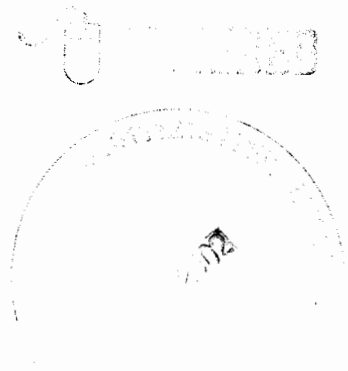




Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221
August 8, 2002



Mr. Steve Zappe
Hazardous Waste Permits Program
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
2905 E. Rodeo Park Drive, Bldg. 1
Santa Fe, NM 87505

Subject: Transmittal of Approved Waste Stream Profile Form for Rocky Flats
Environmental Technology Site, Waste Stream Profile Form Number
RF101.30

Dear Mr. Zappe:

The Department of Energy, Carlsbad Field Office (CBFO) has approved the Rocky Flats Environmental Technology Site (RFETS), Waste Stream Profile Form RF101.30. Enclosed is a copy of the approved form as required by Section B-4(b)(1) of the WIPP Hazardous Waste Facility Permit No. NM4890139088-TSDF.

If you have any questions on this matter, please contact me at (505) 234-7357 or (505) 361-0265.

Sincerely,

Kerry W. Watson
CBFO Assistant Manager
Office of National TRU Program

Enclosure

cc: w/o enclosure
J. Kieling, NMED
C. Walker, TechLaw
J. Bennett, WTS
P. Roush, WTS
L. Greene, WTS
S. Calvert, CTAC
CBFO Mailroom



Waste Stream Profile Number: RF101.30

Generator site name: RFETS

Technical contact: Eric D'Amico

Generator site EPA ID: CO7890010526

Phone number: (303) 966-5362

Date of audit report approval by NMED: March 9, 2000 as amended February 7, 2001, June 5, 2001 and April 8, 2002

Title, version number, and date of documents used for WAP certification: Rocky Flats Environmental Technology Site TRU Waste Characterization Program Quality Assurance Project Plan, 95-QAPjP-0050, Revision 6, March 2002.

Transuranic (TRU) Waste Management Manual, Revision 5, 1-MAN-008-WM-001, May 2002. Contact-Handled

Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant, Revision 0, May 2002.

Did your facility generate this waste? Yes No If no, provide the name and EPA ID of the original generator:

Waste Stream Information⁽¹⁾

WIPP ID: RF101.30⁽³⁾

Summary Category Group: S5000⁽³⁾ Waste Matrix Code Group: Combustible Wastes⁽³⁾

Waste Stream Name: TRM Combustible and Plastic Wastes (F001, F002)⁽³⁾

Description from the WTWBIR: Cloth, paper, cellulosic and plastic debris material generated from plutonium operations/activities with assigned EPA hazardous waste numbers F001 and F002⁽³⁾

Defense TRU Waste: Yes No

Check one: CH RH Number of SWBs 6 Number of Drums 557 Number of Canisters N/A

Batch Data Report numbers supporting this waste stream characterization: See Table 7.

List applicable EPA Hazardous Waste Codes⁽²⁾: F001, F002

Applicable TRUCON Content Codes: RF 116A, RF 116C, RF 116D, RF 116DF, RF 116E, RF 116EF, RF 116F, RF 116G, RF 116GF, RF 116H, RF 116I, RF 116J, RF 116K, RF 116KF, RF 116L, RF 116M, RF 116MF, RF 116N, RF 116P, RF 116PF, RF 116Q, RF 116R, RF 116RF, RF 116S, RF 116SF, RF 116T

Acceptable Knowledge Information⁽¹⁾

Required Program Information

- * Map of site: Reference List, No. 3
- * Facility mission description: Reference List, No. 3
- * Description of operations that generate waste: Reference List, Nos. 1, 2, 3, 6
- * Waste identification/categorization schemes: Reference List, Nos. 8, 9
- * Types and quantities of waste generated: Reference List, Nos. 1, 2, 3, 6
- * Correlation of waste streams generated from the same building and process, as appropriate: Reference List, Nos. 1, 2, 6
- * Waste certification procedures: Reference List, No. 5

Required Waste Stream Information

- * Area(s) and building(s) from which the waste stream was generated: Reference List, Nos. 1, 2, 6
- * Waste stream volume and time period of generation: Reference List, Nos. 4, 6
- * Waste generating process description for each building: Reference List, Nos. 1, 2, 6
- * Process flow diagrams: Reference List, Nos. 1, 2
- * Material inputs or other information identifying chemical/radionuclide content and physical waste form: Reference List, Nos. 1, 2, 3, 6

Which Defense Activity generated the waste: (Check one) Reference List, No. 3

- 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
- Defense nuclear materials production
- Defense nuclear waste and materials security and safeguards and security investigations

Reviewed For Classification/UCNI
 By V.S. SENDELWICK
 Date 31 JUL 02 (MNY)
 OK PUBLIC

Supplemental Documentation:

- Process design documents: Note 4
- Standard operating procedures: Note 4
- Safety Analysis Reports: Note 4
- Waste packaging logs: Note 4
- Test plans/research project reports: Note 4
- Site data bases: Note 4
- Information from site personnel: Note 4
- Standard industry documents: Note 4
- Previous analytical data: Note 4
- Material safety data sheets: Note 4
- Sampling and analysis data from comparable/surrogate waste: Note 4
- Laboratory notebooks: Note 4

Sampling and Analysis Information⁽¹⁾

[For the following, when applicable, enter procedure title(s), number(s) and date(s)]

