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

ENTERED

NOV 3 2011

Mr. John Kieling, Acting Bureau 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-MHD02-PTX.001

Dear Mr. Kieling:

The Carlsbad Field Office has approved the Waste Stream Profile Form (WSPF) Number LA-MHD02-PTX.001, *Heterogeneous Debris from the Pantex Plant* for the Central Characterization Project (CCP) at Los Alamos National Laboratory.

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.

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.

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

Sincerely,

Edward Ziemianski
Interim Manager

Enclosure

111104

CBFO:NTP:JRS:GL:11-1795:UFC 5900.00

cc: w/enclosure
T. Hall, NMED *ED
J. Davis, NMED ED
S. Holmes, NMED ED

cc: w/o enclosure
J. R. Stroble, CBFO ED
N. Castaneda, CBFO ED
W. Mackie, CBFO ED
T. Morgan, CBFO ED
CBFO M&RC
*ED denotes electronic distribution

Attachment 2 – CCP Waste Stream Profile Form

(1) Waste Stream Profile Number: LA-MHD02-PTX.001						
(2) Generator site name: Los Alamos National Laboratory				(4)Technical contact: Veronica Waldram		
(3) Generator site EPA ID: NM0890010515				(6) Technical contact phone number: 575-234-7187		
(5) Date of audit report approval by New Mexico Environment Department (NMED): August 27, 2004, June 23, 2005, August 31, 2006, June 2, 2008, September 2, 2008, July 24, 2009, September 22, 2010; September 23, 2011						
(7) Title, version number, and date of documents used for 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 8, December 29, 2010; CCP-AK-LANL-011, Central Characterization Project Acceptable Knowledge Summary Report for Los Alamos National Laboratory Pantex Plant Waste, Waste Stream: LA-MHD02-PTX.001, Revision 1, April 29, 2011						
(8) Did your facility generate this waste?	YES		NO	X		
(9) If no, provide the name and EPA ID of the original generator: Pantex Plant, Amarillo, Texas EPA ID - TX4890110527						
Waste Stream Information						
(10) WIPP ID: LA-MHD02-PTX.001				(11) Summary Category Group: S5000 – Debris Waste		
(12) Waste Matrix Code Group: Heterogeneous Debris Waste				(13) Waste Stream Name: Heterogeneous Debris from the Pantex Plant		
(14) Description from the TWBIR: Mixed heterogeneous debris waste resulting from the clean-up of a single off normal event when a sealed pit cracked during a dismantlement operation.						
(15) Defense TRU Waste:	YES	X	NO			
(16) Check One:	CH	X	RH			
(17) Number of SWBs NA	(18) Number of Drums[2] 3 55-gallon drums			(19) Number of Canisters NA		
(20) Batch Data Report numbers supporting this waste stream characterization: See Characterization Information Summary for correlation of containers identification numbers to batch data report numbers.						
(21) List applicable EPA Hazardous Waste Numbers:[1] D008 and F005						
(22) Applicable TRUCON Content Numbers: LA 225						
(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-011, Revision 1, April 29, 2011, Attachment 1, 2, 3 and 4						
(23B) Facility mission description: CCP-AK-LANL-011, Revision 1, April 29, 2011, Section 4.1						
(23C) Description of operations that generate waste: CCP-AK-LANL-011, Revision 1, April 29, 2011, Section 4.3						
(23D) Waste identification/categorization schemes: CCP-AK-LANL-011, Revision 1, April 29, 2011, Section 5.4.3						
(23E) Types and quantities of waste generated: CCP-AK-LANL-011, Revision 1, April 29, 2011, Section 5.2 and 5.4						
(23F) Correlation of waste streams generated from the same building and process, as applicable: CCP-AK-LANL-011, Revision 1, April 29, 2011, Section 4.2.3						
(24) Waste certification procedures: CCP-TP-030, Rev. 29, April 26, 2011						
(25)Required Waste Stream Information						

(25A) Area(s) and building(s) from which the waste stream was generated: CCP-AK-LANL-011, Revision 1, April 29, 2011, Section 5.1			
(25B) Waste stream volume and time period of generation: CCP-AK-LANL-011, Revision 1, April 29, 2011, Section 5.2			
(25C) Waste generating process description for each building: CCP-AK-LANL-011, Revision 1, April 29, 2011, Section 4.3			
(25D) Waste Process flow diagrams: CCP-AK-LANL-011, Revision 1, April 29, 2011, Attachment 5 and 6			
(25E) Material inputs or other information identifying chemical/radionuclide content and physical waste form: CCP-AK-LANL-011, Revision 1, April 29, 2011, Section 5.4			
(25F) Waste Material Parameter Weight Estimates per unit of waste: See table in the Summation of Aspects of AK Summary report: LA-MHD02-PTX.001 entitled "Waste Stream LA-MHD02-PTX.001 Waste Material Parameters"			
(26) Which Defense Activity generated the waste: (check one)			
	Weapons activities including defense inertial confinement fusion		Naval Reactors development
	Verification and control technology		Defense research and development
	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 P014, P017, P019, P020, P021 and P022 in Summation of Aspects of AK Summary Report: LA-MHD02-PTX.001, Source Documents			
(27C) Safety Analysis Reports: See D016 in Summation of Aspects of AK Summary Report: LA-MHD02-PTX.001, Source Documents			
(27D) Waste packaging logs: See D002 and D003 in Summation of Aspects of AK Summary Report: LA-MHD02-PTX.001, Source Documents			
(28E) Test plans/research project reports: See D004 in Summation of Aspects of AK Summary Report: LA-MHD02-PTX.001, Source Documents			
(27F) Site databases: See C034 and M015 in Summation of Aspects of AK Summary Report: LA-MHD02-PTX.001, Source Documents			
(27G) Information from site personnel: See M011, M013 and M014 in Summation of Aspects of AK Summary Report: LA-MHD02-PTX.001, Source Documents			
(27H) Standard industry documents: NA			
(27I) Previous analytical data: See D001, D002, D003 and D004 in Summation of Aspects of AK Summary Report: LA-MHD02-PTX.001, Source Documents			
(27J) Material safety data sheets: See D001, D002, D003 and M002 in Summation of Aspects of AK Summary Report: LA-MHD02-PTX.001, Source Documents			
(27K) Sampling and analysis data from comparable/surrogate Waste: See D016 in Summation of Aspects of AK Summary Report: LA-MHD02-PTX.001, Source Documents			
(27L) Laboratory notebooks: NA			
Confirmation Information			
For the following, when applicable, enter procedure title(s), number(s) and date(s)			
(28)	Radiography: CCP-TP-053, Revision 11, July 20, 2011		
(29)	Visual Examination: NA		

Attachment 2 – CCP Waste Stream Profile Form

(30) 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:** 10/03/2011

Reviewed by STR (if necessary): **YES** [X] **N/A** [ ] **Date:** 10/06/2011

Waste Stream Profile Form Certification:

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

(31) Veronica Waldram	(32) Veronica Waldram	(33) 10/24/11
Signature of Site Project Manager	Printed Name	Date

NOTE: (1) If, radiography, visual examination were used to confirm EPA Hazardous Waste Numbers, attach signed Characterization Information Summary documenting this determination.
(2) There are only 3 55-gallon drums in this waste stream; all 3 drums were headspace gas sampled.

