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

ENTERED

RECEIVED
DEC 2012
NMED Hazardous Waste Bureau

DEC 3 2012

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

Subject: Review of Savannah River Site - Central Characterization Project Waste Stream Profile Form Number SR-MD-SOIL, Revision 1, Contaminated Soil from the Mound Site

Dear Mr. Kieling:

The Department of Energy, Carlsbad Field Office has approved the Waste Stream Profile Form (WSPF) Number SR-MD-SOIL, Revision 1, *Contaminated Soil from the Mound Site* for the Central Characterization Project at the Savannah River Site.

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

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

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

Sincerely,

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

121202

CBFO:NTP:JRS:GL:12-0684:UFC 5900.00

Attachment 2 – CCP Waste Stream Profile Form

(1) Waste Stream Profile Number: SR-MD-SOIL, Revision 1						
(2) Generator site name: Savannah River Site				(3) Generator site EPA ID: SC1890008989		
(4) Technical contact: Beverly Schrock				(5) Technical contact phone number: 575-234-7444		
(6) Date of audit report approval by New Mexico Environment Department (NMED): May 23, 2012						
(7) Title, version number, and date of documents used for WIPP-WAP Certification: CCP-PO-001, CCP Transuranic Waste Characterization Quality Assurance Project Plan, Revision 20, June 16, 2011; CCP-PO-002, CCP Transuranic Waste Certification Plan, Revision 26, July 14, 2011; CCP-PO-004, CCP/SRS Interface Document, Revision 31, October 1, 2012						
(8) Did your facility generate this waste? YES			NO	X		
(9) If no, provide the name and EPA ID of the original generator: Mound Site OH6890008984						
Waste Stream Information						
(10) WIPP ID: SR-MD-SOIL				(11) Summary Category Group: S4000 – Soil/Gravel		
(12) Waste Matrix Code Group: Soils				(13) Waste Stream Name: Contaminated Soil from the Mound Site		
(14) Description from the ATWIR: Soil mixed with absorbent and some commingled debris (i.e., rock concrete, rebar and piping).						
(15) Defense TRU Waste:	YES	X	NO			
(16) Check One:	CH	X	RH			
(17) Number of SWBs: 9 (17a) Number of SLB2s: 3	(18) Number of Drums: 60 55-gallon drums			(19) Number of Canisters: NA		
(20) Batch Data Report numbers supporting this waste stream characterization: See Characterization Information Summary (CIS) Correlation of Container Identification Numbers to Batch Data Report Numbers.						
(21) List applicable EPA Hazardous Waste Numbers:[1] D004, D005, D006, D007, D008, D009, D010, D011, F002, F003, F004, F005, F007 and F009						
(22) Applicable TRUCON Content Numbers: SQ 111 / SQ 211, SR 411						
(23) **Acceptable Knowledge Information**						
(For the following, enter the supporting documentation used [i.e., references and dates])						
Required Program Information						
(23A) Map of site: CCP-AK-SRS-8, Revision 8, October 10, 2012, Figures 1, 2, 4 and 5						
(23B) Facility mission description: CCP-AK-SRS-8, Revision 8, October 10, 2012, Section 4.2						
(23C) Description of operations that generate waste: CCP-AK-SRS-8, Revision 8, October 10, 2012, Section 4.3						
(23D) Waste identification/categorization schemes: CCP-AK-SRS-8, Revision 8, October 10, 2012, Section 4.5						
(23E) Types and quantities of waste generated: CCP-AK-SRS-8, Revision 8, October 10, 2012, Section 4.4.1						
(23F) Correlation of waste streams generated from the same building and process, as applicable: CCP-AK-SRS-8, Revision 8, October 10, 2012, Section 4.4.2						
(24) Waste certification procedures: CCP-TP-030, Revision 30, May 21, 2012						
(25) Required Waste Stream Information						

(25A) Area(s) and building(s) from which the waste stream was generated: CCP-AK-SRS-8, Revision 8, October 10, 2012, Section 6.1			
(25B) Waste stream volume and time period of generation: CCP-AK-SRS-8, Revision 8, October 10, 2012, Section 6.2			
(25C) Waste generating process description for each building: CCP-AK-SRS-8, Revision 8, October 10, 2012, Section 6.3			
(25D) Waste Process flow diagrams: N/A,			
(25E) Material inputs or other information identifying chemical/radionuclide content and physical waste form: CCP-AK-SRS-8, Revision 8, October 10, 2012, Section 6.4			
(25F) Waste Material Parameter Weight Estimates per unit of waste: See table entitled "Waste Stream SR-MD-SOIL Waste Material Parameters" in Summation of Aspects of AK Summary Report: Waste Stream SR-MD-SOIL			
(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
	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 P017, P034, P041, P049, P050, P057, P073, P079, P099, P117, P124, P125, P126, P127, P128, P129 and U019 in the Summation of Aspects of AK Summary Report: Waste Stream SR-MD-SOIL, Source Documents.			
(27C) Safety Analysis Reports: See I050, P027, P036, P067 and P072 in the Summation of Aspects of AK Summary Report: Waste Stream SR-MD-SOIL, Source Documents.			
(27D) Waste packaging logs: See I005, P099 and U002 in the Summation of Aspects of AK Summary Report: Waste Stream SR-MD-SOIL, Source Documents.			
(27E) Test plans/research project reports: See C042, M061 and M062 in the Summation of Aspects of AK Summary Report: Waste Stream SR-MD-SOIL, Source Documents.			
(27F) Site databases: See I017, I020 and P096 in the Summation of Aspects of AK Summary Report: Waste Stream SR-MD-SOIL, Source Documents.			
(27G) Information from site personnel: See C003, C005, C007, C008, C010, C011, C012, C013, C016, C020, C040 and I048 in the Summation of Aspects of AK Summary Report: Waste Stream SR-MD-SOIL, Source Documents.			
(27H) Standard industry documents: NA			
(27I) Previous analytical data: See C041, C042, I005, I019, M061, M063, M064, M076, M077, P017, P073, P098 and P099 in the Summation of Aspects of AK Summary Report: Waste Stream SR-MD-SOIL, Source Documents.			
(27J) Material safety data sheets: See P095 in the Summation of Aspects of AK Summary Report: Waste Stream SR-MD-SOIL, Source Documents.			
(27K) Sampling and analysis data from comparable/surrogate Waste: See C042, M061, M062, P013, P086 and P099 in the Summation of Aspects of AK Summary Report: Waste Stream SR-MD-SOIL, 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 12, August 22, 2012		
	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.

This WSPF was revised to address the addition of the standard large box 2 (SLB2) payload container and associated TRUPACT-III Content Code Number SR 411 to waste stream SR-MD-SOIL. The changes to not affect the waste stream designation or assignment of Environmental Protection Agency (EPA) hazardous waste numbers, as identified in the previously approved WSPF.

Reviewed by AK Expert:	**YES** [X]			**Date:** 10/11/2012
Reviewed by STR (If necessary):	**YES** [X]	**N/A** [ ]		**Date:** 10/15/2012

Waste Stream Profile Form Certification:

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

BSSchrock	Beverly Schrock	10/15/12
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.

CHARACTERIZATION INFORMATION SUMMARY

WSPF # SR-MD-SOIL Rev. 1

Lot 6

TABLE OF CONTENTS

Characterization Information Cover Page..... 002

Correlation of Container Identification Numbers to Batch Data Report Numbers..... 004

Solids Analysis VOC UCL_{90} Evaluation Form..... 005

Solids Analysis SVOC UCL_{90} Evaluation Form..... 007

Solids Analysis Metals UCL_{90} Evaluation Form..... 008

Solid VOCs Summary Data..... 009

Solid SVOCs Summary Data..... 010

RTR/VE Summary of Prohibited Items and AK Confirmation..... 011

Reconciliation with Data Quality Objectives..... 012

CIS-001

CCP Characterization Information Summary Cover Page

Waste Stream #	SR-MD-SOIL	Lot #:	6
AK Expert Review:	N/A	Date:	N/A
SPM Review:	Joshua Houghton	Date:	11/6/2012

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. 12	08/22/12	CCP Standard Real-Time Radiography (RTR) Inspection Procedure
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

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-183	Rev. 0	05/02/07	CCP Microwave Assisted Digestion of Homogeneous Solids and Soil/Gravel
ACCM-8909	Rev. 9	01/20/05	Microwave Assisted Digestion of Homogeneous Solids and Soil/Gravel
CCP-TP-187	Rev. 1	11/18/08	CCP Sample Preparation for Semivolatile Organic Compounds
ACCM-9500	Rev. 11	12/15/05	Sample Preparation for Semivolatile Organic Compounds and Polychlorinated Biphenyls
ACCM-9500	Rev. 10	07/28/04	Sample Preparation for Semivolatile Organic Compounds and Polychlorinated Biphenyls
CCP-TP-185	Rev. 1	11/18/08	CCP Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry
ACMM-9270	Rev. 8	01/20/05	Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry
ACMM-9270	Rev. 7	07/28/04	Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry
CCP-TP-184	Rev. 0	05/02/07	CCP Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry
ACMM-9260	Rev. 14	12/01/05	Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry
ACMM-9260	Rev. 13	12/21/04	Volatile 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
ACMM-9441	Rev. 11	12/22/04	Determination of Nonhalogenated Volatile Organic Compunds by Gas Chromatography
CCP-TP-182	Rev. 1	01/26/09	CCP Determination of Metals by ICP-AES for TRU Waste Characterization
ACMM-2901	Rev. 3	01/27/05	Determination of Trace Elements by ICP-AES for TRU Waste Characterization
ACMM-2901	Rev. 2	04/07/03	Determination of Trace Elements by ICP-AES for TRU Waste Characterization
CCP-TP-181	Rev. 0	05/02/07	CCP Determination of Mercury by CVAA for TRU Waste Characterization
ACMM-2810	Rev. 3	01/27/05	Determination of Mercury by CVAA for TRU Waste Characterization
ACMM-2810	Rev. 2	04/07/03	Determination of Mercury by CVAA for TRU Waste Characterization
CCP-TP-188	Rev. 2	12/29/10	CCP Analytical Data Recording, Review, and Reporting