- Radiography: Reference List Nos. 15, 16
- Visual Examination: 11, 12, 13, 14
- Headspace Gas Analysis
 - VOCs: Reference List, No. 7, 17
 - Flammable: Reference List, No. 7, 17
 - Other gases (specify): N/A
- Homogeneous Solids/Soils/Gravel Sample Analysis (Tables 1, 3, 4, and 5 are not applicable and not included)
 - Total metals: N/A
 - PCBs: N/A
 - VOCs: N/A
 - Nonhalogenated VOCs: N/A
 - Semi-VOCs: N/A
 - Other (specify): N/A

Waste Stream Profile Form certification:

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


Signature of Site Project Manager

G. A. O'Leary, Manager TRU Programs
Printed Name and Title

7/31/02
Date


Signature of Site QA Officer

C. L. Ferrera, TWCP Site QAO
Printed Name and Title

7/31/02
Date

- NOTE**
- (1) Use back of sheet or continuation sheets, if required.
 - (2) EPA Hazardous Waste Codes were determined using acceptable knowledge and confirmed using headspace gas sampling and analysis (see attached Characterization Information Summary documenting this determination).
 - (3) The waste stream is not specifically identified in the WTWBIR. The WIPP ID assigned corresponds to the Waste Stream Profile Number. The Summary Category Group, Waste Matrix Code Group and Description from the WTWBIR provided are based on acceptable knowledge (see attached AK Summary).
 - (4) See the References section in the Acceptable Knowledge Summary (attached) for additional backup documentation associated with this waste stream.

REFERENCE LIST

1. Backlog Waste Reassessment Baseline Book, Waste Form 52, Combustibles, June 2002.
2. Waste Stream and Residue Identification and Characterization (WSRIC), Revision 7, and archived versions.
3. RFETS TRU Waste Acceptable Knowledge Supplemental Information, RF/RMRS-97-018, Revision 9, June 2001.
4. Waste and Environmental Management System (WEMS) database.
5. Transuranic Waste Certification, PRO-X05-WC-4018, Revision 4, May 2002.
6. Acceptable Knowledge TRU/TRM Waste Stream Summaries, RMRS-WIPP-98-100, Revision 15, July 2002.
7. GC/MS Determination of Volatile Organics Waste Characterization, L-4111-X, January 2002.
8. Waste Characterization, Generation, and Packaging, 1-PRO-079-WGI-001, Revision 3, December 2000.
9. Waste Characterization Program Manual, 1-MAN-036-EWQA-Section 1.6.1, Revision 2, September 2000.
10. Interoffice Memorandum from Thomas R. Galliffe to Eric L. D'Amico, Headspace Gas Analysis Data Evaluation Report For The Confirmation of EPA Hazardous Waste Numbers Using Headspace Gas Analytical Results For Waste Stream Profile Number RF101.30 Lot 1, TRG-006-02, February 2002.
11. Visual Examination for Confirmation of RTR, 4-H80-776-ASRF-007, Revision 5, June 2001.
12. Combustible Residue Repackaging, PRO-823-REPACK-371, Revision 1, March 2001.
13. Residue Repack, Building 371, PRO-544-SALT REPACK-371, Revision 5, January 2002.
14. TRU/TRM Waste Visual Verification (V^2) and Data Review, PRO-1031-WIPP-1112, Revision 0, September 2001.
15. Real-Time Radiography Testing of Transuranic and Low-Level Waste, 4-W30-NDT-00664, Revision 5, October 2001.
16. Real-Time Radiography Testing of Transuranic and Low-Level Waste in Building 569, 4-I19-NDT-00569, Revision 6, January 2002.
17. Headspace Gas Sampling And Analysis Using An Automated Manifold, L-4231-F, March 2002.

Form A
Reconciliation with Data Quality Objectives

I certify by signature (below) that sufficient data have been collected to determine the following Program-required waste parameters:

WSPF # RF101.30

Item	Check Box ^a	Reconciliation Parameter
1	✓	Waste Matrix Code as reported in WEMS.
2	✓	Waste Material Parameter Weights for individual containers as reported in WEMS.
3	✓	The waste matrix code identified is consistent with the type of sampling and analysis used to characterize the waste.
4	✓	Container mass and activities of each radionuclide of concern as reported in WEMS.
5	✓	Each waste container of waste contains TRU radioactive waste.
6	✓	Mean concentrations, UCL ₉₀ for the mean concentrations, standard deviations, and the number of samples collected for each VOC in the headspace gas of waste containers in the waste stream/waste stream lot.
7	N/A	Mean concentrations, UCL ₉₀ for the mean concentrations, standard deviations, and number of samples collected for VOCs in the waste stream/waste stream lot. Summary Categories S3000 and S4000.
8	N/A	Mean concentrations, UCL ₉₀ for the mean concentrations, standard deviations, number of samples collected for SVOCs in the waste stream/waste stream lot. Summary Categories S3000 and S4000.
9	N/A	Mean concentrations, UCL ₉₀ for the mean concentrations, standard deviations, and number of samples collected for metals in the waste stream/waste stream lot. Summary Categories S3000 and S4000.
10	N/A	Sufficient number of samples was taken to meet statistical sampling requirements.
11	✓	Only validated data were used in the above calculations, as documented through the site data review and validation forms and process.
12	✓	Waste containers were selected randomly for sampling, as documented in site procedures.
13	✓	The potential flammability of TRU waste headspace gases.
14	✓	Sufficient number of waste containers was visually examined to determine with a reasonable level of certainty that the UCL ₉₀ for the miscertification rate is less than 14 percent.
15	✓	Whether the waste stream exhibits a toxicity characteristic (TC) under 40 CFR Part 261, Subpart C.
16	✓	All TICs were appropriately identified and reported in accordance with the requirements of the WIPP WAP prior to submittal of a waste stream profile form for a waste stream or waste stream lot.
17	✓	The overall completeness, comparability, and representativeness QAOs were met for each of the analytical and testing procedures as specified in the WIPP WAP Sections B3-2 through B3-9 prior to submittal of a waste stream profile form for a waste stream or waste stream lot.
18	✓	The RTLs (i.e., PRQLs) for all analyses were met prior to submittal of a waste stream profile form for a waste stream or waste stream lot.
19	✓	Whether the waste stream can be classified as hazardous or non-hazardous at the 90-percent confidence limit.

