



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

ENTERED

April 5, 2005



Mr. Steve Zappe, WIPP Project Leader
 Hazardous Waste Permits Program
 New Mexico Environment Department
 2905 E. Rodeo Park Drive, Bldg. 1
 Santa Fe, NM 87505

Subject: Transmittal of Approved Change Notice Number 1 for RFETS WSPF
 RF101.31 for TRM Combustible and Plastic Waste

Dear Mr. Zappe:

The Department of Energy, Carlsbad Field Office (CBFO) has approved the Change Notice Number 1 for Rocky Flats Environmental Technology Site (RFETS) Waste Stream Profile Form (WSPF) RF101.31 for TRM Combustible and Plastic Waste.

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) 706-0066.

Sincerely,

Kerry W. Watson

for

Kerry W. Watson, Director
 Office of Characterization and Transportation

Enclosure

cc: w/o enclosure
 J. Kieling, NMED *ED
 C. Walker, TechLaw ED
 D. Hofer, WTS ED
 M. Strum, WTS ED
 R. Chavez, WRES ED
 R. Reeves, WRES ED
 W. Ledford, CTAC ED
 L. Price, LANL ED
 CBFO M&RC



Update for WIPP Operating Record (Change Notice #1)

TRM Combustible and Plastic Wastes

(F001, F002, F005)

WSPF RF101.31

Please add the following information to the WIPP Operating Record for WSPF #RF101.31, Revision 0. This waste stream is TRM Combustible and Plastic Wastes (F001, F002, F005) and was approved by DOE/CBFO on April 17, 2003. Please update related files as you deem appropriate.

The Waste Stream Profile Form (WSPF) is being revised. The WSPF components are bolded. The updates are:

1. Title, version number and date of documents used for WAP Certification:

Changed *Transuranic (TRU) Waste Management Manual*, 1-MAN-008-WM-001, from Version 5 dated May 2002 to Version 10 dated March 2005. Changed from *Contact-Handled Transuranic Waste Acceptance Criteria for the Waste Isolation Pilot Plant*, Revision 0.0 dated May 2002 to Revision 2.1 dated March 2005.

2. Waste Stream Information:

- **Number of Drums:** Changed to 236
- **Number of SWBs:** Changed to 7

The Acceptable Knowledge (AK) Summary attachment to the WSPF is being revised. The AK Summary components are bolded. The updates are:

1. Generation Buildings: Added Building 440

2. Waste Stream Volume (Retrievably Stored): Changed to 198 55-gallon drums and 2 SWBs, revised dates to August 1987 to March 2005, and added the following note: Includes 7 retrievably stored drums that were overpacked into 2 SWBs in March 2005.

3. Waste Stream Volume (Newly Generated): Changed to 38 55-gallon drums and 5 SWBs and revised dates to October 2001 to December 2004.

4. Waste Stream Description:

- Added following to Table 7.8-1

IDC	IDC Description	Waste Matrix Code	Waste Material Parameters	Weight % (Average)
2216	Slightly Compressed TRU Combustible Waste (821, 822, 825)	S5390, Unknown/Other Organic Debris	Plastics	Note 3
			Cellulosics	Note 3
			Iron-based Metals/Alloys	Note 3

- Added the following as Note 3 to Table 7.8-1:

The weight percentages for each waste material parameter are determined on a container basis by RTR because the variability of the waste stream does not result in a consistent average.

- Added the following IDC description:

IDC 2216, Slightly Compressed TRU Combustible Waste: Combustible waste consisting of any combination of dry combustibles (IDC 821), wet combustibles (IDC 822) and plastic wastes (IDC 825) packed into a 35-gallon drum that was slightly compressed prior to being packed into a 55-gallon drum. This waste was previously referred to as "supercompacted" but is in reality slightly compressed waste. The compressed waste in this waste stream is assigned IDC 2216 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 7.8.5).⁽⁴⁾

5. Areas of Operation:

- Changed 1st paragraph as follows and added reference numbers 14 and 15:
TRM combustible and plastic wastes assigned EPA hazardous waste numbers F001, F002, and F005 are generated by the following defense operations in Buildings 371, 440, 559, 707, 771, 776, 777, and 779.

6. Generation Processes:

- Added the following as the last sentence to 3rd paragraph and added reference # 14.
Combustibles and plastics were also packaged into 35-gallon drums that were slightly compressed in the Supercompactor Facility in Building 776.
- Added the following as last sentence to 5th paragraph and added reference number 15:
Combustibles and plastics are also repackaged in Building 440.