Project Level Data Validation / DQO Reconciliation:

CCP-TP-001	Rev. 20	09/27/12	CCP Project Level Data Validation and Verification
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-001	Rev. 16	04/26/07	CCP Project Level Data Validation and Verification
CCP-TP-001	Rev. 15	11/22/06	CCP Project Level Data Validation and Verification
CCP-TP-001	Rev. 14	11/16/06	CCP Project Level Data Validation and Verification
CCP-TP-001	Rev. 13	07/21/06	CCP Project Level Data Validation and Verification
CCP-TP-001	Rev. 12	05/25/06	CCP Project Level Data Validation and Verification
CCP-TP-001	Rev. 11	03/23/05	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	06/30/10	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-002	Rev. 19	12/22/06	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-002	Rev. 18	11/16/06	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-002	Rev. 17	10/10/06	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-002	Rev. 16	06/06/06	CCP Reconciliation of DQOs and Reporting Characterization Data
CCP-TP-002	Rev. 15	08/16/05	CCP Reconciliation of DQOs and Reporting Characterization Data

CCP Characterization Information Summary Cover Page

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-003	Rev. 15	11/16/06	CCP Data Analysis for S3000, S4000, and S5000 Characterization
CCP-TP-003	Rev. 14	09/03/03	Sampling Design and Data Analysis for RCRA 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-005	Rev. 17	06/05/06	CCP Acceptable Knowledge Documentation
CCP-TP-005	Rev. 16	02/27/06	CCP Acceptable Knowledge Documentation
CCP-TP-005	Rev. 15	03/31/05	CCP Acceptable Knowledge Documentation
CCP-TP-030	Rev. 30	05/21/12	CCP TRU Waste Certification and WWIS/WDS Data Entry
CCP-TP-030	Rev. 29	04/26/11	CCP TRU Waste Certification and WWIS/WDS Data Entry
CCP-TP-030	Rev. 28	05/12/10	CCP TRU Waste Certification and WWIS/WDS Data Entry
CCP-TP-030	Rev. 27	12/14/09	CCP 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
CCP-TP-030	Rev. 21	05/21/07	CCP CH TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 20	02/07/07	CCP CH TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 19	11/16/06	CCP CH TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 18	05/01/06	CCP TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 17	12/29/05	CCP TRU Waste Certification and WWIS Data Entry
CCP-TP-030	Rev. 16	04/22/05	CCP 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-001	Rev. 15	08/10/07	CCP Transuranic Waste Characterization Quality Assurance Project Plan
CCP-PO-001	Rev. 14	03/28/07	CCP Transuranic Waste Characterization Quality Assurance Project Plan
CCP-PO-001	Rev. 13	11/16/06	CCP Transuranic Waste Characterization Quality Assurance Project Plan
CCP-PO-001	Rev. 12	03/22/06	CCP Transuranic Waste Characterization Quality Assurance Project Plan
CCP-PO-001	Rev. 11	03/10/05	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-002	Rev. 19	05/22/07	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 18	11/16/06	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 17	11/16/06	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 16	11/16/06	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 15	03/22/06	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 14	12/29/05	CCP Transuranic Waste Certification Plan
CCP-PO-002	Rev. 13	05/09/05	CCP Transuranic Waste Certification Plan
CCP-PO-004	Rev. 31	10/01/12	CCP/SRS Interface Document
CCP-PO-004	Rev. 30	10/17/11	CCP/SRS Interface Document
CCP-PO-004	Rev. 29	07/05/11	CCP/SRS Interface Document
CCP-PO-004	Rev. 28	12/29/10	CCP/SRS Interface Document
CCP-PO-004	Rev. 27	05/22/09	CCP/SRS Interface Document
CCP-PO-004	Rev. 26	08/26/08	CCP/SRS Interface Document
CCP-PO-004	Rev. 25	05/20/08	CCP/SRS Interface Document
CCP-PO-004	Rev. 24	06/28/07	CCP/SRS Interface Document
CCP-PO-004	Rev. 23	01/31/07	CCP/SRS Interface Document
CCP-PO-004	Rev. 22	11/16/06	CCP/SRS Interface Document
CCP-PO-004	Rev. 21	03/31/06	CCP/SRS Interface Document
CCP-PO-004	Rev. 20	11/02/05	CCP/SRS Interface Document
CCP-PO-004	Rev. 19	03/14/05	CCP/SRS Interface Document

CCP Correlation of Container Identification Numbers to Batch Data Report Numbers

Waste Stream: # SR-MD-SOIL

Lot # 6

Container ID Number	NDA BDR	RTR BDR	VE BDR	Solids Sampling BDR	Solids Analytical BDR	Load Management/ Overpack Yes
MDL0504556	SRSGS282	SR4RTR0053	N/A	SSC11-00008	ALD11026S,N,V,M	N/A
MDL0506223**	N/A	N/A	N/A	WCS-0501	ALD05021S,N,V,M	N/A
MDL0506233**	N/A	N/A	N/A	WCS-0501	ALD05023S,N,V,M	N/A
MDL0506246**	N/A	N/A	N/A	WCS-0502	ALD05018S,N,V,M	N/A
MDL0506267**	N/A	N/A	N/A	WCS-0501	ALD05024S,N,V,M	N/A
MDL0506281**	N/A	N/A	N/A	WCS-0501	ALD05021S,N,V,M	N/A
MDL0506656	SRSGS282	SR4RTR0053	N/A	SSC11-00008	ALD11026S,N,V,M	N/A
MDL0506675	SRLBC0211	SR4RTR0107	N/A	SSC11-00008	ALD11026S,N,V,M	N/A
MDL0506692	SRLBC0211	SR4RTR0107	N/A	SSC11-00008	ALD11026S,N,V,M	N/A
MDL504586B	SRLBC0210	SR4RTR0108	N/A	SSC11-00008	ALD11026S,N,V,M	N/A

Note: This Lot was established for WSPF revision to capture the data present in the UCL_{90}. All RTR/NDA data for these containers have been accounted for in previous Lots.

** These containers were randomly selected for solids sampling and analysis and are included for the verification of hazardous waste number assignment for the waste stream only.

Signature of Site Project Manager

Joshua Houghton
Printed Name

11/6/2012
Date

CSS-004

CCP Solids Analysis VOC UCL_{90} Evaluation Form

WSPF #: SR-MD-SOIL Rev. 1 **Waste Stream Lot Number** 1 through 2

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 Code
Benzene	No	0	10	0.19500	0.13400	0.04713	0.15461	10	N/A		
Bromoform	No	0	10	0.19500	0.13400	0.04713	0.15461	10	N/A		
Carbon Disulfide	No	0	10	0.19500	0.17900	0.00937	0.18310	10	N/A		
Carbon Tetrachloride	No	0	10	0.19500	0.13400	0.04713	0.15461	10	N/A		
Chlorobenzene	No	0	10	0.19500	0.13400	0.04713	0.15461	10	N/A		
Chloroform	No	0	10	0.19500	0.13400	0.04713	0.15461	10	N/A		
1,1-Dichloroethylene	No	0	10	0.19500	0.13400	0.04713	0.15461	10	N/A		
1,2-Dichloroethane	No	0	10	0.19500	0.13400	0.04713	0.15461	10	N/A		
Ethyl benzene	No	0	10	0.19500	0.13400	0.04713	0.15461	10	N/A		
Methylene chloride	No	0	10	0.29000	0.22200	0.04809	0.24303	10	N/A		
m,p-Xylene[d]	No	0	10	0.39000	0.26750	0.09376	0.30850	10	N/A		
o-Xylene	No	0	10	0.19500	0.13400	0.04713	0.15461	10	N/A		
1,1,2,2-Tetrachloroethane	No	0	10	0.19500	0.13400	0.04713	0.15461	10	N/A		
Tetrachloroethylene	No	0	10	0.19500	0.13400	0.04713	0.15461	10	N/A		
Toluene	No	0	10	0.19500	0.13400	0.04713	0.15461	10	N/A		
trans-1,2-Dichloroethylene	No	0	10	0.19500	0.13400	0.04713	0.15461	10	N/A		
1,1,1-Trichloroethane	No	0	10	0.19500	0.17900	0.00937	0.18310	10	N/A		
Trichloroethylene	No	0	10	0.19500	0.13400	0.04713	0.15461	10	N/A		
1,1,2-Trichloro-1,2,2-trifluoroethane	No	0	10	0.38000	0.26900	0.09695	0.31140	10	N/A		
1,1,2-Trichloroethane	No	0	10	0.19500	0.13400	0.04713	0.15461	10	N/A		
Trichlorofluoromethane	No	0	10	0.29000	0.22300	0.04715	0.24362	10	N/A		
Vinyl chloride	No	0	10	0.19500	0.13400	0.04713	0.15461	4	N/A		
Acetone	Log	0	10	0.53063	0.27434	0.20236	0.36284	100	4.61		
Butanol	No	0	10	1.70000	1.07500	0.54480	1.31327	100	N/A		
Methanol	No	0	10	1.15000	0.81500	0.27085	0.93346	100	N/A		
Methyl ethyl ketone	No	0	10	1.70000	1.07500	0.54480	1.31327	100	N/A		