^a Check (✓) indicates that data or acceptable knowledge are sufficient to determine the waste parameters and that the waste parameters have been reported in the listed document or database. N/A indicates parameter does not apply to waste stream. NO indicates data are insufficient.


Signature of Site Project Manager

G. A. O'Leary
Printed Name

7/31/02
Date

Data Summary Report—Table 2: Headspace Gas Summary Data

WSPF # RF101.30

Sampling and Analysis Method (check one):

 100% Sampling Reduced Sampling

2A

ANALYTE ¹	# Samples ^b	Mean ^a (ppmv)	SD ^a (ppmv)	UCL ₉₀ ^a (ppmv)	RTL ^c (ppmv)	EPA Code ²
1,1-Dichloroethane	7	1.27	3.15	1.89	NA	
1,2-Dichloroethane	5	0.37	0.58	0.48	10	
1,1-Dichloroethylene	8	3.65	10.12	5.68	10	
cis-1,2-Dichloroethylene	2	0.19	0.10	0.21	NA	
1,1,2,2-Tetrachloroethane					10	
1,1,1-Trichloroethane	21	817.41	2110.20	1231.46	10	F001,F002
1,1,2-Trichloro-1,2,2-Trifluoroethane	9	67.63	232.41	113.22	10	F001,F002
1,2,4-Trimethylbenzene	1	0.18	0.09	0.20	NA	
1,3,5-Trimethylbenzene					NA	
Acetone	20	7.59	8.49	9.26	100	
Benzene	5	1.08	2.69	1.61	10	
Bromoform					NA	
Butanol	2	6.22	5.76	7.35	100	
Carbon disulfide	20	4.61	9.74	6.52	10	
Carbon tetrachloride	23	2263.18	7606.16	3755.63	10	F001
Chlorobenzene					10	
Chloroform	11	3.03	9.46	4.93	10	
Cyclohexane	4	0.45	1.48	0.74	NA	
Ethyl benzene	2	0.22	0.25	0.27	10	
Ethyl ether					100	
Methanol	6	10.9	12.0	13.23	100	
Methyl ethyl ketone	5	2.24	1.50	2.53	100	
Methyl isobutyl ketone					100	
Methylene chloride	6	0.59	0.88	0.76	10	
o-Xylene	2	0.24	0.35	0.31	10	
m,p-Xylene	2	0.39	0.97	0.58	10	
Tetrachloroethylene	4	0.55	2.09	0.96	10	
Toluene	38	14.1	17.1	17.45	72.02 ^d	
Trichloroethylene	8	0.99	2.42	1.47	10	

Data Summary Report—Table 2: Headspace Gas Summary Data (continued)

WSPF # RF101.30

2B

TENTATIVELY IDENTIFIED COMPOUND	Maximum Observed Estimated Concentrations (ppmv) ^b	# Samples Containing TIC ^b
No TICs included in the 40 CFR 261 Appendix VIII list were detected in at least 25 percent of the headspace gas samples for the waste stream lot.		

Did the data verify the acceptable knowledge? Yes No

Data as reported in Data Summary Report – Table 2 confirm acceptable knowledge in that no additional EPA codes, other than those assigned by acceptable knowledge, are applicable.

If not, describe the basis for assigning the EPA Hazardous Waste Codes:

NOTES:

- ^a No entry indicates no associated EPA Code assigned to the waste stream based on headspace analysis.
- ^b A total of 44 samples were collected and analyzed. Analysis was performed for all analytes identified unless otherwise noted. No entry indicates no detectable measurements available for statistics. Samples were not composited.
- ^c RTLs for headspace gas analysis results correspond to the analyte PRQL for analytes that are hazardous waste constituents. "NA" means the analyte is not a hazardous waste constituent and so has no associated regulatory threshold.
- ^d Limit used for evaluating EPA Hazardous Waste Code for toluene (Reference No. 3).
- ^e Statistics based on using 1/2 MDL for less-than-detectable observations without data transformation.
- ^f Headspace sampling and analysis was conducted prior to the addition of (trans)-1,2-dichloroethylene to the target analyte list.

