx re: P/S Codes PPD, UA, VD, IN, and WE
C080	Collection of Correspondence, Comments, and AK Summaries
C081	Interview with J. Foxx
C082	Interview with J. Foxx and Supporting Documentation re: Defense Relationship of TA-55 Waste
C083	Interview with J. Foxx, SME
C085	Interview with M. West of NMT-2 and G. Bird of NMT-2

Source Document Tracking Number	Title
C087	Interview with J. Foxx of NMT-7-WM/EC-99-118
C089	Interview with J. Foxx re: Pu-238 and Effluent to TA-50
C092	Interview with J. Foxx
C094	Interview with T. Hayes of TA-55 Nitrate Operations re: Draft AK Summary for TA-55 Nitrate Operations,12-19-99 (attached)
C095	Comments from T. Hayes and J. Foxx on the Acceptable Knowledge Summary for TA-55 Nitrate Operations
C096	Response to comments on the AK Summary for TA-55 Nitrate Operations
C098	Record of Communication for Interview with J. Foxx
C100	Memo with Attachments to K. Dziewinski re: Material Type Isotopic Compositions
C101	AK Isotopic Files for Input to NDA Radioassay Spreadsheets
C102	Acceptable Knowledge Personnel Interview Form – Metal Ops
C104	Acceptable Knowledge Personnel Interview Form – Metal Operations
C105	Acceptable Knowledge Personnel Interview Form – Metal Operations
C108	Secondary radionuclides used in P/S Code PI
C113	AK Interview with Jim Foxx re: P/S Code FF, Use of Kynar, Portland Cement, Code HRA, 40 mm Gun
C117	A Few Issues
C121	Detailed Chemical/RCRA Evaluation
C122	Be Contamination
C124	Interview with Jim Fox Regarding Pu-238
C125	Decay Corrected Values for LANL Heat Source Plutonium
C129	Jim Foxx's Review and Comments on CCP-AK-LANL-006
C130	Jim Foxx's Review and Comments on Nitrate and Pyrochemical/Chloride Operations Process Flow Diagrams
C131	Jim Foxx's Review and Comments on Draft Process Flow Diagrams
C132	Pu-239 Operations Detailed Process Flow Diagrams
C133	Radiological Evaluation of Waste Stream LA-MHD01.001 Based on the Addition of Waste Stream LA-MHD02.01
C135	Interview with Site Personal Performing VE and PID Repackaging Regarding High Activity Waste
C136	Interview with Dennis Wulff Regarding High Activity Waste
C138	Addition of Solidified Inorganic and Organic Process Solids (Waste Stream # LA-CIN01.001) to Acceptable Knowledge Report AK6
C139	Calculation of Individual and Total Radionuclide Masses and Activities for Waste Stream # LA-CIN01.001
C140	Interview with Gerry Veazey Regarding the Cement Fixation Process
C142	Opening of Drum (#8260) of Retrieved TA-55 Cement Waste
C143	Documentation Re Evaluation of TRU Waste Can Drums Retrieved from TA-54, Area G
C144	Interview with Dennis Wulff Regarding the Packaging of Pu-238 Waste at TA-55
C145	Evaluation of LANL Pu-238 Waste Management Practices
C147	RCRA and Chemical Evaluation for LANL Waste Streams LA-MHD01.001 and LA-CIN01.001
C149	Fiberboard Drum Liners Used During Repackaging
C150	Remediation/Repackaging Secondary Waste Disposition
C152	Future Waste Projections for Waste Streams LA-MHD01.001 and LA-MIN02-V.001
C153	Evaluation of Volume, Period Generation, and Calculation of Individual and Total Radionuclide Masses and Activities for Waste Stream LA-MHD01.001
C154	Evaluation of Volume, Period Generation, and Calculation of Individual and Total Radionuclide Masses and Activities for Waste Stream LA-MIN02-V.001

Source Document Tracking Number	Title
C155	RCRA Evaluation for LANL Waste Stream LA-MIN02-V.001
C156	Email to M. J. Papp re: Material Reclamation Project
C157	Prohibition on PCB waste lifted from LANL
C163	Change of LA Waste Stream Designation For TRU Oversize Crates at TA-54