CRS-005

CCP Solids Analysis VOC UCL_{90} Evaluation Form

WSPF #: SR-MD-SOIL Rev. 1 **Waste Stream Lot Number** 1 through 2

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 Code
Ethyl ether	No	0	10	1.70000	1.07500	0.54480	1.31327	100	N/A		
Isobutanol	Log	0	10	0.13976	0.07629	0.03847	0.09311	100	4.61		
Pyridine	No	0	10	1.70000	1.07500	0.54480	1.31327	100	N/A		
1,4-Dichlorobenzene[c]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Ortho-Dichlorobenzene[c]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Formaldehyde[a(2)]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Hydrazine[b(2)]	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 Savannah River Site.

[b] Required only for homogenous solids and soil/gravel waste from 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) Waste stream SR-MD-SOIL was generated and packaged at the Mound Site and later shipped to SRS for characterization. Because the soil/gravel in this waste stream is from the Mound site and does not contain homogenous solids or soils/gravel from SRS, analysis for analytes specific to SRS homogenous solids and soils/gravels (Formaldehyde and Hydrazine) was not performed.

Signature of Site Project Manager

Joshua Houghton
Printed Name

11/6/2012
Date

CTS-006

CCP Solids Analysis SVOC UCL_{90} Evaluation Form

WSPF #: SR-MD-SOIL Rev. 1 **Waste Stream Lot Number** 1 through 2

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 Code
1,2-Dichlorobenzene [a]	Log	0	10	-1.60944	-2.17421	0.28485	-2.04963	40	3.69		
1,4-Dichlorobenzene [a]	Log	0	10	-1.60944	-2.17421	0.28485	-2.04963	40	3.69		
2,4-Dinitrophenol	Log	0	10	-0.90387	-1.82640	0.56912	-1.57749	40	3.69		
2,4-Dinitrotoluene	Log	0	10	-1.60944	-2.17421	0.28485	-2.04963	2.6	0.96		
Hexachlorobenzene	Log	0	10	-1.60944	-2.17421	0.28485	-2.04963	2.6	0.96		
Hexachloroethane	Log	0	10	-1.60944	-2.17421	0.28485	-2.04963	40	3.69		
2-Methylphenol (cresols)	Log	0	10	-1.60944	-2.17421	0.28485	-2.04963	40	3.69		
3&4 -Methylphenol (cresols)	Log	0	10	-0.90387	-1.82640	0.56912	-1.57749	40	3.69		
Nitrobenzene	Log	0	10	-1.60944	-2.17421	0.28485	-2.04963	40	3.69		
Pentachlorophenol	Log	0	10	-1.60944	-2.17421	0.28485	-2.04963	40	3.69		
Pyridine [a]	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		

[a] Can also be analyzed as an VOC. If analyzed as an VOC, the QAO's of CCP-TP-001, Table C3-4 apply.
[b] Required only for waste matrix code S3220 (organic sludges).

CES-007

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.)

Signature of Site Project Manager

Joshua Houghton
Printed Name

11/6/2012
Date

CCP Solids Analysis Metals UCL_{90} Evaluation Form

WSPF #: SR-MD-SOIL Rev. 1 **Waste Stream Lot Number** 1 through 2

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 Code
Antimony	SQRT	9	10	1.26491	0.96450	0.21278	1.05756	100	10.00		
Arsenic	Log	10	10	1.93152	1.26004	0.35988	1.41743	100	4.61		
Barium	No	10	10	90.00000	73.90000	14.57890	80.27611	2000	N/A		
Beryllium	No	10	10	0.93000	0.84000	0.06976	0.87051	100	N/A		
Cadmium	No	8	10	0.56000	0.27800	0.16288	0.34923	20	N/A		
Chromium	SQRT	10	10	8.94427	6.26290	1.93681	7.10997	100	10.00		
Lead	Log	10	10	2.39790	2.09632	0.15803	2.16543	100	4.61		
Mercury	SQRT	10	10	0.79373	0.49970	0.15019	0.56538	4	2.00		
Nickel	Log	10	10	2.99573	2.76668	0.11311	2.81615	100	4.61		
Selenium	Log	3	10	1.02962	-0.50270	0.82197	-0.14322	20	3.00		
Silver	No	6	10	0.89000	0.35095	0.31489	0.48867	100	N/A		
Thallium	No	0	10	0.50000	0.44950	0.05220	0.47233	100	N/A		
Vanadium	Log	10	10	3.76120	3.36873	0.22168	3.46568	100	4.61		
Zinc	Log	10	10	4.31749	4.02822	0.19225	4.11230	100	4.61		

CIS-008

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.)

Signature of Site Project Manager

Joshua Houghton
Printed Name

11/6/2012
Date

CCP Solid VOCs Summary Data

Waste Stream Number SR-MD-SOIL Waste Stream Lot Number 2

Tentatively Identified Compound	Maximum Observed Estimated Concentrations (ppmv)	# Samples Containing TIC	% Detected
None	N/A	N/A	N/A
Data Supports EPA Hazardous Waste Numbers Assigned by AK? Yes ☑ No ☐			
If no, describe the basis for assigning the EPA Hazardous Waste Codes:			

SPM Signature Date 11/6/2012

CIS-009

CCP Solid SVOCs Summary Data

Waste Stream Number SR-MD-SOIL Waste Stream Lot Number 2

Tentatively Identified Compound	Maximum Observed Estimated Concentrations (ppmv)	# Samples Containing TIC	% Detected
Diethyl Phthalate(1)	1.70	5	50.00%

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

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

(1) Diethyl Phalate was detected in greater than 25% of the samples. No additional sampling is expected and the TIC will be added to the Target Analyte List for this waste stream for any future sampling sets.

SPM Signature Date 11/6/2012

CIS-010

CCP RTR/VE Summary of Prohibited Items and AK Confirmation

Waste Stream #: SR-MD-SOIL Lot #: 6

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: RTR was selected as the characterization method because the waste was previously packaged and RTR meets all the Data Quality Objectives for NDE for waste stream SR-MD-SOIL.

Site Project Manager Signature	Joshua Houghton Printed Name	11/6/2012 Date

CES-011

CCP Reconciliation with Data Quality Objectives

WSPF# SR-MD-SOIL Rev. 1 Lot # 6

Sampling Completeness

RTR/VE:

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: 10 Number of Total Samples collected: 10
Percent Complete: 100 (QAO is ≥90%)
Number of Valid Samples: 10 Number of Total Samples analyzed: 10
Percent Complete: 100 (QAO is ≥90%)

Total SVOC

Number of Valid Samples: 10 Number of Total Samples collected: 10
Percent Complete: 100 (QAO is ≥90%)
Number of Valid Samples: 10 Number of Total Samples analyzed: 10
Percent Complete: 100 (QAO is ≥90%)

Total Metals

Number of Valid Samples: 10 Number of Total Samples collected: 10
Percent Complete: 100 (QAO is ≥90%)
Number of Valid Samples: 10 Number of Total Samples analyzed: 10
Percent Complete: 100 (QAO is ≥90%)

CIS-012

CCP Reconciliation with Data Quality Objectives

WSPF# SR-MD-SOIL Rev. 1 Lot # 6

	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.

CIS-013

CCP Reconciliation with Data Quality Objectives

WSPF# SR-MD-SOIL Rev. 1 Lot # 6

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	Joshua Houghton Printed Name	11/6/2012 Date

CIS-014

Summation of Aspects of AK Summary Report: Waste Stream SR-MD-SOIL

Overview

Waste stream SR-MD-HET consists of contact-handled transuranic (TRU) contaminated soil generated at the Mound Site and stored by the Savannah River Site (SRS). The containers in this waste stream were transferred from the Mound Site to SRS for characterization and storage between 2001 and 2005. Mound was an integrated research, development, and production facility performing work in support of both U.S. Department of Energy (DOE) weapons and energy programs. The primary mission as it relates to the generation of TRU waste was the processing of Plutonium (Pu)-238 for the fabrication of radioisotopic heat sources for space and military applications. Pu-238 production operations started in 1961 and ended by 1980. Since 1980, Mound operations have included radiochemical analysis, decontamination and decommissioning (D&D), and site remediation.

Waste Stream SR-MD-SOIL was contaminated with or generated by Mound operations in support of defense nuclear materials production and defense research and development. Therefore, this waste stream is defense related waste.