**Data Summary Report—Table 6: Exclusion of
Prohibited Items****WSPF # RF101.30**

The absence of prohibited items is documented through acceptable knowledge. Radiography or visual examination is performed on each container in this waste stream to verify the absence of the following prohibited items:

- Liquids
- Non-radionuclide pyrophoric materials
- Waste incompatible with backfill, seal and panel closure materials, container and packaging materials, shipping container materials, or other wastes
- Explosives or compressed gases
- PCBs in concentrations greater than or equal to 50 ppm
- Waste exhibiting the characteristics of ignitability, corrosivity or reactivity
- Non-mixed hazardous wastes

Data Summary Report—Table 7: Correlation
 of Container Identification to Batch Data Reports

WSPF # RF101.30

Package No. ^a	Radioassay Data Package	Headspace Sample Batch No.	Headspace VOC Data Package	RTR Data Package
D65213	CIQ-97-015	01W0219	HVOC-DP-00547	6T-2014
D66099	CPN-97-007	01W0198	HVOC-DP-00524	6T-2015
D66298	CIQ-97-009	01W0224	HVOC-DP-00553	6T-2033
D67054	CIQ-97-007	01W0197	HVOC-DP-00523	6T-2015
D67057	CIQ-97-009	01W0224	HVOC-DP-00553	6T-2033
D67707	CIQ-97-019	01W0217	HVOC-DP-00546	6T-2012
D68072	CIQ-97-009	01W0156	HVOC-DP-00485	6T-2002
D68077	CIQ-97-023	01W0141	HVOC-DP-00469	6T-2020
D68379	CIQ-97-019	01W0219	HVOC-DP-00548	6T-2005
D68382	CPN-97-004	01W0195	HVOC-DP-00521	6T-2032
D68640	CIQ-97-003	01W0139	HVOC-DP-00468	6T-2015
D68740	CIQ-97-002	01W0153	HVOC-DP-00482	6T-2020
D68805	CIQ-97-020	01W0139	HVOC-DP-00468	6T-2003
D68807	CIQ-97-009	01W0159	HVOC-DP-00488	6T-2006
D68811	CIQ-97-006	01W0154	HVOC-DP-00483	6T-2011
D68821	CIQ-97-020	01W0159	HVOC-DP-00488	6T-2010
D68879	CIQ-97-023	01W0147	HVOC-DP-00476	6T-2010
D69074	CIQ-97-020	01W0124	HVOC-DP-00458	6T-1799
D70077	CPN-99-013	01W0139	HVOC-DP-00468	6T-1857
D70697	CIQ-97-008	01W0156	HVOC-DP-00485	6T-2005
D71260	CIQ-97-002	01W0198	HVOC-DP-00524	6T-2015
D72088	CIQ-97-008	01W0156	HVOC-DP-00485	6T-2006
D72090	CIQ-97-010	01W0224	HVOC-DP-00554	6T-2010
D72600	CIQ-97-006	01W0184	HVOC-DP-00511	6T-1867
D72601	CIQ-01-056	01W0162	HVOC-DP-00491	6T-1886
D72610	CIQ-97-008	01W0156	HVOC-DP-00485	6T-2007
D73772	CIQ-97-012	01W0156	HVOC-DP-00485	6T-2004
D74029	CIQ-97-007	01W0170	HVOC-DP-00499	6T-2019
D74544	CIQ-97-008	01W0156	HVOC-DP-00485	6T-2005
D74717	CIQ-01-053	01W0148	HVOC-DP-00477	6T-1884
D75605	CIQ-97-002	01W0141	HVOC-DP-00469	6T-2015
D76071	CPN-97-007	01W0170	HVOC-DP-00499	6T-2007
D80772	CIQ-01-055	01W0161	HVOC-DP-00490	6T-1865
D91369	CIQ-00-008	01W0161	HVOC-DP-00490	6T-1622
D91498	CIQ-01-059	01W0181	HVOC-DP-00508	6T-1865
D93712	CIQ-01-057	01W0181	HVOC-DP-00508	6T-1865
D93716	CIQ-01-051	01W0146	HVOC-DP-00475	6T-2006
D93723	CIQ-01-052	01W0151	HVOC-DP-00480	6T-2034
D96032	CIQ-01-048	01W0125	HVOC-DP-00457	6T-1800
D96051	CIQ-99-034	01W0161	HVOC-DP-00490	6T-2006
DA1172	CPN-01-004	01W0128	HVOC-DP-00458	6T-1668

**Data Summary Report—Table 7: Correlation
of Container Identification to Batch Data Reports (continued)**

WSPF # RF101.30

Package No. ^a	Radioassay Data Package	Headspace Sample Batch No.	Headspace VOC Data Package	RTR Data Package
DA3656	CPN-01-005	01W0133	HVOC-DP-00459	6T-1668
DA3659	CPN-01-005	01W0133	HVOC-DP-00459	6T-1669
DA4020	CPN-01-039	01W0176	HVOC-DP-00503	6T-1861

NOTES:

^a Radiography was performed on all of the containers identified here. All of the containers were candidates for visual examination for confirmation of radiography, however, none were selected.

Acceptable Knowledge Summary

WSPF # RF101.30

RMRS-WIPP-98-100, Acceptable Knowledge TRU/TRM Waste Stream Summaries, Section 7.4, TRM Combustible and Plastic Wastes (F001, F002) (attached).



Rocky Flats Environmental Technology Site

ACCEPTABLE KNOWLEDGE INFORMATION

**ACCEPTABLE KNOWLEDGE TRU/TRM
WASTE STREAM SUMMARIES**

RMRS-WIPP-98-100

Section 7.4

TRM Combustible and Plastic Wastes (F001, F002)

Profile No. RF101.30

Revision 15

Reviewed for Classification/UCNI
By: Unclassified Not UCNI
Reference Exemption Number CEX-032-00
Date: September 11, 2000

Approval signatures in Site Document Control history file

7.4 TRM Combustible and Plastic Wastes (F001, F002)

Profile No. RF101.30

Acceptable Knowledge Waste Stream Summary

Waste Stream Name: TRM Combustible and Plastic Wastes (F001, F002)

Generation Buildings: Buildings 371, 559, 707, 771, 774, 776, and 777^(5,13)

Waste Stream Volume (Retrievably Stored): 518 55-gallon drums^(5,13)