7. RCRA Characterization:

- Changed 11th paragraph as follows:
...Combustibles and plastics associated with these operations may have been contaminated with beryllium and therefore, trace quantities of particulate beryllium (less than 1 weight percent) may be present in the waste stream. Based on beryllium surface contamination data, the total weight of particulate beryllium in an individual drum or standard waste box of combustible and plastic wastes will not exceed 5 kilogram. Any beryllium present...

8. Transportation:

- Changed the first sentence as follows:
The payload containers in the waste stream must also comply with the Contact-Handled Transuranic Waste Authorized Methods for Payload Control (CH-TRAMPAC) requirements.
- Added the following as the 2nd paragraph:
Payload management will not be used for this waste stream.

9. Radionuclides:

- Added the following:

IDC	Description	Radionuclides	Rationale
2216	Slightly Compressed TRU Combustible Waste (821, 822, 825)	WG Pu, Am-241, Am-243, DU, EU, Np-237	IDC generated from compaction of combustibles from any process within the PA.

10. References:

- Changed Reference Number 1 as follows:
RFETS 2005. Transuranic (TRU) Waste Management Manual, 1-MAN-008-WM-001, Version 10.
- Changed Reference Number 12 as follows:
Interoffice Memorandum from M. L. Johnson to Waste Records Center. Current and Projected Waste Volumes for TRM Combustible and Plastic Waste (F001, F002, F005), Profile Number RF101.31, MLJ-057-2005, April 6, 2005,
- Added the following as Reference Number 14:
RFETS 1991. Waste Stream and Residue Identification and Characterization, Building 776, Version 3.2.
- Added the following as Reference Number 15:
RFETS 2005. Waste Stream and Residue Identification and Characterization, Building 440STOR, Version 7.0.

Reason/Justification for Change:

The change to add IDC 2216 to WSPF RF101.31 is required because slightly compressed combustible waste will be disposed of at WIPP. This IDC can be included in this waste stream because this repackaged and slightly compressed waste was generated by the same processes and is similar in material, physical form, and hazardous constituents as the other combustible and plastic wastes in this waste stream. The slightly compressed waste containers were administratively controlled from shipment until approval of this change notice.

The changes to the volume estimates are needed to reflect the known increases in the waste generation volume with respect to what was previously identified. The increases in volume include:

1. Seven drums of retrievably stored, slightly compressed waste were overpacked into 2 SWBs. These waste containers were originally assigned to waste stream RF001.01 by AK, but are now being segregated into this waste stream after completion of headspace gas sampling/analysis due to detection of listed VOCs in concentrations above the PRQL in the container headspace.
2. An increase in the number of newly generated containers which were generated in support of D&D activities that were not projected in the original estimate.
3. An increase in the number of retrievably stored and newly generated waste containers because these waste containers were originally assigned to a different waste stream by AK but were subsequently segregated into this waste stream after completion of headspace gas sampling/analysis due to detection of listed VOCs F001, F002 and/or F005 constituents in concentrations above the PRQL in the individual container headspace.

The change to the generating buildings is needed to identify an additional generating location (i.e., Building 440) with respect to what was originally identified. The waste generated in Building 440 resulted from the repackaging of waste that was generated historically. This historical waste was either from a process that generated waste that was contaminated with F001, F002 and F005 listed solvents or includes waste that had been segregated into this waste stream after completion of headspace gas sampling/analysis due to detection of F001, F002 and F005 VOC constituents in concentrations above the PRQL in the individual container headspace. The waste generated from Building 440 is generated

from similar activities, is similar in material and physical form, and is hazardous (i.e., F001, F002 and F005); and is, therefore, appropriately part of this waste stream.

All changes submitted in this change notice do not affect the assignment of Hazardous Waste Numbers and/or the Waste Matrix Code as identified in the previously approved Waste Stream Profile Form.

Update for WIPP Operating Record (WSPF RF101.31) certification:

I hereby certify that I have reviewed the information in this Update for WIPP Operating Record, 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

4/6/05
Date



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

APR 17 2003

Mr. Steve Zappe, WIPP Project Leader
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
RF101.31 – TRM Combustible and Plastic Wastes

Dear Mr. Zappe:

The Department of Energy, Carlsbad Field Office (CBFO) has approved the Rocky Flats Environmental Technology Site (RFETS), Waste Stream Profile Form RF101.31. 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) 706-0066.

Sincerely,

A handwritten signature in black ink, appearing to read "Kerry W. Watson".