CHARACTERIZATION INFORMATION SUMMARY

WSPF # LA-MHD02-PTX.001

Lot 1

TABLE OF CONTENTS

CCP Characterization Information Summary Cover Page

Waste Stream # LA-MHD02-PTX.001 Lot #: 1

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

SPM Review: Richard Kantrowitz Date: 10/18/2011

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

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

List of procedures used:

Radiography (RTR/NDE):

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

Non Destructive Assay (NDA):

CCP-TP-063	Rev. 11	10/22/08	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. 13	04/11/11	CCP Operating 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
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. 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. 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

Headspace Gas Sampling and Analysis (HSG):

CCP-TP-173	Rev. 1	09/30/09	CCP Analysis of Gas Samples for VOCs by GC/FID
CCP-TP-175	Rev. 1	03/29/10	CCP Analysis of Gas Samples for VOCs by GC/MS
CCP-TP-175	Rev. 2	12/29/10	CCP Analysis of Gas Samples for VOCs by GC/MS
CCP-TP-175	Rev. 3	08/02/11	CCP Analysis of Gas Samples for VOCs by GC/MS

Project Level Data Validation / DQO Reconciliation:

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

WAP Certification:

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

CIs002

CCP Correlation of Container Identification Numbers to Batch Data Report Numbers

Waste Stream: LA-MHD02-PTX.001 1

Container ID Number	Historical Container	NDA BDR	RTR BDR	VE BDR	Solids Sampling BDR	Solids Analytical BDR	Load Management/ Overpack Yes	Headspace Gas BDR		
								Sample	Analysis	
56503	LA00000056503	2LANDA0741	LA-RTR2-11-0006	NA	NA	NA		LAHSG1102	ECL11003G	ECL11003M
56505	LA00000056505	1LANDA1347	LA-RTR2-11-0004	NA	NA	NA		LAHSG1102	ECL11003G	ECL11003M
85030	LA00000085030	1LANDA1220	LA-RTR2-10-0045	NA	NA	NA		LAHSG1102	ECL11003G	ECL11003M

Signature of Site Project Manager

Richard Kantrowitz
Printed Name

10/18/2011
Date

CI5003

CCP Headspace Gas UCL_{90} Evaluation Form

WSPF #: LA-MHD02-PTX.001 **Waste Stream Headspace Gas Lot Number** 1 through 1

ANALYTE	Transform Data Used (No, Data-Log, SQRT, other)	# Samples above MDL (1)	# Samples	Maximum (ppmv)	Mean (ppmv)	SD (ppmv)	UCL_{90} (ppmv)	PRQL (ppmv)	Transformed PRQL (N/A or Value)	UCL_{90} > PRQL Yes	EPA Hazardous Waste Number
Benzene	Log	0	3	-3.40	-3.52	0.11	-3.40	10	2.30		
Bromoform	Log	0	3	-4.61	-4.73	0.12	-4.61	10	2.30		
Carbon tetrachloride	Log	1	3	-3.69	-4.10	0.38	-3.69	10	2.30		
Chlorobenzene	Log	0	3	-3.75	-3.88	0.12	-3.76	10	2.30		
Chloroform	Log	1	3	-2.45	-3.20	0.65	-2.49	10	2.30		
Cyclohexane[a]	Log	0	3	-3.26	-3.39	0.11	-3.26	10	2.30		
1,1-Dichloroethane	Log	0	3	-3.91	-4.05	0.12	-3.92	10	2.30		
1,2-Dichloroethane	Log	0	3	-3.30	-3.43	0.12	-3.30	10	2.30		
1,1-Dichloroethylene	Log	0	3	-3.94	-4.06	0.11	-3.94	10	2.30		
cis-1,2-Dichloroethylene[e]	Log	0	3	-3.23	-3.37	0.12	-3.24	10	2.30		
trans-1,2-Dichloroethylene	Log	0	3	-3.38	-3.50	0.11	-3.39	10	2.30		
Ethyl benzene	No	0	3	0.02	0.02	0.00	0.02	10	N/A		
Ethyl ether	No	0	3	0.02	0.02	0.00	0.02	10	N/A		
Methylene chloride	Log	0	3	-3.26	-3.39	0.11	-3.26	10	2.30		
1,1,2,2-Tetrachloroethane	No	0	3	0.01	0.01	0.00	0.01	10	N/A		
Tetrachloroethylene	No	0	3	0.02	0.02	0.00	0.02	10	N/A		
Toluene	Log	3	3	2.40	0.24	1.99	2.40	10	2.30	Yes	F005
1,1,1-Trichloroethane	Log	1	3	-3.10	-3.84	0.65	-3.13	10	2.30		
Trichloroethylene	Log	0	3	-3.94	-4.06	0.11	-3.94	10	2.30		
Trichlorofluoromethane[e]	Log	0	3	-3.37	-3.50	0.12	-3.37	10	2.30		
1,1,2-Trichloro-1,2,2-trifluoroethane	Log	0	3	-4.05	-4.18	0.12	-4.05	10	2.30		
1,2,4-Trimethylbenzene[a]	Log	0	3	-3.67	-3.79	0.11	-3.68	10	2.30		
1,3,5-Trimethylbenzene[a]	No	0	3	0.02	0.02	0.00	0.02	10	N/A		
m,p-Xylene[b]	Log	1	3	-2.70	-3.26	0.49	-2.72	10	2.30		
o-Xylene	Log	0	3	-3.34	-3.47	0.11	-3.35	100	4.61		
Acetone	Log	2	3	0.69	-1.06	1.91	1.02	100	4.61		
Butanol	Log	0	3	-2.90	-3.02	0.10	-2.91	100	4.61		
Methanol	No	0	3	15.50	15.17	0.29	15.48	100	N/A		
Methyl ethyl ketone	Log	1	3	-1.71	-3.00	1.12	-1.78	100	4.61		