This summation of the Acceptable Knowledge (AK) Summary Report includes information to support Waste Stream Profile Form (WSPF) number SR-MD-SOIL, Rev. 1 for contaminated soil generated at the Mound Site. The WSPF was originally approved on September 29, 2010. The primary source of information for this Summation is CCP-AK-SRS-8, *Central Characterization Program Acceptable Knowledge Summary Report For Mound Site Transuranic Waste Stored at Savannah River Site, Waste Streams: SR-MD-HET, SR-MD-SOIL, SR-MD-HOM-A, SR-MD-HOM-C,* Revision 8, October 10, 2012.

Waste Stream Identification Summary

Wastes Stream Name:	Contaminated Soil from the Mound Site
Waste Stream Number:	SR-MD-SOIL
Dates of Waste Generation:	June 1988 – May 2005
Waste Stream Volume – Current:	60 55-gallon drums 9 standard waste boxes 3 standard large box 2s
Waste Stream Volume – Projected:	None
Summary Category Group:	S4000 – Soil/Gravel
Waste Matrix Code Group:	Soils
Waste Matrix Code:	S4200
TRUPACT-II Content Codes:	SQ 111/SQ 211
TRUPACT-III Content Code:	SR 411

Annual Transuranic Waste Inventory Report (ATWIR) Identification Number: SR-MD-SOIL

Waste Stream Description and Physical Form

Waste stream SR-MD-SOIL is comprised primarily of soil but also includes some rock, concrete, rebar, and piping (References I092 and U001). Absorbent (i.e., Florco or Petrosorb) was also added to soil containers (References P095 and U001). Mound soil is primarily glacial till ranging from gravel and sand to dense clay with clay being predominant (Reference P065).

The waste stream meets the definition of waste materials that have common physical form, that contain similar hazardous constituents, and that are generated from a single process or activity. This waste stream was generated from the cleanup of research and processing areas and D&D/remediation of Mound facilities.

Point of Generation

Location

Waste Stream SR-MD-SOIL was generated at the Mound Site in Miamisburg, Ohio. The waste is currently stored at the SRS E-Area TRU waste storage pads in Aiken, South Carolina.

Area and/or Buildings of Generation

Waste stream SR-MD-SOIL was generated from D&D of Special Metallurgical (SM) Building, remediation of the SM West Asphalt Area, and remediation of two areas of the Waste Transfer System (WTS) underground transfer lines. One area was a segment of the WTS that ran from Semi-Works (SW) and Research (R) Buildings to Waste Disposal (WD) Building. The other area of the WTS was the hillside near WD Building where lines ran from SM and Plutonium Processing (PP) Buildings to WD Building (References P040, U001, and U018).

Generating Processes

Description of Waste Generation Processes

A brief description of the specific areas and buildings at Mound that generated TRU waste is provided below (Reference P020).

<u>SM Building</u>

The SM facility became operational in 1961 and was the original building used for Pu-238 processing until operations were transferred to PP Building (References M042, P036, P053, and P054).

<u>PP Building</u>

The PP facility (also known as Building 38) was constructed in 1967 and was used primarily for production of Pu-238 heat source capsules and Pu-238 recovery operations. The Pu-238 processing operations ended by 1980. The only TRU waste generating operations since that time were various programs in the north analytical line and building support functions (References M042, P044, and P054).

R Building

The R facility was built in 1948 and was initially used for research and development (R&D) for the polonium-210 program. The polonium program was phased out by 1971. Pu-238 research began in about 1959. Most of the Pu-238 work ended in about 1978 although a few operations continued into the 1990s. R&D work involving tritium was also conducted starting in the early 1980s (References I090, M042, and P054).

SW Building

The SW facility consisted of many laboratories used for a variety of operations. The "old cave" and "new cave" areas consisted of a number of rooms with several types of alpha and gamma radiation and project capabilities (References M042 and P054).

WD/Waste Disposal Annex (WDA) Building

The WD facility became operational in 1949 and was the central facility for the treatment of liquid radioactive wastes at Mound. The WDA was added in 1966 for the treatment of alpha waste water from SM and PP buildings. The beta waste water treatment system began in 1967 (References M042, P045, and P054).

Waste Transfer System and Hillside

The WTS includes underground transfer lines that transported liquid waste from various site buildings to WD Building for treatment. The WTS remediation included the underground pipeline that ran from SW/R to WD and the two (2) underground pipelines that ran from SM/PP to the pump house (Building 41) and then to WD through two (2) underground pipelines. The Hillside is located adjacent to WD, and is the site of a 1969 spill resulting from a ruptured pipeline (References M042, P053, and U018).

Sewage Disposal Plant

The Sewage Disposal (SD) Plant was built in 1948 to process sanitary waste. It was taken out of service in the 1970s when it became too small and was replaced by a new sanitary sewage disposal plant. The area surrounding the old SD Plant became contaminated due to the 1969 rupture of the WTS pipeline and from a waste line break near Building 48 in 1970 (References I090, M044, and P056).

D&D/Remediation Operations

Soil waste was generated during D&D operations and from several remediation projects. Areas remediated included portions of the WTS underground transfer lines that transported liquid waste from various site buildings to WD Building for treatment. In addition, contaminated areas beneath and adjacent to SM Building have also generated soil.

The WTS pipeline, which was placed into operation in 1968, carried acidic and caustic wastewater from PP Building to WD Building. During a routine transfer of plutonium nitrate solution on January 23, 1969, the pipeline ruptured leading to significant Pu-238 contamination. The rupture occurred at a corroded joint located in a section of pipe on the hillside between the pump house (Building 41) and south of WD Building. The rupture of this pipeline also caused the area surrounding the old SD facility (which was adjacent to WD Building) to become

contaminated with Pu-238. In December 1970, elevated alpha activity was observed at the SD influent tanks during routine monitoring. Subsequent search and sampling of the sanitary and process sewer lines indicated that seepage from the process lines had in fact affected the sanitary lines which were made from vitrified clay. Soil removal from this area was done in 1974 and shipped to Idaho (References I028, I033, I090, M044, P017, P018, P056, P086, and P099). Additional remediation of this area in 1988 generated the TRU soil in this waste stream (References C003, C016, M042, and U001).

Soil was also generated in 2004 and 2005 from the remediation of Potential Release Site (PRS)-438. PRS-438 was an area with contaminated soil and a segment of the WTS underground transfer lines between SW and R Buildings and north of WD Building (References M062, U001, and U018).

The area under and immediately surrounding SM Building was contaminated with Pu-238. The contamination was largely the result of activity located beneath the operations side of the building and the previous utilization of low-risk tanks outside the building (References I033 and P017). The TRU soil in this waste stream was from beneath the building floor; specifically SM-10 (References P020 and U001).

Soil was also generated in 2005 by the SM West Asphalt Project. The "West Asphalt" area is immediately adjacent and west of the SM/PP stack running west to the roadway and approximately 30 meters north. This location on the SM/PP hill is known to historically contain several radiological hot spots (References M061 and U001).

Waste Stream Material and Chemical Inputs

The following table identifies the RCRA toxicity characteristic and listed constituents identified in this waste stream.

Waste Stream SR-MD-SOIL Chemicals

Chemical	EPA Code	Use/Presence	References
Copper, gold, and sodium cyanide plating solutions	F007 F009	SD influent from plating shop	I090
Arsenic	D004	Analysis in R Bldg R Bldg chemical inventory (1996, 1998) SD influent from plating shop	P020 P096 I090
Barium	D005	Analysis in R Bldg R Bldg chemical inventory (1996, 1998) Chemical used in SM, PP, and R Bldgs	P020 P096 C016, I008, M004
Cadmium	D006	Listed as a trace contaminant of soil SD influent from plating shop Analysis in R Bldg R Bldg chemical inventory (1996) Chemical used in SM, PP, and R Bldgs	U003 I090 P020 P096 C009, I008, M004
Chromium	D007	Listed as a trace contaminant of soil SD influent from plating shop Analysis in R Bldg R Bldg chemical inventory (1996, 1998) Chemical used in SM, PP, and R Bldgs	U003 I090 P020 P096 C009, I008, M004