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, WRES
S. Calvert, CTAC
CBFO M&RC

Waste Stream Profile Number: RF101.31Generator site name: RFETSTechnical contact: Eric D'AmicoGenerator site EPA ID: CO7890010526Phone number: (303) 966-5362Date of audit report approval by NMED: March 9, 2000 as amended February 7, 2001; June 5, 2001; April 8, 2002; August 20, 2002 and August 29, 2002Title, 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-HandledTransuranic 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: RF-MR0337Summary Category Group: S5000 Waste Matrix Code Group: Combustible WasteWaste Stream Name: TRM Combustible and Plastic Wastes (F001, F002, F005)Description from the WTWBIR: This waste consists of rags, paper, cloth, coveralls, plastic, rubber, and wood.Defense TRU Waste: Yes NoCheck one: CH RH Number of SWBs 5 Number of Drums 198 Number of Canisters N/ABatch Data Report numbers supporting this waste stream characterization: See Table 7.List applicable EPA Hazardous Waste Codes⁽²⁾: F001, F002, F005Applicable 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 116TAcceptable 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

- | | |
|--|---|
| <input checked="" type="checkbox"/> Weapons activities including defense inertial confinement fusion | <input type="checkbox"/> Naval Reactors development |
| <input type="checkbox"/> Verification and control technology | <input type="checkbox"/> Defense research and development |
| <input type="checkbox"/> Defense nuclear waste and material by products management | <input type="checkbox"/> Defense nuclear materials production |
| <input type="checkbox"/> Defense nuclear waste and materials security and safeguards and security investigations | |

Reviewed For Classification/UCNI

By V.S. SENNELWEGKDate 10 APR 03 MAN

OK PUBLIC RELEASE

Supplemental Documentation:

- Process design documents: Note 3
- Standard operating procedures: Note 3
- Safety Analysis Reports: Note 3
- Waste packaging logs: Note 3
- Test plans/research project reports: Note 3
- Site data bases: Note 3
- Information from site personnel: Note 3
- Standard industry documents: Note 3
- Previous analytical data: Note 3
- Material safety data sheets: Note 3
- Sampling and analysis data from comparable/surrogate Waste: Note 3
- Laboratory notebooks: Note 3

Sampling and Analysis Information⁽¹⁾

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

- Radiography: Reference List Nos. 13, 14, 19
- Visual Examination: 11, 12, 16, 17, 18
- Headspace Gas Analysis
 - VOCs: Reference List, No. 7, 15
 - Flammable: Reference List, No. 7, 15
 - 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.

G. A. O'Leary
Signature of Site Project Manager

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

4-10-03
Date

C. L. Ferrera
Signature of Site QA Officer

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

4/10/03
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) 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, November 2002.
2. Waste Stream and Residue Identification and Characterization (WSRIC), Version 7, and archived versions.
3. RFETS TRU Waste Acceptable Knowledge Supplemental Information, RF/RMRS-97-018, Revision 10, August 2002.
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, Section 7.8, Revision 0, January 2003.
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 4, May 2002.
9. Waste Characterization Program Manual, 1-MAN-036-EWQA-Section 1.6.1, Revision 3, May 2002.
10. Interoffice Memorandum from Thomas R. Galliffe to Eric L. D'Amico, Headspace Gas Analysis Data Evaluation Report For Waste Stream Profile RF101.31 (TRM Combustible and Plastic Wastes) Lot 1, TRG-019-03, January 2003.
11. Visual Examination for Confirmation of RTR, 4-H80-776-ASRF-007, Revision 5, June 2001.
12. TRU/TRM Waste Visual Verification (V^2) and Data Review, PRO-1031-WIPP-1112, Revision 1, June 2002.
13. Real-Time Radiography Testing of Transuranic and Low-Level Waste, 4-W30-NDT-00664, Revision 5, October 2001.
14. Real-Time Radiography Testing of Transuranic and Low-Level Waste in Building 569, 4-119-NDT-00569, Revision 6, January 2002.
15. Headspace Gas Sampling And Analysis Using An Automated Manifold, L-4231-F, March 2002.
16. Visual Examination for Confirmation of RTR, PRO-1471-VE-771, Revision 0, November 2001.
17. Residue Repack, Building 371; PRO-544-SALTREPACK-371, Revision 5, January 2002.
18. Combustible Residue Repackaging, PRO-823-REPACK-371, Revision 1, March 2001.
19. PRO-1520-Mobile-RTR, Mobile Real-Time Radiography Testing of Transuranic and Low-Level Waste, Revision 0, May 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 # RF101.31

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	✓	Appropriate packaging configuration and DAC were met and documented in the headspace gas sampling documentation and the drum age was met prior to sampling.
20	✓	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