CIS004

CCP Headspace Gas UCL_{90} Evaluation Form

WSPF #: LA-MHD02-PTX.001 **Waste Stream Headspace Gas Lot Number** 1 through 1

ANALYTE	Transform Data Used (No, Data-Log, SQRT, other)	# Samples above MDL (1)	# Samples	Maximum (ppmv)	Mean (ppmv)	SD (ppmv)	UCL_{90} (ppmv)	PRQL (ppmv)	Transformed PRQL (N/A or Value)	UCL_{90} > PRQL Yes	EPA Hazardous Waste Number
Methyl isobutyl ketone	Log	1	3	-3.12	-3.60	0.43	-3.14	10	2.30		
Chloromethane[e]	Log	1	3	-1.97	-2.95	0.86	-2.02	10	2.30		
Carbon Disulfide[e]	No	3	3	0.25	0.15	0.09	0.24	10	N/A		
1,2-Dichloropropane[e]	Log	0	3	-3.73	-3.86	0.11	-3.74	10	2.30		
Formaldehyde[c]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hydrazine[d]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

[a] These compounds are from CCP-PO-003, CCP Transuranic Authorized Methods for Payload Control (CCP CH-TRAMPAC) and are flammable VOCs that do not appear in CCP-PO-001. These are not part of the target analyte list, but samples may be analyzed for these compounds.

[b] These xylene isomers cannot be resolved by the analytical methods employed in the program. m-Xylene and p-Xylene will be reported as "Total m-p-Xylene."

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

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

[e] These compounds are reported by the Idaho Laboratory and are included for completeness.

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.)

CTS005

Signature of Site Project Manager

Richard Kantrowitz
Printed Name

10/18/2011
Date

CCP[illegible]eadspace Gas Summary Da[illegible]

Waste Stream Number LA-MHD02-PTX.001 Lot Number (s) 1

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

Data Supports EPA Hazardous Waste Numbers Assigned by AK? ☐ Yes ☑ No

If no, describe the basis for assigning the EPA Hazardous Waste Codes:

The F005 HWN was added to the AK Summary, based soley on the Headspace Gas sampling and analyses of these three containers.

SPM Signature [signature] Date 10/18/2011

CCP RTR/VE Summary of Prohibited Items and AK Confirmation

Waste Stream Number: LA-MHD02-PTX.001 Lot(s)#: 1

Container Number	RTR Prohibited Items [a,b]	Visual Examination Prohibited Items [a,b]
See correlation of container ID numbers for list of remaining drum numbers in this Lot.	RTR Data confirm that none of the containers in this lot contain any prohibited items.	VE was not performed on any of the containers in this Lot.

a. See Batch Data Reports

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

Justification for the selection of RTR and/or VE: RTR was selected as the characterization method because the waste containers were previously packaged or will be repackaged by host site personnel and RTR is an acceptable characterization method to meet all the Data Quality Objectives for NDE of waste stream LA-MHD02-PTX.001.

Site Project Manager Signature | Richard Kantrowitz (Printed Name) | 10/18/2011 (Date)

CCP Reconciliation with Data Quality Objectives

WSF# LA-MHD02-PTX.001 Lot # 1

Sampling Completeness

RTR:

Number of Valid Samples: 3 Number of Total Samples Analyzed: 3

Percent Complete: 100 (QAO is 100%)

NDA

Number of Valid Samples: 3 Number of Total Samples Analyzed: 3

Percent Complete: 100 (QAO is 100%)

HSG

Number of Valid Samples: 3 Number of Total Samples Collected: 3

Percent Complete: 100 (QAO is ≥90%)

Number of Valid Samples: 3 Number of Total Samples Analyzed: 3

Percent Complete: 100 (QAO is ≥90%)

Total VOC

Number of Valid Samples: NA Number of Total Samples Collected: NA

Percent Complete: NA (QAO is ≥90%)

Number of Valid Samples: NA Number of Total Samples Analyzed: NA

Percent Complete: NA (QAO is ≥90%)

Total SVOC

Number of Valid Samples: NA Number of Total Samples Collected: NA

Percent Complete: NA (QAO is ≥90%)

Number of Valid Samples: NA Number of Total Samples Analyzed: NA

Percent Complete: NA (QAO is ≥90%)

Total Metals

Number of Valid Samples: NA Number of Total Samples Collected: NA

Percent Complete: NA (QAO is ≥90%)

Number of Valid Samples: NA Number of Total Samples Analyzed: NA

Percent Complete: NA (QAO is ≥90%)

CCP Reconciliation with Data Quality Objectives

WSF# LA-MHD02-PTX.001 Lot # 1

	Y/N/NA	Reconciliation Parameter
1	Y	Waste Matrix Code.
2	Y	Waste Material Parameter Weights.
3	Y	The waste matrix code identified is consistent with the type of sampling and analysis used to characterize the waste.
4	Y	The TRU activity reported in the BDRs for each container demonstrates with a 95% probability that the container of waste contains TRU radioactive waste.
5	N	AK Sufficiency. Is there an approved AK sufficiency Determination for this waste stream?
6	Y	Mean concentrations, UCL_{90} values for the mean concentration, standard deviations, and the number of samples collected for each VOC in the HSG of each container were calculated and compared with the program required quantitation limits, as reported in CCP-TP-003 Attachment 3, and additional U.S. Environmental Protection Agency (EPA) Hazardous Waste Numbers were assigned as required. Samples were randomly collected (when appropriate).
7a	NA	Mean concentrations, UCL_{90} values for the mean concentration, standard deviations, and the number of samples collected for solids VOCs were calculated and compared with the program required quantitation limits and regulatory thresholds, as reported in the Characterization Information Summary, CCP-TP-003 Attachment 4, and additional EPA HWNs were assigned as required. Samples were randomly collected.
7b	NA	Mean concentrations, (UCL_{90}) values for the mean concentration, standard deviations, and the number of samples collected for solids SVOCs were calculated and compared with the program required quantitation limits and regulatory thresholds, as reported in the Characterization Information Summary, CCP-TP-003 Attachment 5, and additional EPA HWNs were assigned as required. Samples were randomly collected.
7c	NA	Mean concentrations, (UCL_{90}) values for the mean concentration, standard deviations, and the number of samples collected for total metals were calculated and compared with the program required quantitation limits and regulatory thresholds, as reported in the Characterization Information Summary, CCP-TP-003 Attachment 6, and additional EPA HWNs were assigned as required. Samples were randomly collected.