Lead	D008	WD influent from analytical laboratories Listed as a trace contaminant of soil Analysis in R Bldg R Bldg chemical inventory (1996, 1998) R Bldg chemical inventory (1998)	I045, P100 U003 P020 P096 C012
Mercury	D009	WD influent from analytical laboratories Listed as a trace contaminant of soil Analysis in R Bldg R Bldg chemical inventory (1996, 1998) R Bldg chemical inventory (1998)	I045, P100 U003 P020 P096 C012
Selenium	D010	Listed as a trace contaminant of soil Analysis in R Bldg R Bldg chemical inventory (1996, 1998) Chemical used in SM, PP, and R Bldgs	U003 P020 P096 C016, I008, M004
Silver	D011	Listed as a trace contaminant of soil SD influent from photographic solution SD influent from plating shop Analysis in R Bldg R Bldg chemical inventory (1996) Chemical used in SM, PP, and R Bldgs	U003 I090 I090 P020 P096 C009, I008, M004
1,1,1-Trichloroethane	F002	Solvent extraction in R Bldg Cleaning in SW Bldg Chemical used in SM, PP, and R Bldgs	I090 P020 C016
1,1,2-Trichloroethane	F002	Unspecified uses	C016
1,1,2-Trichloro-1,2,2-trifluoroethane	F002	SD influent from plating shop Degreasing in SW R Bldg chemical inventory (1996, 1998) Chemical used in SM, PP, and R Bldgs	I090 C019 P096 C005, C016
Chlorobenzene	F002	R Bldg chemical inventory (1996)	P096
ortho-Dichlorobenzene	F002	Chemical used in SM, PP, and R Bldgs	C016
Methylene chloride	F002	Solvent extraction in R Bldg Ultrasonic cleaning in R Bldg R Bldg chemical inventory (1996, 1998) Chemical used in SM, PP, and R Bldgs	I090 P020 P096 C016
Tetrachloroethylene	F002	SD influent Solvent use in SW Chemical used in SM, PP, and R Bldgs	I090 C019 C011, C016
Trichloroethylene	F002	WD influent from SM and R SD influent from plating shop Degreasing in SM R Bldg chemical inventory (1996, 1998) Chemical used in SM, PP, and R Bldgs	I045, I090, P065 I090 C007, C010 P096 C011, C016
Acetone	F003	WD influent from SM and PP SD influent from plating shop SM for cleaning Ultrasonic cleaning in R Bldg Cleaning in SW Chemical used in SM, PP, and R Bldgs	I090, P065, P100 I090 C007, C008, I050 P020 C019, P020 C005
n-Butyl alcohol	F003	Chemical used in SM, PP, and R Bldgs	C016
Cyclohexanone	F003	R Bldg chemical inventory (1996) Chemical used in SM, PP, and R Bldgs	P096 C016
Ethyl acetate	F003	Chemical used in SM, PP, and R Bldgs	C016
Ethyl benzene	F003	Chemical used in SM, PP, and R Bldgs	C016

Ethyl ether	F003	Chemical used in SM, PP, and R Bldgs	C016
Methanol	F003	WD influent from SM and R Degreasing in SM Cleaning in SW Chemical used in SM, PP, and R Bldgs	I045, I090, P065 C010, C020 P020 C016
Methyl isobutyl ketone	F003	Chemical used in SM, PP, and R Bldgs	C016
Xylene	F003	Cleaning and polishing in SW Scintillation counting R Bldg chemical inventory (1996, 1998) Chemical used in SM, PP, and R Bldgs	P020 P064 P096 C011
Nitrobenzene	F004	R Bldg chemical inventory (1998) Chemical used in SM, PP, and R Bldgs	P096 C016
2-Ethoxyethanol	F005	Chemical used in SM, PP, and R Bldgs	C016
2-Nitropropane	F005	Chemical used in SM, PP, and R Bldgs	C016
Benzene	F005	R Bldg chemical inventory (1996, 1998) Chemical used in SM, PP, and R Bldgs	P096 C011, C016
Carbon disulfide	F005	Chemical used in SM, PP, and R Bldgs	C016
Isobutanol	F005	Chemical used in SM, PP, and R Bldgs	C016
Methyl ethyl ketone	F005	Chemical used in SM, PP, and R Bldgs	C011, C016
Pyridine	F005	R Bldg chemical inventory (1996) Chemical used in SM, PP, and R Bldgs	P096 C016
Toluene	F005	Cleaning and polishing in SW R Bldg chemical inventory (1996, 1998) Chemical used in SM, PP, and R Bldgs	C019, P020 P096 C011, C016

RCRA Determinations

Historical Waste Management

Waste Stream SR-MD-SOIL has historically been managed in accordance with the generator site requirements and in compliance with the requirements of the Ohio Environmental Protection Agency and the South Carolina Department of Health and Environmental Control. The containers in this waste stream were historically managed as non-hazardous waste. However, a review of available AK documentation has determined that this waste is hazardous and is assigned EPA hazardous waste numbers D004, D005, D006, D007, D008, D009, D010, D011, F002, F003, F004, F005, F007, and F009. The Waste Stream SR-MD-SOIL Chemicals table summarizes the expected hazardous chemical contaminants and associated hazardous waste numbers applicable to the waste stream. The assignment of these hazardous waste numbers was based primarily on a review of the chemical inputs to the waste generating operations and hazardous materials potentially contaminating the waste stream. AK was collected from a variety of sources, including standard operating procedures, analytical data, chemical inventories, and interviews (References DR002, I001, M061, M062, and U001).

Hazardous Waste Determinations

Ignitability, Corrosivity, Reactivity

Ignitability

The materials in waste stream SR-MD-SOIL do not meet the definition of ignitability as defined in 40 Code of Federal Regulations (CFR) 261.21. Mound used ignitable liquids including

alcohols (e.g., ethanol, isopropanol, methanol) and non-chlorinated solvents (e.g., acetone, toluene). However, the material is not a liquid, an ignitable compressed gas, or an oxidizer, and is not capable of causing fire through friction, absorption of moisture, or spontaneous chemical change. Liquids, compressed gases, and pyrophorics are prohibited by procedure and waste acceptance criteria in TRU waste (References P041, P065, P078, P105, P117, P120, P121, and U019). A study of water content of a variety of soils likely to be encountered at Mound was performed. The results of this study indicated the amount of Florco absorbent required to absorb any liquid created by packing compression (Reference P065). RTR and/or VE are performed to ensure liquids do not exceed the amount allowed by WIPP. Any container identified with liquids in excess of the amount allowed will be segregated from the waste stream during characterization and will not be eligible for disposal at WIPP until further characterization and/or processing is conducted. Pyrophoric materials do not exist in Mound soils. Underground piping that leaked originated from buildings that did not contain or dispose of pyrophoric materials in the piping (Reference P065). Waste stream SR-MD-SOIL is therefore not ignitable (D001).

Corrosivity

The materials in waste stream SR-MD-SOIL do not meet the definition of corrosivity as defined in 40 CFR 261.22. Mound used acids (e.g., nitric, hydrochloric, hydrofluoric, sulfuric) and caustics (e.g., sodium hydroxide). However, liquids are prohibited by procedure and waste acceptance criteria in TRU waste (References P041, P065, P078, P105, P117, P120, P121, and U019). A study of water content of a variety of soils likely to be encountered at Mound was performed. The results of this study indicated the amount of Florco absorbent required to absorb any liquid created by packing compression (Reference P065). Also, the acid from the pipe rupture was neutralized by the soil carbonates (Reference P013). RTR and/or VE are performed to ensure liquids do not exceed the amount allowed by WIPP. Any container identified with liquids in excess of the amount allowed will be segregated from the waste stream during characterization and will not be eligible for disposal at WIPP until further characterization and/or processing is conducted. Waste stream SR-MD-SOIL is therefore not corrosive (D002).

Reactivity

The materials in waste stream SR-MD-SOIL do not meet the definition of reactivity as defined in 40 CFR 261.23. The materials are stable and will not undergo violent chemical change without detonating. The materials will not react violently with water, form potentially explosive mixtures with water, or generate toxic gases, vapors, or fumes when mixed with water. The waste does not contain sulfides. The materials are not capable of detonation or explosive reaction. Explosives have not been identified in this waste stream, and procedures and waste acceptance criteria prohibit the disposal of explosives in TRU waste (References I010, P041, P065, P078, P105, P117, P120, P121, and U019). Waste stream SR-MD-SOIL is therefore not reactive (D003).

Calcium metal was used in the 1960s to reduce plutonium tetrafluoride to metal. After the reduction process, the Pu-238 metal was broken away from the slag, and the metal was cleaned with a brush to remove adherent slag and calcium metal. The slag and calcium metal were sent to plutonium recovery, and therefore, will not be in this waste stream (Reference I090).

Cyanides were contained in aqueous liquids treated in SD and WD Buildings and residual cyanides could therefore be present in the soil. However, residual cyanides would not cause the soil to exhibit the characteristic of reactivity (References I045, I090, and P100).

Toxicity Characteristic

Waste stream SR-MD-SOIL exhibits the characteristics of toxicity for metals as defined in 40 CFR 261.24. The toxicity characteristic metals arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver may be present in trace quantities in soil.

Soil cores were extracted from several sampling points around SW Building prior to remediation of the area. The soil samples (29) were analyzed for total metals. Several RCRA regulated metals were detected in small quantities (barium at 210 parts per million [ppm] was the highest concentration) but none above the regulatory level. These data are directly applicable to the soil from PRS-438 which accounts for the majority of this waste stream (Reference M062).

Soil samples were also collected at 25 locations on a 10-meter grid at the SM West Asphalt Area and analyzed for metals by the Toxicity Characteristic Leaching Procedure (TCLP). Several RCRA regulated metals were detected in small quantities (barium at 3,960 micrograms per liter was the highest concentration) but none above the regulatory level (Reference M061).

Even though the analytical results indicate the metal concentrations are less than their respective regulatory levels, the above data do not represent the entire population of soil (References M061 and M062). In addition, the soil waste is primarily the result of contamination from aqueous liquids which could contain inorganic constituents (e.g., toxic metals). For these reasons, EPA hazardous waste numbers D004, D005, D006, D007, D008, D009, D010, and D011 are applied to waste stream SR-MD-SOIL (Reference DR002).