C164	Information on Packaging Changes
C165	Decontamination and Volume Reduction System (DVRS) Information
C171	Homogeneity of LANL Waste Stream LA-CIN01.001
C172	Evaluation of Volume, Period Generation, and Calculation of Individual and Total Radionuclide Masses and Activities for Waste Stream LA-MIN04-S.001
C173	RCRA Evaluation for LANL Waste Stream LA-MIN04-S.001
C174	Projected Future Waste Generation for Waste Stream LA-MIN04-S.001
C175	Evaluation of Volume, Period Generation, and Calculation of Individual and Total Radionuclide Masses and Activities for Waste Stream LA-MHD01.001
C176	Email from Kapil Goyal Regarding Compact Fluorescent Bulbs
C177	Secondary Waste Generated by the Remediation/Repackaging Processes at Dome 231 and WCRRF
C178	Drum Washing of Drums Retrieved from Below-Grade
C179	Evaluation of Volume and Calculation of Individual and Total Radionuclide Masses and Activities for Waste Stream LA-MHD01.001
C180	Evaluation of Volume and Calculation of Individual and Total Radionuclide Masses and Activities for Waste Stream LA-CIN01.001
C181	Evaluation of Volume and Calculation of Individual and Total Radionuclide Masses and Activities for Waste Stream LA-MIN02-V.001
C182	Evaluation of Volume and Calculation of Individual and Total Radionuclide Masses and Activities for Waste Stream LA-MIN04-S.001
C184	Determination of Flammable VOCs For Waste Stream LA-CIN01.001 Headspace Gas Samples
C185	TA-54 Building 412 vs. DVRS Facility
C186	Letter on Material Type Isotopic Composition
C187	Memorandum to Pamela Rogers, Transuranic Database Modifications
C188	Memorandum to Pam Rogers; Layers of Packaging in TA-55 Combustible TRU Waste
C189	Secondary Radionuclides and Toxic Metals in TA-55 TRU Waste
C190	Memo to TWCP Records Center: Commingling of Defense and Nondefense TRU Waste
C191	Memo to TWCP Records Center: Pu-238 and Pu-239 Waste Management
C192	Memorandum to Pamela Rogers; Acceptable Knowledge of Pu-238 Waste Generated at the Los Alamos Plutonium Facility, TA-55
C194	Comments from Jim Foxx on the Draft Pu-238 AK Summary Report (dated November 1999)
C195	Interview with Jim Foxx: Pu-238 and Effluent to TA-50
C196	Email from Jim Foxx: RCRA Codes for Pu-238
C197	Interview with Jim Foxx and Gary Rinehart Relating to the RCRA Characterization and Management of Pu-238 Liquids and P/S Code Operations
C198	Interview with Jim Foxx Regarding P/S Code PI
C199	Interview with Gordon Jarvinen Regarding TA-55 Miscellaneous Operations – RD&D Processes
C200	Jim Foxx's comments on Draft Acceptable Knowledge Summary for TA-55 Nitrate Operations
C201	Comment Resolution for Nitrates AK Summary Report (dated 2/25/00)
C202	Memorandum to B.T. Reich: Air Sparging to Eliminate Pyrophoric Sodium
C203	Memorandum to B.T. Reich: Experimental data on calcium pyrophoricity in salts

Source Document Tracking Number	Title
C204	Interview with Jim Foxx; Segregation of non-defense wastes from defense wastes
C205	Interview with Jim Foxx; Answers to questions of use of Ag, disposal of ash and resins, and use of gases
C206	Acceptable Knowledge Personnel Interview with Jim Foxx: Disposal of Spray Cans Used in Gloveboxes
C207	Acceptable Knowledge Personnel Interview with Jim Foxx: All Process Wastes
C208	Acceptable Knowledge Personnel Interview with Jim Foxx: Sources of Cs-137 and Pa-231 in TA-55 TRU Waste
C209	Email from SME: Sources of Cs-137, Pa-231, and Cm-244 in TA-55 TRU Waste
C210	AK Personnel Interview of Lisa Pansoy-Hjelvik, Description of P/S Code ASP