CCP Reconciliation with Data Quality Objectives

WSF# LA-MHD02-PTX.001 Lot # 1

8	Y	The data demonstrates whether the waste stream exhibits a toxicity characteristic under Title 40 CFR 261, Identification and Listing of Hazardous Waste, Subpart C, Characteristics of Hazardous Waste.
9	Y	Does the waste stream contain listed waste found in 20.4.1.200 NMAC incorporating 40 CFR Part 261, Subpart D, Lists of Hazardous Wastes.
10	Y	Waste stream can be classified as hazardous or nonhazardous at the 90-percent confidence level.
11	Y	Appropriate packaging configuration and Drum Age Criteria (DAC) is applied and documented in the headspace gas sampling documentation, and the drum age met prior to sampling.
12	Y	TICs were appropriately identified and reported in accordance with the requirements of Section C3-1 of the QAPjP.
13	Y	The PRQLs for headspace gas VOCs were met for all analyses as evidenced by the analytical batch data reports.
14		The overall completeness, comparability, and representativeness QAOs were met for each of the analytical and testing procedures as specified in the WAP Sections C3-2 through C3-9 prior to submittal of a waste stream profile form for a waste steam or waste stream lot.

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

Comments: NONE

Signature of Site Project Manager | Richard Kantrowitz (Printed Name) | 10/18/2011 (Date)

SUMMATION OF ASPECTS OF AK SUMMARY REPORT: LA-MHD02-PTX.001

Overview:

Waste stream LA-MHD02-PTX.001 is Contact Handled (CH) transuranic (TRU) waste generated at the Pantex Plant and stored at the Los Alamos National Laboratory (LANL). Since 1951, the Pantex Plant has been used for nuclear weapons assembly and disassembly operations by the U.S. Department of Energy (DOE). The Pantex Plant continues to support national security by maintaining the safety, security, and reliability of the nation's nuclear weapons stockpile. This waste stream consists of mixed heterogeneous debris waste resulting from the clean-up of a single off-normal event when a sealed pit cracked during a dismantlement operation. The waste was packaged and subsequently shipped to LANL for storage and characterization. Pantex Plant waste and secondary debris waste may also be generated during LANL waste repackaging and prohibited item disposition. LANL's inventory of TRU waste destined for disposal at WIPP is stored at the Material Disposal Area G at TA-54.

This waste stream consists of TRU mixed waste generated in support of DOE defense nuclear materials production, specifically maintenance and dismantlement of a weapon system. Therefore, waste stream LA-MHD02-PTX.001 is defense related waste.

This summation of the Acceptable Knowledge (AK) Summary Report includes information to support Waste Stream Profile Form (WSPF) number LA-MHD02-PTX.001 for heterogeneous debris waste from the Pantex Plant. The primary source of information for this Summation is CCP-AK-LANL-011, *Central Characterization Project Acceptable Knowledge Summary Report For Los Alamos National Laboratory Pantex Plant Waste, Waste Stream: LA-MHD02-PTX.001*, Rev. 1, April 29, 2011.

Waste Stream Identification Summary:

Waste Stream Name:	Heterogeneous Debris from the Pantex Plant
Waste Stream Number:	LA-MHD02-PTX.001
Waste Stream Volume – Current:	3 55-gallon drums
Waste Stream Volume – Projected:	None
Dates of Waste Generation:	November 1992 through June 1993
Summary Category Group:	S5000 – Debris Waste
Waste Matrix Code Group:	Heterogeneous Debris Waste
Waste Matrix Code:	S5400

TRUPACT-II Content Code (TRUCON): LA225

Annual Transuranic Waste Inventory
Report Identification Number: LA-MHD02-PTX.001

Waste Stream Description and Physical Form:

Waste stream LA-MHD02-PTX.001 consists of mixed heterogeneous debris waste resulting from the clean-up of a single off-normal event when a sealed pit cracked during a dismantlement operation. The pit was sent to Lawrence Livermore National Laboratory (LLNL) and is not part of this waste stream. The waste consists primarily of heterogeneous organic and inorganic debris. Examples of organic debris include combustibles (e.g., cardboard, cloth rags, Kimwipes, paper, Q-tips, and wood), plastics and rubber (e.g., bottles, hose, neoprene leaded glovebox gloves, spatula, tape, tooth brush, tygon tubing, and vinyl tape), personal protective equipment (e.g., gloves, anti-contamination suits), and high efficiency particulate air (HEPA) filters. Examples of inorganic debris include metal and tools (e.g., aluminum mesh, brass fittings and valves, cable, copper tubing, ductwork, iron ring stands, piping, razor knife, sockets, stainless steel cans, steel caps, and wrench) and broken glass. A plutonium contaminated thorium (Th)-230 check source from a radiation detection instrument is included in the waste stream. The waste may also include homogeneous solids such as floor sweepings, Met-L-X (sodium chloride based metal fire suppressant), and silica based absorbent materials (e.g., Aquaset or Petroset) (References C026, D001, D002, D003, D014, M001, and M006).

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 resulted from the clean-up of a single off-normal event when a sealed pit cracked during a dismantlement operation.

Point of Generation - Area and Building of Generation

Location

Waste stream LA-MHD02-PTX.001 was generated at the Pantex Plant in Amarillo, Texas. The waste is currently stored at the LANL Material Disposal Area G at TA-54.

Area and/or Building of Generation

Waste stream LA-MHD02-PTX.001 was generated during the clean-up of a single off-normal event in Building 12-98, Cell 1.

Generating Process

Description of Waste Generating Processes

The standard process for dismantling a weapon system was to subject it to a thermal shock process to remove the high explosives (HEs) from around the pit. The HE and pit

were soaked in liquid nitrogen then placed in a tray where warm water was slowly poured over the HE. The sudden change in temperature would safely crack the HE away from the sealed pit. Normally radiological contamination is not generated because the pit is sealed. However, on November 12, 1992 the process was being performed on a pit for which later analysis indicated a flaw in one of the welds. After most of the HE had been removed, the warm water struck the flawed weld and the pit cracked. The tray holding the pit was contaminated with weapons grade plutonium. This waste stream was generated by the clean-up of the tray, a contaminated glovebox, and equipment that was moved into Cell 1 to safely process the cracked pit for shipment to LLNL. In addition, waste repackaging and prohibited item disposition may be performed by LANL. The following are descriptions of the waste generating operations (References D005, D018, and P006).

Stabilization of the Pit

After discovery of the crack, the pit was left in Cell 1 for several months. Due to concerns of heat buildup which could result in the expansion of the crack, the pit was placed on an aluminum V-block to dissipate the heat. When it was determined that the V-block was not effectively dissipating the heat, the pit was moved to an open HE can filled with aluminum beads. The temperature was monitored until it was packaged for shipment to LLNL. The pit was radiographed in Cell 1 using a Cobalt 60 source. The radiograph indicated that the crack was in the outer shell only (Reference D005).