Generation Dates (Retrievably Stored): May 1987 – January 2002^(5,13)

Waste Stream Volume (Newly Generated): 3 55-gallon drums^(5,13)

Generation Dates (Newly Generated): October 2001 – January 2002^(5,13)

Waste Stream Volume (Projected): 36 55-gallon drums and 6 Standard Waste Boxes⁽⁶⁾

Generation Dates (Projected): February 2002 – September 2002⁽⁶⁾

TRUCON Content Codes⁽¹⁾: RF 116A, RF 116C, RF 116D, RF 116DF, RF 116E, RF 116EF, RF 116F, RF 116G, RF 116GF, RF 116H, RF 116I, RF 116J, RF 116K, RF 116KF, RF 116L, RF 116M, RF 116MF, RF 116N, RF 116P, RF 116PF, RF 116Q, RF 116R, RF 116RF, RF 116S, RF 116SF, RF 116T

7.4.1 Transuranic Waste Baseline Inventory Report Information⁽²⁾

WIPP Identification Numbers: RF101.30

Summary Category Group: S5000 Waste Matrix Code Group: Combustible Waste

Waste Matrix Code: S5390

Waste Stream Name: TRM Combustible and Plastic Wastes (F001, F002)

Description from the TWBIR: Cloth, paper, cellulosic, and plastic debris material generated from plutonium operations/activities with assigned EPA Hazardous Waste Numbers F001 and F002.

NOTE: This waste stream is not identified in the TWBIR. The WIPP ID assigned corresponds to the Waste Stream Profile Number. The Summary Category Group, Waste Matrix Code Group, and Waste Matrix Code are based on acceptable knowledge as provided in Section 7.4.2.

7.4.2 Waste Stream Description

Transuranic mixed (TRM) combustible and plastic wastes assigned EPA Hazardous Waste Numbers F001 and F002 consist of dry combustibles, wet combustibles, and plastic. In accordance with Attachment B4 of the WAP, this waste stream is assigned Summary Category Group S5000 and Waste Matrix Code Group *Combustible Waste*. Table 7.4-1 presents the waste matrix codes and waste material parameters for combustible and plastic wastes.⁽³⁾

Table 7.4-1, Combustible and Plastic Waste (F001 and F002) Description

IDC	IDC Description	Waste Matrix Code	Waste Material Parameters	Weight % (Average)
330	Dry Combustibles	S5390, Unknown/	Cellulosics ¹	85%
821	Dry Combustibles, TRU Waste	Other Organic Debris	Plastics ²	10%
831	Dry Combustibles, TRM Waste		Iron-based Metal/Alloys	4%
			Other Inorganic Materials	1%
336	Wet Combustibles	S5390, Unknown/	Cellulosics ¹	85%
822	Wet Combustibles, TRU Waste	Other Organic Debris	Plastics ²	11%
832	Wet Combustibles, TRM Waste		Iron-based Metal/Alloys	2%
			Rubber	1%
			Aluminum-based Metal/Alloys	1%
337	Plastic	S5390, Unknown/	Plastics ²	95%
825	Plastic, TRU Waste	Other Organic Debris	Cellulosics ¹	3%
833	Plastic, TRM Waste		Iron-based Metal/Alloys	1%
			Other Inorganic Materials	1%

Notes:

1. The average weight percent of cellulosic materials is based on RTR and includes the fiberboard liner.
2. The average weight percent of plastic materials is based on RTR and includes plastic liner bags.

IDC 330, Dry Combustibles: Dry combustibles such as cloth, paper, and wood. Dry combustibles are assigned IDC 330 at the point of generation and may change to IDC 821 or 831 following radioassay to designate them as being TRU waste or TRM waste. Some containers in this waste stream may be assigned IDC 821 because F-listed solvent VOCs were detected in the headspace gas but are being managed as non-mixed waste until the waste is ready for off-site shipment at which point the EPA hazardous waste numbers are applied (refer to Section 7.4.5). RTR inspection of containers assigned these IDCs have identified significant amounts of plastic materials. Containers with more than 50% plastic, by weight, are reassigned the appropriate plastic IDC.⁽⁴⁾

IDC 336, Wet Combustibles: Wet combustibles such as paper, cloth, and wood that contain a discernible amount of moisture. The wastes are drained or wrung out before packaging to prevent accumulation of free liquid. Wet combustibles are assigned IDC 336 at the point of generation and may change to IDC 822 or 832 following radioassay to designate them as being

TRU waste or TRM waste. Some containers in this waste stream may be assigned IDC 822 because F-listed solvent VOCs were detected in the headspace gas but are being managed as non-mixed waste until the waste is ready for off-site shipment at which point the EPA hazardous waste numbers are applied (refer to Section 7.4.5). RTR inspection of containers assigned this IDC has identified significant amounts of plastic materials. Containers with more than 50% plastic, by weight, are reassigned the appropriate plastic IDC.⁽⁴⁾

IDC 337, Plastic: Plastics may include polyvinyl chloride (PVC) sheeting, poly bottles, supplied air suits, polyethylene, and other plastics. Plastics are assigned IDC 337 at the point of generation and may change to IDC 825 or 833 following radioassay to designate them as being TRU waste or TRM waste. Some containers in this waste stream may be assigned IDC 825 because F-listed solvent VOCs were detected in the headspace gas but are being managed as non-mixed waste until the waste is ready for off-site shipment at which point the EPA hazardous waste numbers are applied (refer to Section 7.4.5). This IDC includes containers originally assigned combustibles IDCs that were reassigned because RTR inspection of the containers identified more than 50% plastic, by weight.⁽⁴⁾