C211	Interview with Gary Rinehart regarding P/S code WS Operations
C212	Memorandum to Ed Wilmont, Pu-238 Waste at TA-55
C213	AK Personnel Interview with Jim Foxx: Information on P/S Codes PPD, UA, VD, IN and WE
C214	AK Personnel Interview with Jim Foxx: RD&D Processes (RD, NCD, WM)
C215	Email From Wayne Punjak to Pamela Rogers: Ac-227 Drums
C216	Memorandum to RMDC; Vent and Closure dates for TWISP containers submitted to WWIS
C219	Interview with Jim Foxx: Material Type 83 used at TA-55
C220	Jim Foxx's Review and Comments on Draft Process Flow Diagrams
C221	Detailed Pu-238 Operations Process Flow Diagrams
C222	Decay Corrected Values for LANL Heat Source Plutonium
C223	Record of Communication for interview with Jim Foxx: All Process Wastes
C224	Addition of 7 Containers to Waste Stream LA-MIN04-S.001
D002	Acceptable Knowledge Report for Legacy Debris TA-55 Waste Streams Containing Pu-239
D003	Hazardous Waste Facility Contract with DOE, University of California & Summary of Modifications
D004	Attachment A (Waste Analysis Plan) of the LANL Hazardous Waste Permit
D007	Process Acceptable Knowledge Report for Chloride Operations at TA-55
D008	Acceptable Knowledge Report for Newly Generated Waste from Nitrate Operations at TA-55
D009	Acceptable Knowledge Report for Newly Generated Waste from Miscellaneous Operations at TA-55
D010	Acceptable Knowledge Report for Newly Generated Waste from Special Processing Operations at TA-55
D011	Acceptable Knowledge Report for Newly Generated Waste from Metal/Pyrochemical Operations at TA-55
D013	Los Alamos National Laboratory Transuranic Waste Characterization Acceptable Knowledge Information Summary (AKIS)
D014	TA-55 Facility Safety Analysis Report (FSAR), Excerpt (Chapter 1 missing)
D017	Draft Acceptable Knowledge (Report) for TA-55 Nitrate Operations (and Interview comments from Tim Hayes)
D018	Transuranic Waste Interface Document for the Waste Characterization, Reduction, and Repackaging Facility and the Radioactive Materials Research, Operations, and Demonstration Facility
D019	Waste Management Plan for the 40-mm Powder Breach Project
D023	TA-55 Plutonium Facility Acceptable Knowledge Report
D024	TA-55 Transuranic Waste Interface Document
D025	Acceptable Knowledge Report for Debris Waste Streams Containing Pu-239

Source Document Tracking Number	Title
D026	Acceptable Knowledge Information Summary For LANL Transuranic Waste Streams
D028	Process Acceptable Knowledge Report for Pyrochemical Processes at TA-55
D029	Process Acceptable Knowledge Report for Metal Operation Processes at TA-55
D030	Process Acceptable Knowledge Report for Special Processing at TA-55
D032	Process Acceptable Knowledge Report for Miscellaneous Operations at TA-55
D034	Waste Management Site Plan
D036	TA-55 Plutonium Facility Acceptable Knowledge Report, Nitrate Operations
D037	Los Alamos TRU Waste Certification Plan for Newly Generated TRU Waste
D041	Acceptable Knowledge Information Summary for LANL Transuranic Waste Streams
D045	Final Safety Analysis Report for TA-55 NMT
D048	Wastes from Plutonium Conversion and Scrap Recovery Operations
D049	40-mm Powder Breech Project Waste Management Plan
D050	Waste-form Development for Conversion to Portland Cement at LANL Technical Area 55
D055	Rocky Flats Environmental Technology Site Report 1995
D056	TWISP Final Record
D057	Processing Waste Acceptance Criteria Exception Forms
D058	Review and Completion of the TWSR
D059	Environmental Protection: Managing Waste; Air Quality; Ecological and Cultural Resources...