A glovebox was moved into Cell 1 to process the pit for shipment. The glovebox was filled with argon then slowly oxygen was introduced into the glovebox. This was to stabilize the pit for shipment to LLNL. The pit was then packaged and sent to LLNL for further examination in January of 1993 (References D005 and M011).

Clean-up of Equipment

After the pit was removed from the glovebox, the decontamination of the glovebox and Cell 1 was started. The clean-up process included wiping down the contaminated equipment in the glovebox with cloth rags to remove gross contamination and then using Kimwipes with isoclean, a non-hazardous cleaning solution. Basic or acidic solutions from the base hydrolysis operation (hydrochloric acid or sodium hydroxide) were neutralized to a pH of 6 to 8. Remaining aqueous solution was solidified with Aquaset. Some equipment such as small ring stands, clamps, valves, hoses, and tubing were discarded, if it was uneconomical to clean them. This equipment is part of the waste stream (References D017, M002, and P005).

Separation of any Remaining High Explosives (HEs)

Most of the HE was safely removed from the pit before the pit cracked. A very small amount of HE was left on the equipment that needed to be cleaned. The remaining HE was segregated into one two-gallon stainless steel vessel and the waste that was generated was examined for residual HE. Residual HE was removed by brushing or cleaning with a cotton swipe soaked in dimethylsulfoxide (DMSO). DMSO is a polar, aprotic solvent meaning it does not exchange protons with a substance dissolved in it.

The DMSO was used in the base hydrolysis operation. If the HE could not be removed from the piece, the entire piece was placed in the HE container and subjected to the base hydrolysis process (References C017, P006, M011, and M013).

Base Hydrolysis Process

HE was consolidated for degradation in a base hydrolysis process. Base hydrolysis is a process whereby explosives are reacted with concentrated base solutions (sodium hydroxide) to produce non-explosive, non-energetic, water soluble reaction products. DMSO is used to dissolve the HE to speed the reaction time and ensure complete hydrolysis. Dissolving the HE in DMSO ensures better contact between the HE with the aqueous base, resulting in a rapid hydrolysis reaction which proceeds to completion (References C017 and M011).

After the HE was dissolved by the DMSO, sodium hydroxide was added to the solution. The solution was heated using a steam-heated coil to between 70 and 90 degrees Celsius. The solution was agitated with an air-driven mixer for several hours until the explosives had been hydrolyzed. Samples of the resulting solution were sent to the Pantex laboratory to confirm that the HEs were destroyed. Hydrochloric acid was then added to the solution to neutralize the mixture to a pH of between 6 and 8 (References C017 and M011).

Approximately two liters of solution were produced in the base hydrolysis process. The final step in the process was to solidify the mixture using a non-hazardous absorbent material (e.g., Aquaset or Petroset). The solution was solidified in an open-topped stainless steel two-gallon vessel and incorporated into this waste stream (References C017, D004, and M013).

Waste Repackaging and Prohibited Item Disposition

Waste repackaging and prohibited item disposition can be performed in three facilities. The first facility was originally established in 1979 at TA-50 and currently includes various operations to support TRU waste characterization. The Waste Characterization, Reduction, and Repackaging (WCRR) Facility performs remediation and repackaging of waste with prohibited items or container integrity issues only. The second repackaging facility, TA-54 Building 412, now performs sorting, segregating, size reduction, and repackaging operations on waste containers (e.g., 55- and 85-gallon drums) that contain WIPP nonconforming items. The third facility was established in 2006 at the TA-54 Dome 231 Permacon. This facility performs remediation and repackaging of waste with prohibited items or container integrity issues (References C038, D020, D023, P020, P021, P022, and P023).

These repackaging facilities are used to perform visual examination (VE), repackaging, and prohibited item dispositioning of TRU waste. VE is performed to provide information that is used to 1) confirm the waste stream delineation by AK, 2) ensure the absence of prohibited items, and 3) characterize retrievably stored waste with inadequate AK, in lieu of real-time radiography (RTR). Waste containers with prohibited items are segregated then dispositioned appropriately and/or repackaged into new

drums, during which time liquids are absorbed, sealed containers greater than four liters are opened, and other items (e.g., unpunctured aerosol cans) are removed and segregated if necessary prior to certification and shipment. Current repackaging procedures ensure that waste items placed into a new container originated from a single parent container. Therefore, if repackaging is necessary the original characterization is retained and there is no cross-contamination with waste from other LANL facilities. Some secondary waste generated during remediation/repackaging operations may be added to the waste containers, including but not limited to: absorbent (e.g., Waste Lock 770 [sodium polyacrylate absorbent material]), Fantastik bottles used during decontamination, miscellaneous hand tools, paper/plastic tags and labels, plastic/metal wire ties, PPE, rags and wipes (Kimwipes), and rigid liner lids cut into pieces (References C035, C036, C038, D023, P020, P021, P022, and P023).

Toxicity Characteristic and Listed Constituents in Waste Stream LA-MHD02-PTX.001

Chemical/Product	Use/Source	Document Source(s)	EPA HWNs
Lead	Component of glovebox gloves and brass.	M001	D008
Toluene	Detected in headspace gas sampling.	DR002	F005

RCRA Determinations - Hazardous Waste Determinations

Historical Waste Management

Waste Stream LA-MHD02-PTX.001 has historically been managed in accordance with the generator site requirements and in compliance with the requirements of the Texas Commission of Environmental Quality and the New Mexico Environmental Department. Based on historical waste management, LANL managed the waste as nonhazardous. However, the LANL TRU program identified that further AK investigation was required. A review of available AK documentation and characterization activities have determined that this waste stream is hazardous for lead (D008) due to the presence of glovebox gloves and brass, and toluene (F005) which was detected in headspace gas sampling (References D020, DR001, and DR002).

Ignitability

Waste Stream LA-MHD02-PTX.001 does not meet the definition of ignitability as defined in Title 40 Code of Federal Regulations (CFR) 261.21. The materials are not liquid and liquids were not added to containers during packaging. In addition, ignitable liquids were not used in the clean-up of the off-normal event or base hydrolysis process. Acetone and isopropyl alcohol were present as by-products or ingredients in waste materials. However, they were either present in ppm concentrations or absorbed prior to packaging. The waste is not a compressed gas or an oxidizer, and it is not capable of causing fire through friction, absorption of moisture, or spontaneous chemical

change. In addition, RTR is performed to ensure the absence of liquids. Waste Stream LA-MHD02-PTX.001 is therefore not ignitable and is not assigned U.S. Environmental Protection Agency (EPA) hazardous waste number (HWN) D001 (References C001, D004, M001, M011, M014, and P020).