Waste stream SR-MD-SOIL does not exhibit the characteristic of toxicity for organic compounds as defined in 40 CFR 261.24. The toxicity characteristic organics benzene, methyl ethyl ketone, nitrobenzene, pyridine, tetrachloroethylene, and trichloroethylene may be present in the soil. However, these compounds are known (or in some cases assumed) to have been used for their solvent properties, and therefore, the more specific F-listed hazardous waste numbers are assigned. Consequently, D018 (benzene), D035 (methyl ethyl ketone), D036 (nitrobenzene), D038 (pyridine), D039 (tetrachloroethylene), and D040 (trichloroethylene) are not assigned to the waste stream (Reference DR002).

Soil cores were extracted from several sampling points around SW Building prior to remediation of the area. While there was no evidence of volatile organics in previous samplings, organic solvents were used in the R and SW buildings. For this reason, field screening was performed for indications of volatile organics. The field screening was positive for four samples. These four samples were forwarded to the laboratory for total organic constituent analysis. Methyl ethyl ketone was the only toxicity characteristic organic detected with the highest concentration being 69 micrograms per kilogram. Benzene, tetrachloroethylene, and trichloroethylene were not detected in any of the samples. Other toxicity characteristic organics were not analyzed. These data are directly applicable to the soil from PRS-438 which accounts for the majority of this waste stream (Reference M062).

Soil samples were also collected at 25 locations on a 10-meter grid at the SM West Asphalt Area and analyzed for volatile and semi-volatile organics by TCLP. Tetrachloroethylene was detected in five of the samples with a maximum concentration of 13 micrograms per liter.

Nearly every toxicity characteristic organic was analyzed for, and no other constituents were detected (Reference M061).

Although every toxicity characteristic organic compound was not analyzed for and the above analytical data do not represent the entire population of soil, the same approach was not used for the assignment of toxicity characteristic organic hazardous waste numbers as was done for the toxic metals. This is because the soil waste is primarily the result of contamination from aqueous liquids which could contain inorganic constituents (e.g., toxic metals). Pure organic compounds were not treated in the SD or WD facilities and are not expected to be present above regulatory levels (References I090, M042, M044, P045, P054, and P056). Therefore, waste stream SR-MD-SOIL is not assigned toxicity characteristic organic EPA hazardous waste numbers.

Listed Waste

F-Listed Waste

Waste stream SR-MD-SOIL may contain or be mixed with F-listed hazardous wastes from non-specific sources as listed in 40 CFR 261.31. Aqueous solutions containing trace quantities of organic solvents from R, SW, SM and/or PP Buildings were treated in WD Building. Several aqueous solutions containing trace quantities of organic solvents were also treated in the old SD facility. This waste stream includes soil from under and west of SM Building and from remediation of underground liquid waste transfer lines north and south of SD Building and WD Building and is therefore potentially contaminated with these liquids. Although the waste is not ignitable, F003 has historically been assigned to SRS waste streams including SR-MD-SOIL. EPA hazardous waste numbers F002, F003, F004, and F005 are therefore assigned to waste stream SR-MD-SOIL (Reference DR002).

Spent plating bath solutions and spent stripping and cleaning bath solutions from electroplating operations where cyanides were used from the plating shop were treated in SD Building. There is a potential that seepage of the underground lines coming into SD Building contaminated the surrounding soil. Therefore, EPA hazardous waste numbers F007 and F009 are assigned to waste stream SR-MD-SOIL (Reference DR002).

Although 1,1,1-trichloroethane, methylene chloride, tetrachloroethylene, and trichloroethylene are also F001-listed solvents, this assignment is only appropriate when these solvents are used in a large-scale degreasing operation such as cold cleaning or vapor degreasing on an industrial scale. This waste was not generated as a result of large-scale degreasing operations. Therefore, EPA hazardous waste number F001 is not assigned to this waste stream.

Soil cores were extracted from several sampling points around SW Building prior to remediation of the area. While there was no evidence of volatile organics in previous samplings, organic solvents were used in the R and SW buildings. For this reason, field screening was performed for indications of volatile organics. The field screening was positive for four samples. These four samples were forwarded to the laboratory for total organic constituent analysis. Several organic solvents were detected in small quantities (210 parts-per-billion was the highest concentration) including ortho-dichlorobenzene (1 detect), methylene chloride (4 detects), acetone (4 detects), methyl ethyl ketone (3 detects), and toluene (3 detects). These data are directly applicable to the soil from PRS-438 which accounts for the majority of this waste stream (Reference M062).

Soil samples were also collected at 25 locations on a 10-meter grid at the SM West Asphalt Area and analyzed for volatile and semi-volatile organics by the TCLP. Tetrachloroethylene was detected in five of the samples with a maximum concentration of 13 micrograms per liter. No other constituents were detected (Reference M061).

Several of the organic solvents listed were not analyzed for, and the above analytical data do not represent the entire population of soil. For this reason, those organic constituents are assumed to be present as spent solvent contaminants of the soil (References M061 and M062).

K-Listed Waste

This waste stream does not include any of the manufacturing process wastes from the specific industries or sources listed in 40 CFR 261.32.

P- and U-Listed Waste

Waste stream SR-MD-SOIL is not 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. Numerous U- and P-listed chemicals were identified in Mound facilities; however, none of the AK documentation reviewed indicates that pure product or unused chemicals were placed into TRU waste.

The organic solvents were in spent aqueous solutions discharged through the WTS for treatment which does not meet the definition of a U-listed waste. In addition, hydrofluoric acid was used in analytical laboratories and in the plating shop. The hydrofluoric acid from these operations was used for its intended purpose prior to being discharged through the WTS for treatment and will not be present in the soil as unused product. Therefore, this waste stream SR-MD-SOIL is not a U134-listed waste (References I090 and P100). Beryllium was not specifically identified in this waste stream. Soil cores were extracted from several sampling points around SW Building prior to remediation of the area. The soil cores were divided into aliquots for analysis, including 29 analyzed for beryllium. Most of the samples contained extremely small amounts of beryllium ranging from 0.54 to 1.4 ppm. However, the beryllium contamination in this waste does not meet the definition of a P-listed waste (Reference M062). Therefore, this waste stream is not assigned U- or P-Listed EPA hazardous waste numbers.

Polychlorinated Biphenyls

The soil and debris materials in waste stream SR-MD-SOIL are not regulated as a Toxic Substances Control Act (TSCA) waste under 40 CFR 761 because no sources of PCBs have been identified in this waste stream.

Soil cores were extracted from several sampling points around SW Building prior to remediation of the area. These data are directly applicable to the soil from PRS-438 which accounts for the majority of this waste stream. The soil samples (29) were analyzed for nine different Aroclors as well as decachlorobiphenyl. The Aroclors were all below the 50 microgram per kilogram detection limit, and the maximum concentration of decachlorobiphenyl was 183 micrograms per kilogram. Since the TSCA regulatory level is 50 ppm (milligrams per kilogram), this soil is not regulated as PCB waste (Reference M062).

Prohibited Items

Prohibited items were not identified in this waste stream on the container paperwork (Reference U001). Historical RTR observed small amounts of liquids (non-prohibited quantities), which originated from spraying water to suppress dust before waste container packaging (Reference DR007, M064, and U019). However, characterization activities have identified prohibited quantities of liquid. Therefore, containers with prohibited waste items identified during characterization activities will be segregated and/or repackaged to remove the items prior to certification and shipment (References P124, P126, and P127).

Method for Determining Waste Material Parameters Weights per Unit of Waste

The following waste material parameters are associated with waste stream SR-MD-SOIL. This information is based on specific waste items identified in packaging procedures, standard operating procedures, and waste disposal forms (References I092 and U001).

To estimate the waste material parameter weight percentages for waste stream SR MD SOIL, data were obtained from the 29-90 forms. SRS observed the packaging of the waste at Mound and estimated the material parameters at the time of generation then entered the information on the 29-90 forms. 29-90 data for 19 containers from waste stream SR-MD-SOIL were evaluated.

A statistical analysis of the 29-90 data was performed, the results of which are presented in the Waste Stream SR-MD-SOIL Waste Material Parameters table.

Waste Stream SR-MD-SOIL Waste Material Parameters

Waste Material Parameter	Average Weight Percent	Weight Percent Range		
Iron-based Metals/Alloys	3.3%	0	–	21.3%
Aluminum-based Metals/Alloys	0.0%	0	–	0.0%
Other Metals	0.0%	0	–	0.0%
Other Inorganic Materials[1]	1.9%	0		9.5%
Cellulosics	0.0%	0	–	0.0%
Rubber	0.0%	0	–	0.0%
Plastics	0.1%	0	–	6.4%
Organic Matrix[1]	0.0%	0	–	0.0%
Inorganic Matrix	0.0%	0	–	0.0%
Soils/Gravel	94.7%	75.3	–	100%

[1]Review of the 29-90 forms has determined that inorganic absorbent has been listed incorrectly as organic. Therefore, the original waste material parameter evaluation has been updated.

List of Any AK Sufficiency Determinations Requested for the Waste Stream

There are no AK sufficiency determination requests for this waste stream.

Transportation

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

Beryllium

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

Radionuclide Information

To determine isotopic ratios for waste stream SR-MD-SOIL as a whole, the total gram value for each individual radionuclide was divided by the total mass of all radioactive constituents in the waste stream and converted to a percentage. 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 Wt% Range for Individual Containers." The same process was applied to determine "Total Radionuclide Ci%" and "Radionuclide Ci% Range for Individual Containers."