D060	Repackaging Plutonium-238 High Dose Rate Material for Waste Disposal
D062	Upgrade and Performance Testing for the LINC Systems at TA-54 Area G
D063	Project Management Objectives for Pit 9 TRU Waste Retrieval
D064	Retrieval Plan for TA-54, Area G TRU Waste for Pit 9
D065	TA-54, Area G Pit 9 Waste Description
D066	TA-54, Area G Pit 9 Waste Description
D067	TA-54, Area G Trenches A-D Waste Description
D068	TA-54 Area G Documented Safety Analysis
D070	Wastes from Plutonium Conversion and Scrap Recovery Operations
D071	Final Safety Analysis Report for TA-55 NMT
D073	Lightweight Radioisotope Heater Unit (LWRHU) Production for the Galileo Mission
D074	Lightweight Radioisotope Heater Unit (LWRHU) Production for the Cassinni Mission
D075	Sampling and Analysis Project Validates Acceptable Knowledge on TA-55-43, Lot No. 01
D076	Acceptable Knowledge Summary Report for Waste Streams TA-55-43, TA-55-44, TA-55-45, TA-55-56, TA-55-47
D077	Process Acceptable Knowledge Report for Miscellaneous Operations at TA-55
D078	Process Acceptable Knowledge Report for Nitrate Operations at TA-55
D079	Process Acceptable Knowledge Report for Special Processing at TA-55
D080	Process Acceptable Knowledge Summary Report for Plutonium-238 Operations at TA-55
D081	Process AK Report for NG Waste from Metal/Pyrochemical Operations at TA-55
D082	Institutional Plan FY2002-FY2007
D083	Acceptable Knowledge Information Summary for LANL Transuranic Waste Streams
D084	Acceptable Knowledge Report for Debris Waste Streams Containing Pu-239
D085	Determination of H2 Diffusion Rates through Various Closure on TRU Waste Bag-Out Bags
DR001	Discrepancy Resolution Waste Stream Assignment
DR004	Discrepancy Resolution Non-Mixed TA-55 Pu-239 Debris Drums

Source Document Tracking Number	Title
DR005	Acceptable Knowledge Source Document Discrepancy Resolution - Homogeneous Solids in Containers S818280, S818380, S822622, S818309, S832485, S862359, S802994, and S811632
DR007	Acceptable Knowledge Source Document Discrepancy Resolution – Layers of Confinement
DR008	Acceptable Knowledge Source Document Discrepancy Resolution – TA-55 Homogeneous Solids Containing Greater Than 50% Heterogeneous Debris
DR029	Acceptable Knowledge Source Document Discrepancy Resolution – Drum No. 86309 Contained a Small Lighter Fluid Can with ~ 65 ml of liquid
M001	Example Waste Generator Forms for TRU Waste
M002	Review of Headspace Gas Data from Pre-WAP Analyses for Additions to AK
M006	Pit Production
M011	Waste Determination Report for Waste Stream TA-55-43 Lot No. 01
M012	Waste Profile Form Guidance
M013	Waste Generator Guidance for Completing the TRU Waste Storage Record (TWSR)
M014	General Waste Management Requirements
M015	Managing Radioactive Waste
M016	Hazardous and Mixed Waste
M017	Documentation for RadWaste ORACLE Database's List of Acceptable Radioisotopes, Specific Activities, Categories and Regulatory Limits
M018	Los Alamos National Laboratory Waste Profile System Forms
M019	Generator Documentation
M023	Procedure Review Sheets for 410-MPP, "Electrorefining of Plutonium Metal-Crac Cell"
M024	Procedure Review Sheets for 435-MPP, "Reverse Cell Electrorefining (R&D Project)"
M026	Coalesence of Plutonium Metal (Excerpts) and Procedure Review Sheets
M028	Procedure Review Sheets and Excerpts from Salt Stripping of Electrorefining Salts Using Oxygen/Argon
M029	Procedure Review Sheets and Excerpts from Electrorefining of Plutonium Metal, Nominal Six Kilogram Scale
M030	Measuring Physical Properties (Excerpt)
M032	Acceptable Knowledge Personnel Interview Form - Metal Operations
M037	Multiple-Cycle Direct Oxide Reduction