Corrosivity

Waste Stream LA-MHD02-PTX.001 does not meet the definition of corrosivity as defined in 40 CFR 261.22. The materials are not liquid and liquids were not added to containers during packaging. Sodium hydroxide and hydrochloric acid that were used in the base hydrolysis process were neutralized to a pH between 6 and 8. Base hydrolysis solutions were solidified using Aquaset prior to packaging. Additional Aquaset was placed in each drum to absorb liquids. In addition, RTR is performed to ensure the absence of liquids. Waste Stream LA-MHD02-PTX.001 is therefore not corrosive and is not assigned EPA HWN D002 (References C001, M011, and P020).

Reactivity

Waste Stream LA-MHD02-PTX.001 does not meet the definition of reactivity as defined in 40 CFR 261.23. The waste is stable and will not undergo violent chemical change. The waste will not react violently with water, form potentially explosive mixtures with water, or generate toxic gases, vapors, or fumes when mixed with water. The waste does not contain reactive cyanide or sulfide compounds. During the clean-up process, technicians were trained to identify HE that may have been remaining. If HE was identified, it was removed from the debris waste and included in the base hydrolysis process. The base hydrolysis process was used to dissolve and render HE non-reactive (i.e., not capable of detonation or explosive reaction). Waste Stream LA-MHD02-PTX.001 is therefore not reactive and is not assigned EPA HWN D003 (References C001, C017, D004, and M011).

Toxicity Characteristic

Waste Stream LA-MHD02-PTX.001 meets the definition of toxicity characteristic waste as defined in 40 CFR 261.24. Where a constituent has been identified and there is no or limited quantitative data available to demonstrate that the concentration of a constituent is below regulatory threshold levels, the applicable EPA HWN is applied to the waste stream. The AK sources did not identify the presence of organic toxicity characteristic compounds. The AK sources did identified the toxicity characteristic metal compound lead due to the presence of glovebox gloves (which may be lead-lined) and brass fittings which may contain up to five percent lead. Therefore, HWN D008 is assigned to the waste stream (References D001, D002, D003, D004, DR001, and M001).

F-Listed Waste

Waste stream LA-MHD02-PTX.001 was mixed with or derived from F-listed hazardous wastes from non-specific sources as listed in 40 CFR 261.31. Acetone was identified (F003 constituent); however, it was not used for its solvent properties and the waste

stream does not exhibit the characteristic of ignitability. Therefore, the waste stream was not assigned F003. Characterization headspace gas results for the three drums in this waste stream detected toluene (an F005-listed waste constituent) in concentrations above the program required quantitation limit (PRQL) in one drum at 11 parts per million. The calculated UCL_{90} for the waste stream also exceeded the PRQL. Therefore, EPA HWN F005 is conservatively assigned to the waste stream (References D004, D020, DR001, DR002, M014, and M015).

K-, P-, and U-Listed Chemicals

The material in this waste stream is not a hazardous waste from any of the sources specified in 40 CFR 261.32. Therefore, this waste stream is not a K-listed waste.

Waste Stream LA-MHD02-PTX.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 as defined in 40 CFR 261.33. No listed chemicals were identified in the container-specific documentation and no record of a significant spill of listed chemicals was identified (e.g., incident report). Hydrofluoric acid (U134-listed waste) was not used in the clean-up of the single off-normal event. There is also no indication that discarded commercial chemical product beryllium powder (P015-listed waste) was included in this waste stream. Therefore, this waste stream is not a P- or U-listed waste (References D004, D020, DR001, M014, and M015).

Headspace Gas/Volatile Organic Compound Information

Headspace gas analysis was completed on three containers in Lot 1 of this waste stream (i.e., the entire waste stream). The UCL_{90} value for toluene exceeded the respective target analyte PRQL. Therefore, HWN F005 was assigned as a consequence of headspace gas sampling and analysis. No tentatively identified compounds were identified. The specifics of this information are included in the attached Characterization Information Summary report.

Other Waste Streams Generated From the Same Buildings and Processes

No other TRU waste streams were generated at the Pantex Plant.

Conclusion

The EPA HWNs that apply to this waste stream are D008 and F005.

Polychlorinated Biphenyls (PCBs)

No sources of PCBs have been identified in this waste stream. PCB waste not authorized under an EPA PCB waste disposal authorization is not in this TRU waste stream (Reference C020).

Prohibited Items

No prohibited items are expected in the waste stream. Certified RTR is performed by CCP to ensure liquids do not exceed the amount allowed by the WIPP-WAP and to ensure the absence of prohibited items. Waste containers with prohibited items are segregated then dispositioned appropriately and/or repackaged into new drums, during which time liquids are absorbed, sealed containers greater than four liters are opened, and other items removed and segregated if necessary prior to certification and shipment (References C035, C036, P020, P021, P022, and P023).

Justification for the Selection of Radiography or Visual Examination

RTR was selected as the characterization method because the waste containers were previously packaged or will be repackaged by host site personnel and RTR is an acceptable characterization method to meet all the Data Quality Objectives for Nondestructive Examination of waste stream LA-MHD02-PTX.001.

Method for Determining Waste Material Parameter Weights per Unit of Waste

The waste material parameters associated with waste stream LA-MHD02-PTX.001 were estimated based on specific waste items identified in packaging procedures, standard operating procedures, TRU waste storage records, and waste management travelers. As each item was placed into a drum, the waste item was documented on the Waste Management Traveler for that drum. The data obtained were grouped into one of ten categories for each of the three drums. The weights were summed for each of the ten categories and the percentages were determined. The highest and lowest weight percentage for each category was determined in order to develop the range (References C026, D001, D002, D003, M001, and M006).

Waste Stream LA-MHD02-PTX.001 Waste Material Parameters

Waste Material Parameter	Average Weight Percent	Weight Percent Range
Iron-based Metals/Alloys	30.4%	16.4 - 43.8%
Aluminum-based Metals/Alloys	4.3%	0.0 - 9.5%
Other Metals	8.1%	0.0 - 17.7%
Other Inorganic Materials	7.7%	5.4 - 10.4%
Cellulosics	27.2%	5.9 - 75.0%
Rubber	0.0%	0.0 - 0.0%
Plastics	22.3%	17.7 - 35.0%
Organic Matrix	0.0%	0.0 - 0.0%
Inorganic Matrix	0.0%	0.0 - 0.0%
Soils/Gravel	0.0%	0.0 - 0.0%

List of AK Sufficiency Determinations

No AK Sufficiency Determinations were requested for this waste stream.

Transportation

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

Beryllium

Beryllium is not present in this waste stream.