4-10-03
Date

Data Summary Report—Table 2: Headspace Gas Summary Data

WSPF # RF101.31

Sampling and Analysis Method (check one):

 100% Sampling Reduced Sampling

2A

ANALYTE ^a	# Samples ^b	Transform Applied ^c	Normality Test (Pass/Fail) ^d	Mean ^d (ppmV)	UCL ₉₀ ^d (ppmV)	RTL ^e (ppmV)	EPA Code ^f
1,1-Dichloroethane	1	Log	Fail ^h	0.35	0.38	10	
1,2-Dichloroethane	1	Log	Fail ^h	0.23	0.28	10	
1,1-Dichloroethylene	1	None	Fail ^h	0.21	0.25	10	
cis-1,2-Dichloroethylene	0			0.199		10	
trans-1,2-Dichloroethylene	0			0.6		10	
1,1,2,2-Tetrachloroethane	0			0.18		10	
1,1,1-Trichloroethane	15	Log	Fail ^h	2.46	5.43	10	
1,1,2-Trichloro-1,2,2-Trifluoroethane	3	Log	Fail ^h	0.78	1.47	10	
1,2,4-Trimethylbenzene	0			0.206		NA	
1,3,5-Trimethylbenzene	0			0.197		NA	
Acetone	11	Log	Fail ^h	8.10	11.97	100	
Benzene	3	Log	Fail ^h	0.41	0.46	10	
Bromoform	0			0.2		10	
Butanol	0			4.362		100	
Carbon disulfide	29	Sq Rt	Pass	12.45	14.93	10	F005
Carbon tetrachloride	10	Log	Fail ^h	1.6	3.25	10	
Chlorobenzene	0			0.185		10	
Chloroform	5	Log	Fail ^h	0.41	0.57	10	
Cyclohexane	4	Log	Fail ^h	0.33	0.44	NA	
Ethyl benzene	1	Log	Fail ^h	0.26	0.34	10	
Ethyl ether	0			0.462		10	
Methanol	11	Log	Fail ^h	11.77	14.20	100	
Methyl ethyl ketone	4	Log	Fail ^h	2.72	3.35	100	
Methyl isobutyl ketone	1	Sq Rt	Fail ^h	1.70	1.88	100	
Methylene chloride	3	Log	Fail ^h	0.39	0.44	10	
o-Xylene	1	Log	Fail ^h	0.24	0.30	10	
m,p-Xylene	3	Log	Fail ^h	0.46	0.67	10	
Tetrachloroethylene	1	Log	Fail ^h	0.19	0.21	10	
Toluene	32	None	Pass	15.77	18.26	72.02 ^g	
Trichloroethylene	0			0.329		10	

NOTES:

- ^a A total of 33 samples were collected and analyzed. Analysis was performed for all analytes identified. Samples were not composited.
- ^b Identifies the number of samples in which the associated analyte was detected.
- ^c Identifies the type of data transformation used, if applicable, to achieve (or better achieve) a normal probability distribution of the data.

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

- ^d Statistics calculated based on using $\frac{1}{2}$ the MDL for less-than-detectable observations with data transformation as identified (Reference 10). With no detectable concentrations, listed mean reflects average of one-half of reported MDL values for analyte and calculation of standard deviation and UCL_{90} values is not meaningful. With fewer than five detectable concentrations, calculated values for UCL_{90} are subject to potentially large relative error.
- ^e RTLs for headspace gas analysis results correspond to the analyte PRQL for WIPP WAP target analytes. "NA" means the analyte is not a WIPP WAP target analyte, but instead a flammable VOC that is analyzed for compliance with the TRUPACT-II Authorized Methods of Payload Control (TRAMPAC).
- ^f No entry indicates no associated EPA Code assigned to the waste stream based on headspace analysis.
- ^g Limit used for evaluation EPA Hazardous Waste Code for toluene (Reference No. 3).
- ^h Data set (with or without transformation) did not pass the test for normality. The data set that most approximated a normal distribution was used for computation of statistics.