M041	Procedure Review Sheets for Revs 0-5 of "Electrorefining of Plutonium Metal," Doc. # 258-MPP-R00
M043	Procedure Review Sheet for Procedure 290-MPP-R02
M044	Procedure Review Sheets for Procedure 216-MPP-R01 "Oxalate Precipitation of Ion-Exchange Eluates"
M045	Procedure Review Sheets for Procedure 215-MPP-R01, "Oxalate Precipitation of Plutonium from Nitrate Solutions"
M048	Procedure Review Sheets for Procedure 230-MPP-R01, "Hydroxide Precipitation for Oxalate Filtrates"
M050	Procedure Review Sheet for 474-REC-R01, "Process Research and Development Facilities"
M053	Procedure Review Sheet for 426-REC-R00, "Residue Leaching"
M054	Procedure Review Sheet for 461-REC-R00, "Nitrate Anion Exchange"
M057	Procedure Review Sheet for 431-REC, "Procedure for Disposal of Oils Containing Recoverable Amounts of Pu in the Form of (U, Pu) Carbides"
M061	Process Review Sheet for RAB-MS-2000, "Carbothermic Process Material Specification for Uranium Oxide Powder (Depleted)"
M064	Process Accountability Flow Documents for Various Nitrate Processes

Source Document Tracking Number	Title
M067	Procedure Review Sheet for 430-REC, "Recovery of Contaminated Platinum"
M069	Procedure Review Sheet for 420-REC, "Processing of Contaminated Solids"
M072	Procedure Review Sheets for 444-REC, "Dissolving Chloride Melt Portion of Electrorefining Residues"
M074	Procedure 474-CLO, Hydroxide Precipitation of Chloride Waste Streams
M076	Hydroxide Precipitation of the Plutonium in Chloride Waste Streams
M080	Interview with J. Foxx
M084	Procedure 437-REC, "Polystyrene Cube Processing"
M085	Procedure 445-REC, "Preferential Dissolution of Uranium Oxides from a Uranium-Plutonium Oxide Mixture"
M086	Procedure 490-REC, "Catalyzed Electrochemical Plutonium Oxide Dissolver (CEPOD)"
M088	Procedure 423-REC, "Ash Leaching"
M089	Procedure 431-REC, "Leaching of Contaminated Metals in Nitric Acid"
M090	Procedure 421-REC, "Pickling or Surface Leaching" and "Leaching of Noncombustible Materials in Nitric Acid"
M092	Procedure 490-REC, "Mediated Electro-Oxidation of Low-Level Organic Waste" and "Catalyzed Electrochemical Plutonium Oxide Dissolver"
M093	Procedure 427-REC, "Incinerator Ash R&D Facility"
M095	Procedure 447-REC, "Dissolution of Impure Plutonium Dioxides, Filter Residues, and Glovebox Sweepings in Hot HNO3-HF"
M096	Procedure 472-REC, "Nitrate Anion Exchange for the Rich Column Material System"
M097	Procedure 471-REC, "Nitrate Anion Exchange for the Lean Residue System"
M098	Procedure 470-REC, "Nitrate Anion Exchange for the Rich Residues Ion Exchange Column"
M099	Procedure 473-REC, "Nitrate Anion Exchange for the Dissolved Solids (DS) System"
M103	Procedure 480-REC, "Peroxide Precipitation"
M112	Procedure 407-MPP, Chlorination of Plutonium Compounds
M113	Procedure 420-MPP, Reduction of PuO_2 to metal
M116	Review Sheet for Procedure 445-MPP, "Coalescence of Plutonium Metal"
M118	Review Sheet for Procedure 209-MPP, "Pickling, Leaching, and Dissolution"
M123	Procedure 213-MPP, Conversion of Plutonium Oxalate to Oxide using heat lamp and hot plate
M125	Procedure 217-MPP, Peroxide precipitation
M126	Procedure 226-MPP, Dissolving Chloride Melt Portion of Electrorefining Residues
M127	Procedure 232-MPP, Oxalate Precipitation of Pu from Hydrochloric solutions
M129	Procedure 224-MPP, Chlorination of Plutonium Compounds
M130	Procedure 251-MPP, Multiple-cycle Direct Oxide Reduction
M131	Procedure 273-CLO, Purifying and Recovering Pu by Chloride anion exchange
M132	Procedure 242-MPP, Precipitation of Plutonium Oxalate in Hydrochloric Acid
M134	Direct Oxide Reduction R&D