Radionuclide Information

Generator supplied radionuclide data was evaluated for each of the containers in Waste Stream LA-MHD02-PTX.001. To determine isotopic ratios for the waste stream, the total gram value for each individual radionuclide reported by the generator was divided by the total mass of all radioactive constituents in the waste stream and converted to a percentage. This result is listed as "Total Radionuclide Weight%." To determine the radionuclide weight percent range for individual containers, the radiological mass in each container in the waste stream was summed. The mass of each individual radionuclide in a container was divided by the total radiological mass for that container and converted to a percentage. The minimum and maximum results are listed as "Radionuclide Weight% Range for Individual Containers." The individual radionuclide gram values were converted to activity, and the same process was applied to determine "Total Radionuclide Curie%" and "Radionuclide Curie% Range for Individual Containers." Based on this evaluation, the two predominant isotopes for the waste stream are Pu-239 and Pu-240, while over 95 percent of the total activity in the waste stream is from Am-241, Pu-239, Pu-240, and Pu-241 (References C025, D014, M015, and M016).

Waste Stream LA-MHD02-PTX.001 Radiological Characterization

Isotope	Total Radionuclide Weight%[1]	Radionuclide Weight% Range for Individual Containers[2]	Total Radionuclide Curie%[3]	Radionuclide Curie% Range for Individual Containers[4]	Suspected Present (Yes/No)
WIPP Required Radionuclides					
Am-241	0.27%	0.26% - 0.42%	4.10%	4.00% - 6.24%	Yes
Pu-238	0.03%	0.03% - 0.03%	2.38%	2.34% - 2.39%	Yes
Pu-239	**93.54%**	93.40% - 93.54%	25.61%	25.03% - 25.64%	Yes
Pu-240	**6.02%**	6.01% - 6.03%	6.03%	5.89% - 6.05%	Yes
Pu-242	Not Reported			--	Yes
U-233	Not Reported			--	No
U-234	Not Reported			--	Yes
U-238	Not Reported			--	No
Cs-137	Not Reported			--	Yes
Sr-90	Not Reported			--	Yes
Additional Radionuclides					
Pu-241	0.14%	0.14% - 0.14%	61.88%	60.51% - 61.94%	Yes
Th-230	Not Reported			--	Yes[5]

Notes:

1. This column indicates the total weight percent of each radionuclide over the entire waste stream.
2. This column is the weight percent range of radionuclides on an individual container basis. Some containers with "0" listed as the lower range will not contain the specified radionuclide.
3. This column indicates the total activity (curie percent) for each radionuclide over the entire waste stream.
4. This column is the curie percent range for each radionuclide on an individual container basis.
5. Th-230 was not reported but a very small check source was placed in one drum representing less than one percent of the total activity of the waste stream.

Payload management will not be utilized for this waste stream.

AK Source Documents

Source Document Tracking No.	Title	Document No.	Author	Date
C001	Letter to Darrik Stafford, RE: Additional Information - Pantex TRU Waste Shipment	NA	Wes Estill	3/20/1997
C003	Letter to Judith Conley, RE: Mason & Hanger RFP # TG-47538 Shipment Services for Three Drums of TRU Waste	NA	David Wise	2/5/1997
C006	E-Mail to David Langley, RE: TRU Waste	NA	Davis Christensen	2/18/1997
C008	E-Mail to T. Zimmerman, RE: TRU Waste Repackaging - 12-84	NA	Wes Estill	NA
C009	E-Mail to David Langley, RE: TRU Waste	NA	Wes Estill	NA
C012	E-Mail to Wes Estill, RE: Standards governing TRU Waste Certification/Shipment	NA	J.S. Roberts	8/27/1996
C013	Letter to Carlos Lopez	NA	David Wise	10/31/1996
C015	Memo, RE: TRU Waste Drum Configuration and Labeling	CST-7G-94-230	Bruce LeBrun	4/15/1994
C016	Fax to Carl Altschwager, RE: Three 55-Gallon Drums of TRU Waste	NA	Wes Estill	1/29/1997
C017	Memo, RE: W48 Procedure Review Meeting	NA	Phillip Goodfellow	3/30/1993
C020	Letter to File, RE: Management of PCBs at Pantex Plant	NA	Scot Roberts	5/10/1995
C021	Letter to Wes Estill	NA	Christopher Reno	12/17/1996
C024	E-Mail to Wes Estill, RE: TRU Waste Assessment	NA	Penny Shamblin	9/18/1995
C025	Fax to Dave Langley, RE: LSA-II/LSA-III vs. Type B Primer	NA	Jim Hylko	8/8/1996
C026	Letter to Wes Estill, RE: More Information Needed to Profile the 3 TRU Drums (56503, 56504, 56505)	NA	Darrik Stafford	2/24/1997
C028	Memo to J. Evett, RE: TRU Waste Records	DW:97:0027	Jerry Johnson	3/27/1997
C029	Memo to Jerry Johnson, RE: Shipments of TRU Waste from Pantex	NA	Michael Brown	10/3/1996
C030	Memo to Mark Frei, RE: Intersite TRU Waste Shipment Notification	NA	Mona Williams	2/20/1997

Source Document Tracking No.	Title	Document No.	Author	Date
C031	Memo to G.W. Johnson, RE: Consolidation of Pantex Waste at LANL	NA	Mona Williams	3/4/1997
C032	Letter to Wes Estill, RE: TRU Waste Characterization Capabilities	NA	Carlos Lopez	1/7/1996
C033	Memo with Attachments to K. Dziewinski re: Material Type Isotopic Compositions	TWCP-698	Various	5/2/1997
C034	AK Isotopic Files for Input to NDA Radioassay Spreadsheets	TWCP-19813	John M. Veilleux	9/22/2003
C035	Remediation/Repackaging Secondary Waste Disposition	NA	Randy Fitzgerald	8/2/2007
C036	Secondary Waste Generated by the Remediation/ Repackaging Processes at Dome 231 WCRRF	NA	Randy Fitzgerald	8/26/2009
C037	Email RE: LANL Pantex Waste	NA	James Luginbyhl	4/6/2010
C038	TA-54 Building 412 vs. DVRS Facility	NA	Davis Christensen	6/14/2010
D001	TRU Waste Storage Record LA56503	LA0000056503	NA	8/31/1993
D002	TRU Waste Storage Record LA56504	LA0000056504	NA	9/3/1993
D003	TRU Waste Storage Record LA56505	LA0000056505	NA	8/31/1993
D004	US Patent - DMSO/Base Hydrolysis Method for the Disposal of High Explosives and Related Energetic Materials	6388168	D.W. Desmare and D.M. Cates	1/5/1998
D005	Occurrence Report	DP-ALO-AO-MHC-PANTEX-1992-0068	NA	4/16/1993
D006	LANL WAC - Section 4 TRU Solid and Mixed Waste	PLAN-WASTEMGMT-002	NA	1/1997
D007	Scope of Work - TRU Waste Shipment	NA	NA	1/31/1997
D008	Justification for Sole Source of Noncompetitive Procurements - Shipment of TRU Waste	47538	Wes Estill	1/30/1997
D009	Pantex Plant Environmental Restoration Project Community Involvement Plan	NA	NA	12/2007
D010	Ecological Risk Assessment Summary Pantex Plant - Amarillo, Texas	NA	NA	NA