As shown in the Waste Stream SR-MD-SOIL Radiological Characterization table, Pu-239 is the most predominant radionuclide by mass, and Pu-238 is the second most predominant radionuclide by mass (References DR005, DR015, I020, I092, M077, M078, M079, and U001).

Waste Stream SR-MD-SOIL Radiological Characterization

Radionuclide	Total Radionuclide Weight%[1]	Total Radionuclide Curie%[2]	Radionuclide Wt% Range for Individual Containers [3]	Radionuclide Ci% Range for Individual Containers [4]	Suspected Present (Yes/No)
WIPP Required Radionuclides					
Am-241	1.29%	0.92%	Trace – 22.13%	Trace – 11.94%	Yes
Pu-238	**27.54%**	97.64%	2.11 – 99.99%	66.80– 99.99%	Yes
Pu-239	**60.80%**	0.78%	0 – 96.20%	0 – 13.54%	Yes
Pu-240	0.24%	0.01%	0 – 5.83%	0 – 1.73%	Yes
Pu-242	0.04%	Trace[5]	0 – 0.80%	0 – Trace	Yes
U-233	Not Reported[6]	Not Reported	Not Reported	Not Reported	Yes
U-234	7.12%	0.01%	0 – 32.65%	0 – 0.02%	Yes
U-238	Not Reported	Not Reported	Not Reported	Not Reported	Yes
Sr-90	Trace	Trace	0 – Trace	0 – Trace	Yes
Cs-137	Trace	0.08%	0 – 1.97%	0 – 9.28%	Yes
Additional Reported Radionuclides					
Bi-214	Trace	Trace	Trace	Trace	Yes
Co-60	Trace	Trace	Trace	0 – Trace	Yes
Np-237	2.94%	Trace	0 – 24.89%	0 – Trace	Yes
K-40	Trace	Trace	Trace	Trace	Yes
Pb-212	Trace	Trace	Trace	Trace	Yes
Pb-214	Trace	Trace	Trace	Trace	Yes
Pu-241	0.03%	0.56%	0 – 0.46%	0 – 21.83%	Yes
Other Radionuclides Not Reported in Soil Assay but May Be Present in Trace Amounts[7]					
Ac-227	H-3	Pa-231	Pb-210	Ra-226	Ra-228
Th-228	Th-229	Th-230	Th-232	Ac-228	Ba-133
Bi-212	Bi-213	Cf-252	Cm-244	Cs-134	Eu-152
Eu-154	Fr-221	Ho-166m	Na-22	Pa-233	Pb-206
Pb-211	Po-209	Po-210	Pu-236	Ra-223	Ra-226
Rn-219	Sb-125	Th-227	Th-234	Tl-208	U-232
U-235	U-237	Y-90			

1. This listing indicates the total wt% 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 wt% range of each radionuclide on a container-by-container basis. Some containers with "0" listed as the lower range, will not contain the specified radionuclide.
4. This listing is the curie percent range of each radionuclide on a container-by-container basis.
5. "Trace" indicates <0.01 percent for that radionuclide.
6. "Not Reported" indicates that an activity value for that radionuclide was not reported in assay results but is suspected present in the waste stream.
7. These radionuclides were not reported in assay data for soil but were historically processed at Mound and/or were detected in assay of debris waste, and therefore, may be present in this waste stream. Only trace amounts are assumed to be present in the waste stream.

Payload management will not be utilized for this waste stream.

Source Documents

Source Document Number	Title
C003	Interview with Bill Franz
C005	Interview/Dan Hopkins
C006	Interview/Dick Blauvelt
C007	Interview with Dr. Bernie Kokenge
C008	Interview with Toby Elswick
C009	Interview with Paul Figgins
C010	Interview/Clyde Chong
C011	Interview/Ron Goss
C012	Interview/Bill Davis
C013	Interview/Al Combs
C016	Interview/Ron Saun
C019	Interview/Mike Deaton
C020	Record of Communication Don Luthey
C022	Justification for Pu-238 Programs
C024	List of different types of containers
C040	E-mails from C. Sienkiewicz to J. Harrison, Re: Mound Soil and Soil Packaging Questions
C041	Rockwell International Letter from J. K. Paynter to B. C. Barrett. Subject: Radionuclide Information Required For TRUPACT II Shipments
C042	Letters to Thomas L. Clements, EG&G Idaho from R.N. Rogers, LANL, Re: Reactivity of Resins (nitrated)
C043	Email from Jeff Harrison to Felicia Hinojos re: SRS-8 Freeze File – SR-MD-SOIL Layers of Confinement
C044	E-mail to Mike Papp: Subject Packaging Procedures: Repackaging plans for TRU waste described in CCP-AK-SRS-8
C046	Reconciliation of Waste Containers List for Waste Streams SR-MD-HET, SR-MD-HOM-A, SR-MD-HET, and SR-MD-SOIL
DR001	Discrepancy Resolution: Heterogeneous Debris
DR002	Discrepancy Resolution for Soils/Debris
DR003	Discrepancy Resolution: Inorganic Absorbents
DR005	Discrepancy Resolution. Radionuclides in Mound Waste Streams
DR006	Discrepancy Resolution. Drums Moved from Waste Stream SR-MD-SOIL to Waste Stream SR-MD-HET
DR007	Discrepancy Resolution. Drums in Waste Stream SR-MD-SOIL Containing Residual Liquids
DR008	Discrepancy Resolution with EPA Codes for of Waste Stream SR-MD-HOM-C
DR009	Acceptable Knowledge Source Document Discrepancy Resolution. MDL021377 Compacted Waste
DR010	Acceptable Knowledge Source Document Discrepancy Resolution. Drums Not S5000
DR015	Acceptable Knowledge Source Document Discrepancy Resolution Reassignment of Predominant Radionuclides for SR-MD-SOIL
DR017	Acceptable Knowledge Source Document Discrepancy Resolution - Waste Stream SR-MD-HOM-C Radiological Characterization
I001	Transuranic Waste Baseline Inventory Report 1995
I003	Milliwatt Surveillance Program Ensures RTG Safety and Reliability. The Actinide Research Quarterly.
I005	Waste Exam Log for RTR Tapes
I007	O.U.9 Site Scoping Report
I008	Drum Container Tables

Source Document Number	Title
I010	TRAMPAC Requirement Matrix by Drum
I011	EPA Hazardous Waste Codes found in INEL Stored TRU Waste Content Code
I017	List of Drums /Date/Source/Operation/Misc./By
I018	Draft Mound Compliance with TRUPACT II
I019	Waste Characterization Services Report
I020	Spreadsheets of Waste from SRS Bill Nauman and Glen Siry
I021	Completion of Mound "Newly Generated Waste" TRU Waste Certification Program Evaluation
I023	Criticality Safety Evaluation for Mound RTG Storage DRAFT
I026	Predecisional Draft for the Semi-Works/Research (SW/R) Tritium Complex
I028	CERCLIS Memo
I030	Mound Lab Annual Report
I031	Plutonium Working Group Report on Environmental, Safety and Health Vulnerabilities Associated with the Departments Plutonium Storage Vol.2-App.B-Part 7
I032	Mound Heat Source
I033	Investigation Report No.74-13 Plutonium Off-site
I036	Mound Laboratory
I039	Transportation/Communication Plan 11/28/00 TRU Waste Shipment to SRS.
I042	Transmittal of Mound Waste Box Evaluation
I043	Mound Laboratory Fact Book
I044	Pu-238 Fuel Data Sheets
I045	TRU Waste Certification Task Sludge From the Waste Disposal Plant
I048	Regulatory Requirements Associated with Transfer of Mound's Transuranic Waste to Another DOE Site
I050	Support to DOE Mound- Building 38 Safety Analysis Report (SAR) and Technical Requirements (TSRs)
I057	R. M. Munson Memo to R.A. Neff of 2-1-85/Ohio EPA Proposed Law Suit
I063	On Site Handling, Repackaging, and Transportation of Nuclear Materials Located In SW-19 and R-127 (UCNI)
I066	Mound Transuranic Waste Feasibility Study
I067	Verification Methods Matrix
I070	Mound Site TRU Waste Data Preliminary TRUPACT II Transportation Compliance Evaluation
I072	1 S SRS Waste Acceptance Criteria Manual
I074	Container Approval Requests and Deviations for Shipments
I081	Material Type Codes
I082	Tables of TRU waste packages
I083	A-Line gloveboxes - Summary of characterization data
I084	Waste Category - TRU Boxes
I086	TRU Waste Box 558
I090	Operable Unit 9, Site Scoping Report: Volume 7 – Waste Management
I092	Go West Data Base From SRS
M001	Mound Site [Miamisburg] - United States Nuclear Forces Web Site- www.globalsecurity.org/wmd/facility/mound.htm
M002	Chemical Compatibility and Material List Data Requirements for TRUPACTII Authorized Payload Compliance Plan
M003	TRUPACT-II Shipment of Mound Pu-239 Material
M004	"Summary Report on Mound Boxes," E-mail to KellyCR@wipp.carlsbad.nm.us [Clint Kelley]
M006	Memo From DOE Ohio Field Office to EPA-Mr. Tony Martig, Re: PCBs in Oil