7.4.3 Areas of Operation

TRM combustible and plastic wastes assigned EPA Hazardous Waste Numbers F001 and F002 are generated by the following defense operations in Buildings 371, 559, 707, 771, 774, 776, and 777.^(3,4,5)

- Plutonium Production
- Plutonium Recovery
- Laboratory Operations
- Research and Development
- Maintenance and Utilities
- Waste and Residue Repackaging and Treatment

7.4.4 Generation Processes

Combustible and plastic wastes assigned EPA Hazardous Waste Numbers F001 and F002 were generated by numerous operations on site. Table 7.4-2 provides the title of each generating process along with the corresponding WSRIC building and process number. A description of each of these processes, process flow diagrams, and details of each combustible and plastic process stream can be found in the *WSRIC Building Books, archived WSRIC files, and BWR Baseline Book*.^(4,7,8,9,10,11,12)

Table 7.4-2, Combustible and Plastic Waste (F001 and F002) Generation Processes

Building	Process	Title
<i>Building 371</i>		
371	4	Analytical Laboratory
371	5	Chemical Standards Laboratory
371	6	Process Vacuum System
371	7	Process Vent Scrubber System
371	8	Utility Scrubber System
371	20	Organic Contaminated Residue Treatment
371	24	Box N Go Project
<i>Building 559</i>		
559	3	X-Ray Fluorescence
559	5	GC/MS Environmental Samples/RCRA Waste
559	6	Thermal Analysis
559	9	Isotopic Analysis
559	12	Uranium Analysis
559	13	Gallium Analysis
559	14	Plutonium Assay
559	15	Carbon Analysis
559	16	Raschig Ring Analysis
559	17	Coulometric Titration
559	18	Nonroutine Iron and Silicon Analysis in Plutonium Metal
559	19	Nonroutine Ion Chromatograph
559	20	Nonroutine Plutonium Oxide Analysis
559	21	Nonroutine Uranium Analysis
559	22	Specific Ion Electrode Analysis
559	23	Sample Receiving
559	24	Sample Break In and Sample Cutting
559	25	Maintenance
559	26	Utilities
559	28	ICP Spectroscopy
559	31	GC Environmental Samples/RCRA Waste
559	33	Boron Oxide in Raschig Rings by Titration
559	42	Cyanide Analysis
559	44	Reactivity Characterization of Pyrochemical Salts
559	48	Ion Chromatography
559	49	Radiochemical Operations
559	50	Particle Size Distribution
<i>Building 707</i>		
707	1	Foundry Operations - Module A
707	2	Casting - Module K/X-Y Retriever
707	3	Module J
707	4	Rolling/Forming - Module B
707	6	Machining--Module A
707	7	Machining--Module C
707	12	Density Balance - Module C
707	13	Grit Blasting
707	14	Assembly--Module E

Building	Process	Title
707	15	Assembly – Module F, Leak Testing
707	16	Assembly--Superdry
707	18	Weighing--Module D
707	19	Radiography
707	20	Inspection
707	21	Testing – Module H
707	27	C-Pit, Carbon Tetrachloride and 1,1,1-Trichloroethane Collection Systems
707	29	Utilities
707	30	Maintenance
707	32	Duct Remediation
707	35	Module B Through H
707	37	Idle Equipment
707	39	Salt Stabilization
Building 771		
771	1	High-Level Dissolution
771	2	Low-Level Dissolution
771	3	Cation Exchange
771	4	Anion Exchange
771	5	Feed Preparation Evaporation
771	6	Precipitation Feed Batching
771	7	Precipitation
771	8	Precipitation Filtrate Evaporation
771	9	Calcination
771	10	Hydrofluorination
771	11	Reduction and Button Break-out
771	12	Miscellaneous Residue Processing
771	13	Metal Burning
771	14	Crushing and Grinding
771	15	Spray Leach
771	16	OY Leach
771	17	OY Precipitation
771	18	Special Recovery Anion Exchange
771	19	Caustic Filtration
771	20	Fume Scrubber
771	21	Vacuum Systems
771	23	Protected Area Radioassay Laboratory
771	25	Chemical Technology
771	26	Plutonium Metallurgy
771	36	H-4 Support Vacuum System
Building 774		
774	5	OASIS
774	9	Miscellaneous Waste Handling
Building 776/777		
776	1	Pyrochemical Processing
776	2	Size Reduction
776	3	Advanced Size Reduction Facility
777	1	Special Weapons Projects
777	2	Disassembly

Building	Process	Title
777	3	Electronic Etching
777	4	Briquetting
777	6	Super Dry
777	7	Machining
777	8	Density Balance
777	9	Weighing
777	10	Radiography
777	11	Inspection
777	12	Carbon Tetrachloride System
777	13	Nuclear Assembly Technology
777	14	Trichloroethane Collection & Filtration
777	15	Calibration Laboratory
777	16	Coating Laboratory
777	17	Tritium Surveillance Laboratory
777	18	Plutonium Metallography Laboratory
777	20	Joining PIGMA Welder
777	21	Joining CO ₂ Laser
776_777	1	Advanced Size Reduction Facility
776_777	9	TCA Collection and Filtration
776_777	11	Carbon Tetrachloride System

7.4.5 RCRA Characterization

Table 7.4-3 summarizes the characterization of the TRM combustible and plastic waste containers assigned EPA Hazardous Waste Numbers F001 and F002. Supporting characterization information is provided in the *WSRIC Building Books and BWR Baseline Book*.^(4,9,10,12)