Source Document Tracking No.	Title	Document No.	Author	Date
D011	Pantex News - BWXT Pantex Changes Name	NA	Laura Bailey	11/30/2007
D012	Pantex Info - Pantex Plant History	NA	NA	1/2007
D013	Pantex Info - General Overview	NA	NA	7/2007
D014	Radiation Safety Q2 Waste Analysis Report	NA	James Taylor	8/16/1996
D016	Safety Evaluation Screen	NA	Wes Estill	9/11/1996
D017	Pantex Application for Radioactive Defense Waste Shipments to the NTS - Appendix AMHP000013N	MNL-WM0001	NA	8/1995
D018	Pantex Plant Project Plan for the TRU Waste Shipment Project	NA	NA	9/24/1996
D019	2004 Site Environmental Report for Pantex Plant	DOE/AL/66620-2004	NA	9/2005
D020	Acceptable Knowledge Information Summary for LANL Transuranic Waste Streams	AK-00-019	NA	9/22/2003
D021	Institutional Plan FY2002-FY2007	LALP-01-151	NA	12/2001
D022	Attachment A (Waste Analysis Plan) of the LANL Hazardous Waste Permit	TWCP-14341	NA	1/30/1995
D023	Basis for Interim Operations for Technical Area G	ABD-WMF-001. Rev. 1.0	J. Apperson	10/21/2010
DR001	EPA Hazardous Waste Number Discrepancy Resolution	NA	James Luginbyhl	11/10/2010
DR002	EPA Hazardous Waste Number Discrepancy Resolution – Toluene Detected in Headspace Gas	NA	Michael Papp	4/13/2011
M001	Pantex Form 1509.2 E, Waste Management Traveler, W-2 Plutonium Waste Non-Compactable	1509.2 E	NA	Various
M002	Material Safety Data Sheets	NA	NA	NA
M003	TRU Waste Repackaging Summary, Bay 16, Building 12-84	NA	NA	NA
M004	Presentation Slides, RE: Consolidate TRU Waste Storage at LANL	NA	NA	6/25/1996
M005	TRU Waste Shipment	NA	NA	3/10/1997
M006	Scope of Work TRU Waste Shipment	NA	NA	NA

Source Document Tracking No.	Title	Document No.	Author	Date
M007	Presentation, RE: Shipping TRU Wastes in Today's Regulatory Climate - A Success Story from Pantex Plant, A Small Quantity Generator	NA	Wes Estill and Dave Langley	NA
M008	Minutes of TRU Waste Conference Call	NA	D. Langley	2/14/1997
M009	Presentation Slides, RE: Shipping TRU Wastes in Today's Regulatory Climate - A Success Story from Pantex Plant, A Small Quantity Generator	NA	Wes Estill and Dave Langley	NA
M010	Pantex Maps	NA	NA	NA
M011	Interview with James Taylor, Gary Britten, Rick Jones, Jimmie Alvarado, Wayne Hardin, Royce Butler, and Don Gerber	NA	James Luginbyhl	2/20/2008
M012	Pantex Plant, Zone 12 - Weapons Assembly/Disassembly	NA	NA	4/1/2008
M013	Interview with Wayne Hardin	NA	James Luginbyhl	4/4/2008
M014	Interview with Monte Cates	NA	James Luginbyhl	4/4/2008
M015	CONCERT Database	TWCP-24370	NA	2/2/2005
M016	LA-MHD02-PTX.001 Radiological Calculations Spreadsheet	NA	Jim Schoen	4/7/2011
P001	Marking and Labeling for TRU Waste Packages	STD-3475	J.F. Jerry	11/29/1994
P002	Engineering Instruction: RE: Loading of 55-Gallon Containers of TRU Waste into Model 6400 Super Tiger Protective Overpack and Shipment to LANL	EI. NO. 97-123	Jeff Flowers	2/27/1997
P003	Packaging of the Super Tiger Overpack	28T-93-206SYS-50-27	NA	11/20/1993
P004	Packaging of the Super Tiger Protective Overpack	NFS-CP-001	NA	2/1997
P005	High Explosive Removal, Decontamination, and Packaging of the 48 program Residue	NA	Gary Britten	8/25/1993
P006	Response to Spill of Radioactive Material	IOP-D5254	P.A. Shamblin	3/28/1995
P008	Training Requirements for TRU-Waste Management	STD-3476	J.F. Jarry	12/29/1994

Source Document Tracking No.	Title	Document No.	Author	Date
P009	Preshipment Management of TRU Waste	STD-3478	J.F. Jarry	12/27/1994
P010	TRU Waste Shipment	STD-3479	J.F. Jarry	11/17/1994
P011	TRU Waste Certification Program	STD-3477	Scot Roberts	1/9/1995
P012	Radioactive Waste Shipment	7-5660.4	NA	3/23/1995
P013	Radioactive Waste Management	7-5656	NA	10/14/1980
P014	General Waste Management Requirements	LIR 404-00-02.3	NA	11/1/1998
P015	Managing Radioactive Waste	LIR 404-00-05.2	NA	1/5/1999
P016	Hazardous and Mixed Waste	AR 10-3	NA	4/26/1993
P017	Review and Completion of the TWSR	AP-SWO-006	NA	7/2003
P018	Waste Generator Guidance for Completing the TRU Waste Storage Record (TWSR)	LIG 404-00-01.2	NA	11/26/1997
P019	Waste Profile Form Guidance	LIG 404-00-03.1	NA	9/18/1997
P020	Standard Waste Visual Examination and Prohibited Item Disposition	TRU-DOP-1709	NA	9/28/2006
P021	Prohibited Items Dispositioning in Dome 231 Permacon	TRU-DOP-0334, R.0, R.2, R.10	NA	9/11/2006, 9/17/2009, 5/6/2010
P022	Processing Waste in the Waste Characterization Glovebox	EP-WCRR-WO-DOP-0233, R.5	NA	7/16/2007
P023	Sort, Segregate, Size Reduction, and Repackaging Activities	EP-AREAG-WO-DOP-0216, R. 7	Mike Romero	5/20/2010