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

WSPF # RF101.31

2B

TENTATIVELY IDENTIFIED COMPOUND (TIC) CHEMICAL ABSTRACTS SERVICE (CAS) NUMBER	Maximum Observed Estimated Concentrations (ppmv)	# Samples Containing TIC
108-87-2 (Methylcyclohexane)	4.0	5
109-60-4 (n-Propyl acetate)	2.1	1
109-94-4 (Ethyl formate)	3.5	1
109-99-9 (Tetrahydrofuran)	4.1	1
1120-97-4 (4-Methyl-1,3-dioxane)	4.1	1
141-78-6 (Ethyl acetate)	14	2
142-82-5 (n-Heptane)	3.8	2
463-58-1 (Carbonyl sulfide)	13	1
534-22-5 (2-Methylfuran)	2.7	1
589-34-4 (3-Methylhexane)	4.4	8
591-76-4 (2-Methylhexane)	2.1	1
64-17-5 (Ethanol)	34	1
71-23-8 (1-Propanol)	4	1
766-20-1 (2,4-Dimethyl-1,3-dioxane)	4.4	2
79-20-9 (Methyl acetate)	11	3

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:

Data Summary Report—Table 6: Exclusion of Prohibited Items**WSPF # RF101.31**

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 # RF101.31

Package No.	Radioassay Data Package	Headspace Sample Batch No.	Headspace VOC Data Package	RTR Data Package ^a	VV Data Package ^b
D57381	CIQ-97-012	01W0171	HVOC-DP-00500	6T-2046	
D61134	CPN-01-020	01W0133	HVOC-DP-00459	6T-1793	
D63799	CIQ-01-055	01W0162	HVOC-DP-00491	6T-2015	
D64016	569IP1-DP-040802	02W0040	HGAS-DP-00315	5T-0294	
D64270	CIQ-97-006	01W0154	HVOC-DP-00483	6T-2016	
D67138	CIQ-97-006	01W0142	HVOC-DP-00471	6T-2018	
D67556	CPN-97-003	01W0156	HVOC-DP-00485	6T-2004	
D67639	CIQ-97-020	01W0169	HVOC-DP-00498	6T-2046	
D67647	CIQ-97-002	01W0138	HVOC-DP-00461	6T-2018	
D67649	CIQ-97-005	01W0212	HVOC-DP-00540	6T-2042	
D67898	CIQ-97-006	01W0159	HVOC-DP-00488	6T-2021	
D68171	CIQ-97-020	01W0170	HVOC-DP-00499	6T-2019	
D68781	CIQ-97-001	01W0139	HVOC-DP-00468	6T-2015	
D69182	CIQ-97-017	01W0171	HVOC-DP-00500	6T-2019	
D69516	CIQ-97-009	01W0159	HVOC-DP-00488	6T-2007	
D69638	CPN-97-008	01W0138	HVOC-DP-00461	6T-2047	
D69656	CIQ-97-001	01W0212	HVOC-DP-00540	6T-2041	
D70150	CIQ-97-006	01W0158	HVOC-DP-00487	6T-2014	
D70317	CIQ-97-007	01W0144	HVOC-DP-00472	6T-2068	
D71580	CIQ-97-014	01W0170	HVOC-DP-00499	6T-2055	
D71980	CIQ-97-001	01W0154	HVOC-DP-00483	6T-2021	
D72247	CIQ-97-020	01W0191	HVOC-DP-00516	6T-2042	
D72450	CIQ-97-017	01W0171	HVOC-DP-00500	6T-2018	
D72512	CIQ-97-008	01W0160	HVOC-DP-00489	6T-2007	
D73091	CIQ-97-012	01W0191	HVOC-DP-00516	6T-2042	
D73225	CPN-97-007	01W0191	HVOC-DP-00516	6T-2041	
D74384	CIQ-97-006	01W0138	HVOC-DP-00461	6T-2046	
D74428	CIQ-97-024	01W0158	HVOC-DP-00487	6T-2057	
D74704	569IP1-DP-041902	02W0054	HGAS-DP-00320	5T-0298	
D83076	CIQ-01-051	01W0141	HVOC-DP-00469	6T-2013	
D83382	CIQ-01-058	01W0184	HVOC-DP-00511	6T-1870	
D86594	569IP1-DP-012802	01W0142	HVOC-DP-00471	5T-0282	
S01519	440SH1-DP-040402	03W0002	HGAS-DP-00335		VV-771-00027

NOTES:

- ^a No entry indicates container underwent visual verification (VV) at the time of waste packaging using the visual examination (VE) technique.
- ^b No entry indicates container was examined using radiography. Containers that were examined using radiography were candidates for visual examination to confirm radiography; however, none were selected.

Acceptable Knowledge Summary

WSPF # RF101.31

RMRS-WIPP-98-100, Acceptable Knowledge TRU/TRM Waste Stream Summaries, Section 7.8, TRM Combustible and Plastic Waste (F001, F002, F005) (attached).