M137	Procedure HS-NMT9-PP-42, "Particle Size Analysis of Oxide Powders Procedure"
M142	Procedure 435-REC, "Processing Lapping Oil and Similar Organics"
M144	Procedure 491-REC, "Advanced Testing Line for Actinide Separations (ATLAS) Unit Operations"
M151	Procedure 464-Rec, "Peroxide Precipitation"
M153	Development of Control Charts for the Evaporator Bottoms Newly Generated Waste Stream from TA-55
M154	Miscellaneous MSDSs
M156	Project 2010 Container Specific Database Information for LA-MHD01.001

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M157	Project 2010 Database Summary of Waste Codes from LA-MHD01.001
M158	Project 2010 Database Information Waste Item Descriptions Summary
M159	Project 2010 Container Specific Database Information - Area G Reported Radionuclides
M160	LANL Project 2010 Summary of AK Discrepancies
M164	Procedure Review Sheet for Identification of Potential Hazards Associated with Metallographic Operations in Rooms G104 and G107
M169	Procedure Review Sheet - Comminution and Nickel Addition Procedures for Uranium Carbide or Uranium-Plutonium Carbide
M172	Procedure Review Sheet for Manual Pellet Pressing Procedure for Uranium Carbide or Uranium-Plutonium Carbide Powders
M174	Procedure Review Sheet for Procedure for Measuring the Density of Sintered Fuel or Insulator Pellets by a Water Immersion Technique
M180	Procedure Review Sheet - Hydroxide Precipitation of Chloride Solutions Containing Organic Chemicals
M181	Procedure Review Sheet - Oxalate Precipitation of Plutonium from Chloride Solutions
M182	Procedure Review Sheet - Purification and Recovery of Plutonium by Chloride Anion Exchange
M184	Procedure Review Sheet - Dicesium Hexachloro Plutonate (DCHP)
M185	Procedure Review Sheet - Head End Processing of Aqueous Chloride Plutonium
M186	Procedure Review Sheet - Plutonium Recovery from Chloride Solutions by Oxalate
M189	Procedure Review Sheet - Vessel Handling and Unloading
M200	Plutonium Electrorefining
M202	Preparation of Pu Metal by the Fluoride Reduction Process
M206	Procedure Review Sheet - Salt Stripping of Electrorefining Salts
M212	Procedure Review Sheet - Six Foot Sphere Handling and Unloading
M215	LANL Hard Copy TWSRs for LA-MHD01 and LA-MHD02 from 2500 Set
M216	LANL Hard Copy TWSRs for LA-MHD01 and LA-MHD02 from AK6 Remaining Set
M217	LANL Hard Copy TWSRs for LA-MHD01 and LA-MHD02 from AK7 Remaining Set
M218	LANL Hard Copy TWSRs for LA-MHD01 and LA-MHD02 from Imagic Printout Set
M219	Electronic image of TWSRs and RSWD Forms from Imagic Software
M220	Vent Date Information Sources
M222	CONCERT Database
M223	Design of Hydrothermal Waste Treatment Units for Operation at Pressures from 1 to 1,000 Bar
M224	LANL Hard Copy RSWDs and TWSRs for LA-MHD01 and LA-MHD02
M226	LANL Hard Copy RSWDs and TWSRs for LA-MHD01 and LA-MHD02
M236	TA-55 Cemented RSWDs/TWSRs
M238	NUGEN Drum TWSRs
M241	Drum Spreadsheet for Additional LA-MHD01.001 Containers
M242	TA-55 Waste Stream LA-MIN02-V.001 RSWDs/TWSRs and Drum Spreadsheet
M252	TA-55 Cement Fixation Drum Logbook
M273	LA-MHD01.001 TWSRs
M274	TWSRs for Containers 8000 Series
M275	TA-55 NUGEN TWSRs
M276	TA-55 VE NUGEN TWSRs
M279	TA-55 Waste Stream LA-MIN04-S.001 RSWDs/TWSRs, Drum Spreadsheet, and BDRs
M280	Pit 9 Waste Information
M281	Trenches A-D logbook
M283	Assembled Tables taken from Milliwatt Generator Project Progress Reports
M284	MSDSs for Pu-238 Operations

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M285	Process Flow Diagram for Routine Pu-238 Heat Source Production - Fuel Fabrication
M286	Particle Size Analysis of Oxide Powders