Source Document Number	Title
M012	Facsimile Transmittal to Glenn Siry, Re: Mound Facility-Background Volume STP FY00 Update
M014	Interview Notes
M015	Letter to R. L Wainwright, Area Manager, U. S. AEC, Re: Program to Reduce the Generation of Transuranium (TRU) Contaminated Solid Waste
M016	Letter to J.L. Hebb, Re: Status of Pu Waste and TRU Implementation
M017	E-mail to HERTFR@doe-md.gov, Re: Emailing: space-desc [Office of Space and Defense Power System]
M018	Letter to W.W. Hickman, Waste Management Manager, Aerojet Nuclear Co., Re: Shipment of Mound Laboratory's TRU Waste to the NRTS for Retrievable Storage
M025	Notes from a draft document [title not given]
M027	Mound Laboratory-Classified Document, Summary ADC Unclassified 4/1/03, Defense Processes at Mound
M029	Memo to W.P. Davis and T.C. Elswick, Re: SAND Boxes
M031	List of sources of TRU waste from Main-Hill Tritium (MHT) project
M034	Memo on 3 subjects 1) Use of Insta-Foam Froth Pak, 2) Equipment Removal, 3) Use of the Cardboard Liner in the FRP Box
M036	Specification Drum 55 gal. DOT-17C
M037	Change Notice of Offsite Packaging Criteria (IDO-10074) for Revised Metal Container Painting Requirements-RHB-263-81
M038	Specification- Drum 30 gal. DOT-17H, WMP-572005
M039	Specification-Container, Waste: DOT 7A Steel Box (MIII Bin), WMP-572010
M040	Letter to D.A. Edling, Re: "Idaho TRU Waste Criteria" with attached Letter to H.N. Hill and D. Ofte, Area Manages, DOE Dayton and Rocky Flat Area Offices, Re: "Revision of the Off-Site Packaging Criteria for Receipt of TRU Waste at the INEL RWMC
M041	Letter to R. K. Blauvelt, Re: "Change Notice of Offsite Packaging Criteria Report IDO-10074-RMS-61-81" and attached "Specification Sponge Rubber Gasket DOT 17C 55-Gallon Drum"
M042	Current Scope of Activities at Mound (a presentation)
M043	Letter to B.G. Twinning, Manager, AL, Re: Mound TRU Waste Shipments to INEL
M044	E-mail to DOE_OH.MOUND.Church Ronald, Re: Process Knowledge for Old SD Project
M052	E-mail to COLVRL, Re: Contaminated Precious Metals
M054	Letter to J.P. Hamric, Director, Nuclear Fuel Cycle Div. ID, Re: Packaging Criteria for TRU Waste Shipments to INEL
M055	Memorandum to D. Agnew, et. al., Re: WTS Line Removal Problems/Suggestions
M059	Mound MDL Numbers
M060	Request for Deviation to SRS Waste Acceptance Criteria Manual
M061	Sample and Analysis Plan-West Asphalt (SM/PP Hill) and Additional Documentation (See Document Summary for Additional Documentation Titles)
M062	R and SW Buildings Sampling & Analysis Plan, and Additional Documentation (See Document Summary for Additional Document Titles)
M063	Straight Bill of Lading. Shipper: U.S. DOE, c/o CH2M Hill Mound, Inc.
M064	E-mail Correspondence (and attached RTR data) from Steve Rose to Jeff Harrison. Subject: SR-MD-SOIL
M065	Evaluation of Additional Containers for SRS-8 Waste Stream SR-MD-HET (Mound)
M076	Waste Stream Profile Form for IN-W174.1082, IN-W174.154, IN-W177.1083, IN-W177.156
M077	NDA Weight Percent Data Through Lot 3, SR-MD-SOIL
M078	Mound Radiological Data Dump from the SRS GoWest Database dated 07/08/2005
M079	Radiological Re-evaluation Data Analysis for SR-MD-SOIL

Source Document Number	Title
M080	Discrepancy Report D047A - Assessment Of Hazardous Waste Numbers Assigned To BN304 Waste Stream Profile, Mound Debris Stream
P001	Alpha Fuels Environmental Test Facility (Day 59)
P013	Assessment of the AWC TRU Clean Process for use on Mound Soils and Sediments
P015	Tools for Decontamination and Decommissioning of Nuclear Facilities
P016	Mound's Decommissioning Experience, Tooling, and Techniques
P017	The Mound Site Survey Project for the Characterization of Radioactive Materials in the Site Soils
P018	Reinvestigation of the January 1969 Plutonium-238 Waste Transfer Line Break
P020	Characterization of Mounds Hazardous, Radioactive, and Mixed Waste
P021	Separation and Purification of Radioisotopes for Research
P023	Mound Facility Physical Characterization
P027	EG&G Mound Building 38 Accident Analysis of Internal (Operational) Events (Results and Findings)
P028	Mound Building 38 FSAR: Pu-239 Repackaging, Phase 1
P029	Building 50 Radioisotopic Thermoelectric Generator Assembly and Testing Facility Final Safety Analysis Report
P030	SW/R Complex Basis for Interim Operations
P034	Estimated Discard Limits for Plutonium-238 Recovery Processing in the Plutonium Processing Building
P036	Hazard Evaluation of the Special Metallurgical (SM) Building at Mound Laboratory
P037	Building WDA, Room 10 Glovebox Removal Wall Removal, Characterization, and Cleanup
P040	Executive Summary of TRU Waste at Mound
P041	Technical Manual. TRU Waste Management
P044	FSAR Building 38 *******UCNI*******
P045	Waste Disposal Facility Auditable Safety Analysis
P048	Vent TRU Drums in CWPF
P049	TRU Drum Venting Fact Sheet and TRU Drum Venting System Pre-Operational Process Hazards Review
P050	TRU Waste Drum Venting and Purging System
P051	The Use of Urethane Foam in the Decontamination and Decommissioning of Nuclear Facilities
P053	Ten Year Plan for Decontamination and Decommissioning for Mound
P054	Mound Site Radionuclides by Location Issue 1-3
P055	A Summary Review of Mound Laboratories Experience in D&D of Radioactive Facilities
P056	Decontamination and Decommissioning Projects Findings of No Significant Impact
P057	D&D Operations Procedures
P058	Mound Site Waste Management Reports and Site Plans 1977-1980
P061	Siting Criteria Document
P063	Mound Site Waste Management Reports and Site Plans 1972 to 1976
P064	Mound Site Waste Management Reports and Site Plans 1981 to 1989
P065	Mound WIPP Certification Program for Newly Generated Contact Handled (CH) Transuranic Waste
P066	Maps Site Plans
P067	Revised U-233 Re-Pack Project
P070	Mound Laboratory Annual Report CY 1974
P072	Final Safety Analysis Report for the SW/R Tritium Complex
P073	On Site Transportation and Handling of Radioactive and Hazardous Materials
P076	USERS Handbook: Waste Accountability Shipping and Packaging (issue 14 is inactive).
P078	Mound Plant Waste Acceptance Criteria

Source Document Number	Title
P079	Management of Hazardous Waste, Radioactive Mixed Waste, Trash and Recyclable Metals
P081	Approved Site Treatment Plan for Mixed Wastes at the Mound Facility
P086	Mound Laboratory Environmental Plutonium Study
P095	List and directory of chemicals and MSDS sheets
P096	1996 and 1998 Chemical Inventory and 1991 Carcinogen list
P097	An Early History of U.S. Radioisotope Thermoelectric Generators
P098	Verification Reports
P099	WD Soil Removal Project
P100	Mound Quality Control Plan for the Control of Radioactive Waste
P105	Revision of the Off-Site Packaging Criteria for Receipt of Transuranic Waste at the INEL RWMC
P109	US Department of Transportation Exemption for the ATMX Railcar
P111	Site Treatment Plan for the Mixed Wastes at the Mound Facility Miamisburg, Ohio, Background and Plan Volumes
P115	1st 8 Shipments of Uniform Hazardous Waste Manifest
P116	Nuclear Power in Space
P117	Radioactive Waste Procedures-Loading/Sealing Transuranic Waste Destined for SRS in Boxes
P120	Radioactive Waste Procedures-Loading/Sealing Transuranic Waste Destined for SRS in Drums
P121	SRS Waste Acceptance Criteria Manual, 1S, E-Area TRU Pads Transuranic Waste Acceptance Criteria
P122	Acceptable Knowledge Summary for Solidified Acid/Caustic Waste (BN835)
P123	Acceptable Knowledge Document for INL Stored Transuranic Waste – Mound Plant Waste
P124	Absorbing Containerized Liquids
P125	Shipment Preparation for TRU Containers to SWMF
P126	Absorbing Containerized Liquids
P127	Transuranic (TRU) Waste Repackaging in H-Canyon
P128	F Canyon Container Transfer
P129	Standard Waste Box Operations
U001	2990 Information on Shipments to SRS
U002	Trash Categories/Content Codes and Waste Categories
U003	List of Chemicals and Materials in TRU Waste Content Codes
U007	Content Code Assessments for INEL Contact Handled Stored TRU Waste
U015	Memorandum to E.L. Albenesius, Re: Description of Mound and LASL Sold ^{238}Pu Waste Stored at SRP
U018	UGL Action Memo-Removal Action of Soil & Underground Waste Transfer Lines Leading to WD Building
U019	Waste Management Instruction-Packaging of Highly Contaminated Soil from PRS 438
U020	2990 Information for Additional Containers