7.7 TRM Combustible and Plastic Wastes (F001, F002, F003)

Profile No. RF101.31

Acceptable Knowledge Waste Stream Summary

Waste Stream Name: TRM Combustible and Plastic Wastes (F001, F002, F005)

Generation Buildings: Buildings 371, 559, 707, 771, 776, 777, and 779^(5,12)

Waste Stream Volume (Retrievably Stored): 174 55-Gallon Drums^(5,12)

Generation Dates (Retrievably Stored): August 1987 - September 2001^(5,12)

Waste Stream Volume (Newly Generated): 24 55-Gallon Drum and 5 Standard Waste Boxes^(5,12)

Generation Dates (Newly Generated): October 2001 - September 2002^(5,12)

Waste Stream Volume (Projected): None⁽¹²⁾

Generation Dates (Projected): None⁽¹²⁾

TRUCON Content Codes⁽¹⁾: RF 116A, RF 116C, RF 116D, RF 116DE, 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

Process Knowledge Demonstrates Flammable VOCs in Headspace < 500 ppm: No (see Sec. 7.8.6)

7.8.1 WIPP Transuranic Waste Baseline Inventory Report Information⁽²⁾

WIPP Identification Numbers: RF-MR0337

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

Waste Matrix Code: S5390 Waste Stream Name: Combustibles/TRM

Description from the WTWBIR: This waste consists of rags, paper, cloth, coveralls, plastic, rubber, and wood.

7.8.2 Waste Stream Description

This waste is generated by similar activities, and is similar in material, physical form and hazardous constituents and therefore is considered a single waste stream. TRM combustible and plastic wastes assigned EPA hazardous waste numbers F001, F002, and F005 consists of dry combustibles, wet combustibles, and plastic. Table 7.8-1

presents the waste matrix code and waste material parameters for combustible and plastic wastes.⁽³⁾

Table 7.8-1, Combustible and Plastic Wastes (F001, F002, F005) Description

IDC	IDC Description	Waste Matrix Code	Waste Material Parameters	Weight % (Average)
330	Dry Combustibles	S5390, Unknown/Other Organic Debris	Cellulosics ¹	85%
821			Plastics ²	10%
831			Iron-based Metal/Alloys Other Inorganic Materials	4% 1%
336	Wet Combustibles	S5390, Unknown/Other Organic Debris	Cellulosics ¹	85%
822			Plastics ²	11%
832			Iron-based Metal/Alloys	2%
			Rubber	1%
	Aluminum-based Metal/Alloys	1%		
337	Plastic	S5390, Unknown/Other Organic Debris	Plastics ²	95%
825			Cellulosics ¹	3%
833			Iron-based Metal/Alloys Other Inorganic Materials	1% 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 7.8.5). RTR inspection of containers assigned these IDCs has 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 absorbed liquid or 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 7.8.5). 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 7.8.5). This IDC includes containers originally assigned to a combustible IDC that was reassigned because RTR inspection of the containers identified more than 50% plastic, by weight.⁽⁴⁾

7.8.3 Areas of Operation

TRM combustible and plastic wastes assigned EPA hazardous waste numbers F001, F002, and F005 are generated by the following defense operations in Buildings 371, 559, 707, 771, 776, 777, and 779:^(3,4,5,6,7,8,9,10,12)

- Laboratory Operations
- Waste and Residue Repackaging and Treatment
- Decontamination and Decommissioning Operations (D&D)

7.8.4 Generation Processes

This waste stream includes combustible and plastic wastes assigned EPA hazardous waste numbers F001, F002, and F005 generated primarily from analytical laboratory operations, but also includes combustible and plastics from waste and residue repackaging and treatment operations and D&D operations.

TRM combustible and plastic wastes assigned EPA hazardous waste numbers F001, F002, and F005 in inventory were primarily generated from analytical laboratory operations in Buildings 371, 559, and 771. The laboratories provided sampling and analysis support for production activities. In addition, the laboratories supported recovery and purification, liquid waste treatment operations, and research and development operations. The Building 371 Laboratory also screened samples for radioactivity content prior to analysis in the Building 559 (high radioactivity) or Building 881 (low radioactivity) laboratories, and served as a backup facility for the Building 771 laboratory. Building 559 housed the laboratory responsible for spectrochemical, chemical, and mass spectrometric analyses of samples from plutonium production operations. Uranium, Raschig rings, solutions, waste samples, and commercial product and gas samples were also analyzed in the laboratory. Plutonium production samples, including metal and oxide, were prepared and subdivided for analysis in the sample cutting process. Processes that utilized solvents for sample extraction and cleaning included infrared analysis, gas chromatography/mass spectrometry, Karl Fischer coulometric titration, and atomic absorption.^(3,4)