M287	Process Flow Diagram for Metallography
M288	Process Flow Diagram for Pu-238 Scrap Processing
M289	Introductory Glovebox Transfer of an EP-60 into and EP-61
M290	Decontamination of Ir Using Molten MgCl2
M291	Process Flow Diagram for Recovery of Pu-238 Oxide from Contaminated Iridium
M292	Dissolution of Ir by Electrochemical Methods
M293	Process Flow Diagram for Pu-238 Waste Solidification
M294	Recovery of Plutonium-238 from Sucrose Solutions
M295	Documentation for RadWaste ORACLE Database's List of Acceptable Radioisotopes, Specific Activities, Categories and Regulatory Limits
M296	Generator Documentation (RSWD/TWSRs)
M298	Concert Database Query, Physical Parameter Inventory Analysis for Waste Stream LA-MHD02.002
M299	Thermal Decomposition of Cellulose Items
M300	General Waste Management Requirements
M301	Hazardous and Mixed Waste
M302	Managing Radioactive Waste
M303	Waste Profile Form Guidance
M304	Waste Generator Guidance for Completing the TRU Waste Storage Record (TWSR)
M306	The Actinide Research Quarterly, Magnetic Levitation Results in High-Purity Plutonium Metal
M307	Acceptable Knowledge Isotopic Ratios (AKIR) database, Versions 2.0 and 2.1
M308	Pu-238 Defense Determination Resolution
M309	Radiological Discrepancy Report
M310	RCRA EPA Hazardous Waste Code Assignment Discrepancy Report
M312	CCP-AK-LANL-007 Document Conversion To CCP-AK-LANL-006 Source Documents
P001	Nitric Acid Process Evaporator
P005	Thorium Fluoride Precipitation
P008	Cement Fixation of Process Residues in 55-Gallon Drums (Excerpts)
P011	Cement Fixation of Process Residues in One-Gallon Cans (Excerpts)
P012	Organic Liquid Emulsification
P014	Casing Enriched Plutonium
P015	Machining of Pu-239 and Other Actinide Alloys for Research
P024	Nitrate Anion Exchange
P025	Dissolution and/or Leaching of Various Materials in Hydrochloric Acid
P026	Oxalate Precipitation of Plutonium from Hydrochloric Acid Solutions
P027	Purification and Recovery of Plutonium by Chloride Anion Exchange
P028	Hydroxide Precipitation
P029	Procedure for Pyroredox Processing of Spent Electrorefining Anodes (P/S RA)
P033	Procedure "Cleaning Requirements for Large Components" P/S EL
P034	Procedure "Cleaning for Small Components"
P036	Procedure "Fabrication and Inspection of He-Bonded Fuel Elements" P/S EL
P042	Procedure "Sodium Bonding" P/S EL
P044	Procedure "Encapsulation of Radioactive Isotopes" P/S WE
P045	Procedure "Plasma Chemical Reactor" P/S PCH
P046	Procedure "Safe Operating Procedure for Pit Disassembly" P/S MW, PD, SRL
P049	Procedure "Ultrasonic Degreaser" P/S MA

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P051	Procedure "Operating the Autoclave Hot Isostatic Press" P/S BA
P052	Procedure "Cleaning of SP-100 Fuel Pin Components"
P053	Procedure "Pit Disassembly" P/S SRL
P056	Procedure "Heat Treatment of SP-100 Components"
P064	Procedure "Hydrothermal Processing"
P065	Procedure "Superacid Research and Development"
P067	Procedure "Room 208 Purification Process Development"
P069	Procedure "Super Oxidizer Fluorination of Ash"
P070	Procedure "Operation of the Plutonium FOOF Loop"
P071	Procedure "Operation of the Plutonium Fluorination Loop"
P076	Procedure "Research, Development, and Demonstration Facilities"
P077	Procedure "Research, Development, and Demonstration Facilities"
P078	Procedure "Sensors and Instrumentation Development"
P080	Procedure "Organoactinide R&D"
P081	Procedure "Actinide Chemistry Research and Development"
P083	Procedure "Plutonium Chlorination"
P085	Procedure "Developmental Chloride Solvent Extraction Process"
P090	TA-55 Generator Attachment to the Los Alamos TRU Waste Certification Plan