Table 7.4-3, Combustible and Plastic Waste (F001 and F002) RCRA Characterization

IDC ^a	BWR Subpopulation	WSRIC Waste Stream	RCRA CCCs	Non-RCRA CCCs	EPA Hazardous Waste Numbers
<i>Dry Combustibles</i>					
0330		371 - 20 - 31A ¹	102039	1832	F001 and F002
0330		371 - 24 - 29	102039	1832	F001 and F002
0330		371 - 24 - 41	102039	1832	F001 and F002
0330		707 - 14 - 2	39	32	F001 and F002
0330		707 - 16 - 4	39	18	F001 and F002
0330		707 - 19 - 3	39	00	F001 and F002
0330	52AS		2039	18	F001 and F002
0330	52AY		1020	00	F001 and F002
0330	52CL		39	18	F001 and F002
0330	52LD		XN	00	F001 and F002
0330	52MB		2039	18	F001 and F002
0330	52MC		39	18	F001 and F002
0330	52ME		1020	00	F001 and F002
0330	52MG		102039	00	F001 and F002

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IDC	BWR Subpopulation	WSRIC Waste Stream	RCRA CCCs	Non-RCRA CCCs	EPA Hazardous Waste Numbers
0330	52NZ		202939	00	F001 and F002
0330	98GE		1020	32	F001 and F002
0330	98GF		39	18	F001 and F002
0330	98GK		1020	07	F001 and F002
0330	98GL		39	18	F001 and F002
0330	97AK ²		00	00	F001 and F002
0330	97CX ²		00	00	F001 and F002
0330	97DF ²		00	00	F001 and F002
<i>Wet Combustibles</i>					
0336		371 - 20 - 24	1020	32	F001 and F002
0336		371 - 20 - 33A ¹	102039	1832	F001 and F002
0336		371 - 24 - 30	102039	1832	F001 and F002
0336		371 - 24 - 40	102039	1832	F001 and F002
0336		707 - 6 - 14	20	32	F001 and F002
0336		707 - 27 - 11	1020	32	F001 and F002
0336		707 - 37 - 3	102039	3288	F001 and F002
0336		774 - 5 - 7A ¹	102039	32B1	F001 and F002
0336		776_777 - 11 - 3A ¹	102057	0732BP	F001 and F002
0336	52ML		102039	00	F001 and F002
0336	52MN		39	0118	F001 and F002
0336	52MT		39	0118	F001 and F002
0336	52MZ		391020	00	F001 and F002
0336	52YN		39	0732	F001 and F002
0336	52YV		102039	00	F001 and F002
0336	52ZV		1020	32	F001 and F002
0336	52ZX		102039	32	F001 and F002
0336	98IB		1020	32	F001 and F002
0336	98IC		102039	00	F001 and F002
0336	98ID		39	32	F001 and F002
0336	98IQ		102039	00	F001 and F002
0336	98IR		39	32	F001 and F002
0336	98IT		1020	32	F001 and F002
0336	98LC		1020	32	F001 and F002
0336	98LE		1020	32	F001 and F002
0336	97AB ²		00	0205	F001 and F002
0336	97AR ²		00	020550	F001 and F002
0336	97BD ²		00	02	F001 and F002
0336	97BG ²		00	32	F001 and F002
0336	97BU ²		00	00	F001 and F002
0336	97CI ²		00	00	F001 and F002
0336	97DB ²		00	00	F001 and F002
<i>Plastic</i>					
0337		371 - 20 - 25	1020	32	F001 and F002
0337		371 - 20 - 35A ¹	102039	1832	F001 and F002
0337		371 - 24 - 31	102039	1832	F001 and F002
0337		371 - 24 - 39	102039	1832	F001 and F002
0337		707 - 27 - 12	1020	32	F001 and F002

IDC	BWR Subpopulation	WSRIC Waste Stream	RCRA CCCs	Non-RCRA CCCs	EPA Hazardous Waste Numbers
0337		774 - 5 - 12A ¹	102039	32B1	F001 and F002
0337		776_777 - 9 - 10	39	00	F001 and F002
0337		776_777 - 11 - 2A ¹	102057	0732BP	F001 and F002
0337	52GP		1020	00	F001 and F002
0337	52GU		1020	32	F001 and F002
0337	52NK		3940XN	00	F001 and F002
0337	52NY		202939	00	F001 and F002
0337	98JY		1020	32	F001 and F002
0337	98JZ		1020	07	F001 and F002
0337	98KG		39	18	F001 and F002
0337	97AM ²		00	00	F001 and F002
0337	97AP ²		00	00	F001 and F002
0337	97BL ²		00	00	F001 and F002
0337	97BM ²		00	00	F001 and F002
0337	97BS ²		00	00	F001 and F002
0337	97BY ²		00	00	F001 and F002
0337	97CA ²		00	00	F001 and F002
0337	97CF ²		00	00	F001 and F002
0337	97CM ²		00	00	F001 and F002
0337	97CS ²		00	00	F001 and F002
0337	97CU ²		00	00	F001 and F002

1. This WSRIC waste stream has been revised as indicated by the alpha character suffix. The characterization of the revised waste stream supercedes the previous characterization and therefore is also applicable to waste generated prior to the revision. The alpha character will be applied to individual waste packages generated since the revision; however, it will not be assigned to individual waste packages generated before the revision.
2. Containers in this BWR Subpopulation are characterized as hazardous based on headspace gas analysis results. EPA Hazardous Waste Numbers are assigned to individual containers based on the constituents analyzed with concentrations greater than the PRQL. Specific characterization data is contained in WEMS and the container paperwork.
3. Containers in this waste stream are assigned IDC 330, 336, or 337 at the point of generation. The IDC may change to the appropriate 800-series IDC following radioassay to designate the waste as being TRU waste or TRM waste (refer to Section 7.4.2).