Historical solid waste treatment and repackaging operations were conducted in Building 776. Combustibles and plastics, including those from historical laboratory

operations, were repackaged in the Size Reduction Facility. Combustibles and plastics were also generated in the Advanced Size Reduction Facility where plutonium contaminated gloveboxes or large pieces of equipment were cut to fit into a waste container.⁽⁴⁾

Combustibles from numerous processes, including the analytical laboratories, were historically incinerated in Building 771. Ash residues from the incinerator, and sludge, including sludge from the incinerator scrubber, were repackaged in Buildings 371 and 707. The repackaging process generated secondary combustibles and plastic wastes assigned EPA hazardous waste numbers F001, F002, and F005.^(6,7)

Combustibles and plastics are also generated from D&D of gloveboxes and equipment from the incinerator system in Building 771, as well as gloveboxes and equipment utilized for ash and sludge repackaging in Buildings 371 and 707, and historical waste repackaging and treatment operations in Building 776.^(6,7,8,9,10)

A more detailed description of each of these processes and process flow diagrams can be found in the *WSRIC Building Books* or *archived WSRIC files*.^(3,4,6,7,8,9,10)

7.8.5 RCRA Characterization

This waste stream is characterized as a mixed waste. The specific BWR Baseline Book Subpopulations and WSRIC Process Numbers associated with combustible and plastic wastes assigned EPA hazardous waste numbers F001, F002, and F005 are listed in the WEMS AK Waste Stream Summary for Profile Number RF101.31.⁽⁵⁾

This waste stream was generated primarily from historical laboratory operations in Buildings 371, 559, and 771. These operations used carbon tetrachloride, 1,1,2-trichloro-1,2,2-trifluoroethane, methyl ethyl ketone, methylene chloride, 1,1,1-trichloroethane, carbon disulfide, xylene, and butyl alcohol as laboratory solvents (e.g., sample extraction) and for cleaning and degreasing. Therefore, these wastes are assigned EPA hazardous waste numbers F001, F002, and F005.⁽⁴⁾

Although n-butyl alcohol and xylene were used, these solvents are listed solely for ignitability. Because the combustible and plastic wastes are not ignitable (i.e., are not assigned D001), EPA hazardous waste number F003 is not assigned to this waste stream.⁽⁴⁾

Sample materials analyzed in these operations may be F-, P-, or U-listed waste when they are sent to the Laboratory. However, based on a Regulatory Contact Record between Rocky Flats and the Colorado Department of Health (CDH), laboratory waste generated from the analysis of a sample does not retain the waste codes associated with the sample. The laboratory waste is a new waste stream and a hazardous waste determination is made based on the process that generated the waste, materials used in the process, and the characteristics of the waste.^(4,11)

Combustible and plastic wastes from laboratory operations may be contaminated with trace quantities of toxicity characteristic metal and organic compounds. These constituents are present as contaminants in materials sampled, or used in small quantities in the laboratory operations. Based on this process knowledge, and analytical data from comparable waste streams (i.e., analytical data from sampling of combustibles and plastics from the Building 881 low-level radioactive laboratory operations), combustible and plastic wastes from these operations do not exhibit the characteristic of toxicity for RCRA metal or organic compounds.⁽⁴⁾

The solid waste repackaging and treatment processes in Building 776 did not use hazardous constituents. The F001, F002, and F005 assigned to combustibles and plastics from these processes are derived from the EPA hazardous waste numbers assigned to the waste that was treated and/or repackaged.⁽⁴⁾

The ash and sludge residue repackaging processes did not use hazardous constituents. The F001, F002, and F005 assigned to secondary combustibles and plastics from these processes are derived from the EPA hazardous waste numbers assigned to the sludge and ash materials. Based on the small quantity of ash and sludge on combustible and plastic wastes generated from the repackaging operations, and analytical data from sampling of the ash and sludge, these materials do not exhibit a characteristic of hazardous waste.^(6,7)

Hazardous constituents are not used for D&D of the waste and residue repackaging and treatment gloveboxes and equipment. The F001, F002, and F005 assigned to combustibles and plastics from these D&D operations are derived from the EPA hazardous waste numbers assigned to materials handled in these gloveboxes.^(6,7,8,9,10)

This waste stream also includes containers generated in Buildings 371, 707, 771, 776, and 779 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. EPA hazardous waste numbers F001, F002, and/or F005 were added to this waste because detectable concentrations of these 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.^(3,4,6,7,8,9,10)

