Department of Energy
Carlsbad Area Office
P. O. Box 3090
Carlsbad, New Mexico 88221
July 11, 2000

JUL 2000
RECEIVED

John Kieling, Manager
Hazardous Waste Permits Program
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
P.O. Box 26110
Santa Fe, New Mexico 87502-6110

Subject: TRANSMITTAL OF APPROVED WASTE STREAM PROFILE FORM FOR HANFORD, WASTE STREAM RLNPDT.002

Dear Mr. Kieling:

The Department of Energy, Carlsbad Area Office has approved the Hanford Waste Stream Profile Form RLNPDT.002. Enclosed is a copy of the approved form as required by Section B-4(b)(1) of the WIPP's Hazardous Waste Permit No. NM4890139088-TSDF.

This Waste Stream Profile Form replaces Waste Stream Profile Form RLNPDT.001 submitted to NMED on June 23, 2000. CAO approval Waste Stream Profile Form RLNPDT.001 was rescinded due to NMED issues associated with the use of data collected prior to the effective date of WIPP's Hazardous Waste Permit. Waste Stream Profile Form RLNPDT.002 relies only on data collected after the effective date of the permit.

Please contact Kerry Watson at 505-234-7357 should you have any questions regarding this matter.

Sincerely,

Dr. Inés R. Triay
Manager

Enclosure
cc:
S. Zappe, NMED
E. Rose, CAO
B. Stroud, CAO
C. Zvonar, CAO
C. Walker, TechLaw
G. Barnes, WID
J. Epstein, WID
K. Mikus, WID (Operating Record)
L. Stevens, WID
M. Whatley, WID
CAO:NTP:RRS:NM 00-1130 UFC 5822.00

000716

WIPP WASTE STREAM PROFILE FORM

Waste Stream Profile Number RLNPDT.002
Generator Site Name: Hanford Technical Contact: R. Clinton
Generator Site EPA ID: WA7890008967 Technical Contact phone number: 509-373-2188
Date Site certified by CAO/NMED: May 31, 2000/June 23, 2000
Title, version number, and date of documents used for WAC certification: HNF-2599, Final Hanford Site Transuranic Waste Characterization Quality Assurance Project Plan, Rev. 2A; WIPP WAC, Rev. 7
Did your facility generate this waste? x Yes ☐ No If no, provide the name and EPA ID of the original generator:

Waste Stream Information[1]
WIPP ID: RL-377
Summary Category Group: S5000
Waste Matrix Code Group: (114) heterogeneous debris Waste Stream Name: NPFPD
Description from the WTWBIR: This stream contains plastic/polyurethane, paper/cardboard, cloth/rag/nylon, rubber, metal/iron/galvanized/sheet, dirt/soil/diatomaceous earth, glass, ppe clothing (paper/plastic/cloth), wood/lumber/plywood, stainless steel, conweb pads, and anti-corrosive rad pads

Defense TRU Waste: x Yes ☐ No Spent Nuclear Fuel: ☐Yes x No High Level Waste: ☐Yes x No
Check one: x CH ☐ RH Number of SWBs: Not applicable
Number of Drums: 941 Number of Canisters: Not applicable
Data package numbers supporting this waste stream characterization: See attached Container/Package Correlation
List applicable EPA Hazardous Waste Codes[2] Not applicable
Applicable TRUCON Content Codes: RH225A, RH225B, RH225C, RH225D, RH225E, RH225F, RH225G, RH225H, RH225I, RH225J, and RH225K

Acceptable Knowledge Information[1]
[For the following, enter supporting the documentation used (i.e., references and dates)]
Required Program Information

- Map of site: AK Checklist (TRU-SPO-11.9-0410200054896) and HNF-3461, "Hanford Site Transuranic Waste Management Program Acceptable Knowledge Document for Retrievably Stored Contact-Handled Waste", Section 2.0
- Facility mission description: Same as above Sections 2.2 and 3.2
- Description of operations that generate waste: Same as above, Section 3.2
- Waste identification/categorization schemes: Same as above, Sections 3.2 and 6.3
- Types and quantities of waste generated: Same as above, Sections 6.1 through 6.3 and 8.1 through 8.3
- Correlation of waste streams generated from the same building and process, as appropriate: Same as above, Sections 3.1 through 3.4
- Waste certification procedures: Same as above, Section 9.0