P091	Attachment 3 to the TRU Waste Certification Plan, R05
P092	TA-55 Transuranic Waste Interface Document for Debris Waste
P094	Documenting Acceptable Knowledge For Legacy Waste Items
P095	Inspecting, Packaging, Rejecting, and Remediating Transuranic Waste for WIPP and for TA-54 Safe Storage
P096	TA-55 Waste Management, TWCP-351
P097	Performing Visual Inspections of TRU Waste
P098	Packing TRU Waste Containers
P102	Procedure 406-GEN, "Standard Operating Procedure for the Waste Management at TA-55, CMB-11 Facility"; also LA-UR-01-6170
P103	Thorium Fluoride Precipitation
P104	Electrorefining of Plutonium Metal, Nominal Six Kg Scale
P105	Chloride Melt Preparation for Electrorefining and Fused Salt Extraction
P109	Acceptable Knowledge Personnel Interview Form re: Pyrochemical waste stream
P110	Acceptable Knowledge Personnel Interview Form re: Pyrochemical waste stream
P117	Waste Visual Examination and Packaging
P118	Acceptable Knowledge Documentation
P120	Calculation of UCL90 Values for Headspace Gas, VOC, Total VOC, SVOC, and Metals Data
P125	Characterization of Direct Oxide Salts
P147	Electrochemical Systems Operations, NMT-15 Hazard Control Plan
P148	Machining of Special Nuclear Materials in Glovebox Enclosures, NMT-15 Hazard Control Plan
P152	Cement Fixation of Process Residues in One-Gallon Cans
P153	Cement Fixation of Process Residues in 55-Gallon Drums
P154	Standard Waste Visual Examination and Prohibited Item Disposition
P155	Pu-238 Residue Solidification
P156	Thermal Decomposition of Cellulose Items Contaminated with Plutonium-238
P157	Direct Oxide Reduction of Pu-238 Oxide
P158	Prohibited Items Disposition Dome 231 Permacon
P159	Processing Waste in the Waste Characterization Glovebox

Source Document Tracking Number	Title
P160	Introducing and Removing Items and Samples from the Glovebox Systems in PF-4
P161	TA-55 Waste Management
P162	TA-55 Waste Management Requirements
P163	Nuclear Materials Packaging
P164	Inspecting, Labeling, and Preparing TRU Waste Containers
P165	Performing Visual Inspections of TRU Waste
P166	Packing TRU Waste Containers
P167	Packing TRU Waste Containers
P168	Sealing TRU Waste Containers
P169	Sealing TRU Waste Containers
P170	Material Reclamation
P171	Inspecting and Preparing a Drum
P172	Inspecting the Cement and Performing the Drum-in and Drum-out
P173	Waste Generating Instruction for Heat-Source Plutonium Solid TRU Waste
P174	Trenches A – D Retrieval Operations
P175	Sort, Segregate, Size Reduction, and Repackaging Activities
P177	TA-55 Waste Management
P178	Attachment 3 to the Los Alamos TRU Waste Certification Plan for Newly Generated TRU Waste
P179	TA-55 Generator Attachment to the Los Alamos TRU Waste Certification Plan
P180	Sampling PuO2 Procedure
P181	Ceramography of 238 PuO2 Fuel Samples
P182	238 Pu Waste Solidification
P183	Cement Fixation of Process Residues in 55-Gallon Drums
P185	Cement Fixation of Process Residues in One-Gallon Cans
P186	Organic Liquid Emulsification
P187	Characterization of Direct Oxide Salts
P188	Standard Operating Procedure for the Waste Management at TA-55
P189	Direct Oxide Reduction of 238PuO2
P190	Advanced Testing Line for Actinide Separations (ATLAS) Unit Operations
P192	TA-54 Area G TRU Crate SSSR Activities
U001	Review of Headspace Gas Data From Pre-WAP Analyses For Additions to AK
U002	Review of RTR Data From Pre-WAP Analysis For AK
U004	Process Status Data from Area 55 WMD & Cert. Database
U005	Twenty-Five Years of Radioactive Waste Cementation at Los Alamos National Laboratory
U007	Review of RTR Data From Pre-WAP Analysis for AK