The combustible and plastic waste streams generated at RFETS and sent to the INEEL for storage have the same IDC but are considered different waste streams because of the EPA hazardous waste numbers assigned. The INEEL waste streams (Local-ID Numbers ID-RFO-330T, ID-RFO-336T, and ID-RFO-337T) were generated and shipped to INEEL prior to the full implementation of RCRA and therefore, EPA hazardous waste numbers were assigned to each IDC as a whole.⁽²⁾

Headspace gas sampling and analysis of containers assigned to this waste stream by AK detected 20 VOCs. Statistics were calculated based on using one-half the method detection limit (MDL) for less-than-detectable observations with data transformation applied where appropriate. Using this method, the calculated 90% upper confidence limit (UCL₉₀) for the mean concentration of carbon disulfide (F005) exceeded the regulatory threshold limit (RTL). Other F001, F002, and F005-listed solvents, including carbon tetrachloride, 1,1,1-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, methylene chloride, benzene, methyl ethyl ketone were detected at less significant concentrations. Therefore, AK is confirmed by headspace gas sampling and analysis for this waste stream.⁽¹³⁾

7.8.6 Transportation

The payload containers in this waste stream must also comply with the TRUPACT-II Authorized Methods for Payload Control (TRAMPAC) requirements. Flammable volatile organic compounds (VOCs) including acetone, benzene, butanol, chlorobenzene, ethyl benzene, methanol, methyl ethyl ketone, methyl isobutyl ketone, toluene, xylenes, and carbon disulfide were identified in this waste stream based on the descriptions in the *BWR Baseline Book*, *WSRIC Building Books*, and headspace gas sampling and analysis. Therefore, flammable VOCs in the payload container headspace have the potential to exceed 500 ppm.^(4,5,6,7,8,9,10)

7.8.7 Radionuclides

Table 7.8-2 summarizes the radionuclides potentially present in TRM combustible and plastic wastes assigned EPA hazardous waste numbers F001, F002, and F005.⁽³⁾

Table 7.8-2, Combustible and Plastic Wastes (F001, F002, F005) Radionuclides

IDC	Description	Radionuclides ¹	Rationale
330 821 831	Dry Combustibles	WG Pu, Am-241, DU, EU, Np-237, Am-243	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, Am-243	IDC generated in every TRU building; radionuclides dependent on generation process
337 825 833	Plastic	WG Pu, Am-241, DU, EU, Np-237, Am-243	IDC generated in nearly every TRU building; radionuclides dependent on generation process

Key: WG Pu weapons-grade plutonium
 Am-241 americium-241
 DU depleted uranium
 EU enriched uranium
 Np-237 neptunium-237
 Am-243 americium-243

Notes:

1. Am-243 was not initially predicted to be present by AK; however, it has been identified by NDA and is therefore added as a potential radionuclide in this waste stream.

7.8.8 References

1. DOE 2002. TRUPACT-II Content Codes (TRUCON), Revision 13.2. DOE/WIPP 89-004.
2. DOE 1995. WIPP Transuranic Waste Baseline Inventory Report, Revision 2. DOE/CAO-95-1121.
3. RFETS 2002. RFETS TRU Waste Acceptable Knowledge Supplemental Information. RF/RMRS-97-018, Revision 10.

4. RFETS 2002. Backlog Waste Reassessment Baseline Book, Waste Form 52, Combustibles.
5. Waste and Environmental Management System (WEMS) database.
6. RFETS 2002. Waste Stream and Residue Identification and Characterization, Building 371, Version 7.0.
7. RFETS 2001. Waste Stream and Residue Identification and Characterization, Building 707, Version 6.0.
8. RFETS 2002. Waste Stream and Residue Identification and Characterization, Building 707, Version 7.0.
9. RFETS 2002. Waste Stream and Residue Identification and Characterization, Building 771, Version 7.0.
10. RFETS 2002. Waste Stream and Residue Identification and Characterization, Building 776/777, Version 7.0.
11. Telephone Contact Record between David Maxwell, DOE-RFFO, and Ken Niswonger, CDH, Confirm Regulatory Interpretation That Listed Waste Codes on Lab Samples Do Not Carry Over to the Waste Generated from the Analysis of the Sample, September 1994.
12. WASTREN 2003. Interoffice Memorandum from Scott Smith to Waste Records Center. Retrievably Stored and Current Newly Generated Waste Volumes for TRM Combustible and Plastic Waste (F001, F002, F005), SMS-001-2003. January 17.
13. Interoffice Memorandum from Thomas R. Gatliffe to Eric L. D'Amico, Headspace Gas Analysis Data Evaluation Report For Waste Stream Profile RF101.31 Lot 1, TRG-019-03, January 2003.