This waste stream was generated primarily from historical plutonium production operations in Buildings 707 and 776/777. These operations used carbon tetrachloride, 1,1,2-trichloro-1,2,2-trifluoroethane, 1,1,1-trichloroethane, and tetrachloroethylene for cleaning and degreasing. Research and development activities in Building 777 also used 1,1,2-trichloro-1,2,2-trifluoroethane, and 1,1,1-trichloroethane for cleaning and degreasing. In Building 774, combustibles and plastics were generated during the treatment of the spent solvents and oils from production and R&D operations.^(4,7,8,10,11,12)

Combustibles and plastics generated by historical processes are being repackaged in Building 371 to meet residue interim safe storage criteria and/or waste acceptance

criteria (WAC) for the WIPP. In Building 371, drums of combustibles and plastic wastes are also overpacked in Standard Waste Boxes to meet WIPP requirements.⁽⁹⁾

This waste stream also includes containers that were originally assigned to a different waste stream by acceptable knowledge (AK), but were subsequently segregated into this waste stream after completion of headspace gas sampling/analysis. Some containers in this waste stream consist of combustible/plastic debris that were assigned EPA hazardous waste numbers F001 and F002 because detectable concentrations of F001 and F002 listed VOCs were found in the container headspace.⁽⁴⁾

Visual examination of waste contents at the time of packaging and/or RTR is used to verify that the waste stream does not contain free liquid, explosives, non- radionuclide pyrophoric materials, compressed gasses, or reactive waste. Therefore, this waste stream does not exhibit the characteristics of ignitability (D001), corrosivity (D002), or reactivity (D003). Beryllium parts were used in the manufacture/assembly of weapons components, and residual beryllium contamination of plutonium parts may have occurred. Combustibles and plastics associated with these operations may have been contaminated with beryllium and therefore, trace quantities of beryllium may be present in the waste stream. Any beryllium present is as a contaminant of the process and not as unused commercial chemical product, and therefore is not a P015-listed waste. Based on an evaluation of this waste and the processes that generated the waste, including chemical usage, this waste stream does not exhibit the characteristic of toxicity and was not mixed with any another listed waste.^(3,4,7,8,9,10,11,12)

Headspace gas sampling and analysis of containers assigned to this waste stream by AK detected 23 VOCs. The UCL_{90} value for each detected analyte was calculated using the un-transformed raw data with one-half the method detection limit (MDL) for less-than detectable observations. The UCL_{90} values for carbon tetrachloride, 1,1,1-trichloroethane, and 1,1,2-trichloro-1,2,2-trifluoroethane were greater than the PRQL. All three of these analytes are collectively associated with EPA hazardous waste numbers F001 and F002. Therefore, AK is confirmed by headspace gas sampling and analysis for this waste stream.⁽¹⁴⁾

7.4.6 Radionuclides

Table 7.4-4 presents the radionuclides potentially present in TRM combustible and plastic wastes assigned EPA Hazardous Waste Numbers F001 and F002.⁽³⁾

Table 7.4-4, Combustible and Plastic Waste (F001 and F002) Radionuclides

IDC	Description	Radionuclides ¹	Rationale
330 821 831	Dry Combustibles	WG Pu, Am-241, DU, EU, Np-237	IDC generated in nearly every TRU building; radionuclides dependent on generation process
336 822 832	Wet Combustibles	WG Pu, Am-241, DU, EU, Np-237	IDC generated in every TRU building; radionuclides dependent on generation process
337 825 833	Plastic	WG Pu, Am-241, DU, EU, Np-237	IDC generated in nearly every TRU building; radionuclides dependent on generation process

Key: WG Pu weapons-grade plutonium Am-241 americium-241
 EU enriched uranium Np-237 neptunium-237
 DU depleted uranium

7.4.7 References

1. DOE 2000. TRUPACT-II Content Codes (TRUCON), Revision 13. DOE/WIPP 89-004.
2. DOE 1995. Transuranic Waste Baseline Inventory Report, Revision 2. DOE/CAO-95-1121.
3. RFETS 2001. RFETS TRU Waste Acceptable Knowledge Supplemental Information. RF/RMRS-97-018, Revision 9.
4. RFETS 2002. Backlog Waste Reassessment Baseline Book, Waste Form 52, Combustibles.
5. Waste and Environmental Management System (WEMS) database.
6. WASTREN 2002. Interoffice Memorandum from Scott Smith to TWCP Records. SMS-002-2002. March 7.
7. EG&G 1992. Waste Stream and Residue Identification and Characterization Building 707, Version 3.2.
8. EG&G 1992. Waste Stream and Residue Identification and Characterization Building 777, Version 3.2.
9. RFETS 2001. Waste Stream and Residue Identification and Characterization Building 371, Version 6.0.

10. RFETS 2001. Waste Stream and Residue Identification and Characterization Building 707, Version 6.0.
11. RFETS 2002. Waste Stream and Residue Identification and Characterization Building 774, Version 7.0.
12. RFETS 2001. Waste Stream and Residue Identification and Characterization Building 776/777, Version 6.0.
13. WASTREN 2002. Interoffice Memorandum from Scott Smith to TWCP Records. SMS-001-2002. February 25.
14. Interoffice Memorandum from Thomas R. Gatliffe to Eric L. D'Amico, Headspace Gas Analysis Data Evaluation Report For The Confirmation of EPA Hazardous Waste Numbers Using Headspace Gas Analytical Results For Waste Stream Profile Number RF101.30 Lot 1, TRG-006-02, February 2002.