Required Waste Stream Information

- Area(s) and building(s) from which the waste stream was generated: AK Checklist (TRU-SPO-11.9-0410200054896). See HNF-5481, "Hanford Site Transuranic Waste Management Waste Specific Acceptable Knowledge Documentation for Plutonium Finishing Plant Non-Mixed Debris", Section 2.0 and HNF-5482,"Hanford Site

Transuranic Waste Management Waste Specific Acceptable Knowledge Documentation for Plutonium Finishing Plant", Sections 2.1 through 2.6

- Waste stream volume and time period of generation: Same as above, Section 1.0 in both documents
- Waste generating process description for each building: HNF-5482, Sections 3.1 through 3.7
- Process flow diagrams: HNF-5482, Sections 3.1 through 3.7
- Material inputs or other information identifying chemical/radionuclide content and physical waste form: Same as above
- Which Defense Activity generated the waste: (check one)

☐ Weapons activities including defense inertial confinement fusion
☐ Naval Reactors development
☐ Verification and control technology
☐ Defense research and development
x Defense nuclear waste and material byproducts management
☐ Defense nuclear materials production
☐ Defense nuclear waste and materials security and safeguards and security investigations

Supplemental Documentation

- Process design documents: Section 5.0 of both HNF-5481 and HNF-5482
- Standard operating procedures: Section 5.0 of both HNF-5481 and HNF-5482
- Safety Analysis Reports: Section 5.0 of both HNF-5481 and HNF-5482
- Waste packaging logs: TRU-SPO-11.4.4-1013199952471
- Test plans/research project reports: Section 5.0 of both HNF-5481 and HNF-5482
- Site data bases: Not applicable
- Information from site personnel: Section 5.0 of both HNF-5481 and HNF-5482
- Standard industry documents: Not applicable
- Previous analytical data: Section 5.0 of both HNF-5481 and HNF-5482
- Material safety data sheets: Not applicable
- Sampling and analysis data from comparable/surrogate Waste: Not applicable
- Laboratory notebooks: Not applicable

Sampling and Analysis Information[1]

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

x Radiography: Operation of the Drum Nondestructive Examination System, WRP1-OP-0908

x Visual examination: Visual Examination, WRP1-OP-0729

x Headspace Gas Analysis

VOCs: OBTAIN HEADSPACE GAS SAMPLES OF TRU WASTE CONTAINERS, DO-080-009, DETERMINATION OF VOLATILE ORGANIC COMPOUNDS IN TRU/MIXED WASTE CONTAINER HEADSPACE, LA-523-410, WASTE MANAGEMENT LABORATORY CLEANING SUMMA CANISTERS, LO-080-407, TRU PROJECT SAMPLE CHAIN OF CUSTODY, STORAGE, ACCEPTANCE, AND DISPOSAL, LO-090-450

Flammable: OBTAIN HEADSPACE GAS SAMPLES OF TRU WASTE CONTAINERS, DO-080-009, DETERMINATION OF VOLATILE ORGANIC COMPOUNDS IN TRU/MIXED WASTE CONTAINER HEADSPACE, LA-523-410

Other gases (specify): DETERMINATION OF VOLATILE ORGANIC COMPOUNDS IN TRU/MIXED WASTE CONTAINER HEADSPACE, LA-523-410

Attachment 2

Headspace Gas Data Summary Report

Consisting of 2 pages

☐ Homogeneous Solids/Soils/Gravel Sample Analysis
Total metals: Not applicable
PCBs: Not applicable
VOCs: Not applicable
Nonhalogenated VOCs: Not applicable
Semi-VOCs: Not applicable
Other (specify): Not applicable

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	Printed Name and Title	Date
[signature]	PAUL J. CRANE/SPM	7/10/00

NOTE: (1) Use back of sheet or continuation sheets, if required.
(2) If radiography, visual examination, headspace gas analysis, and/or homogeneous solids/soils/gravel sample analysis were used to determine EPA Hazardous Waste Codes, attach signed summary reports documenting this determination.

DATA SUMMARY REPORT: HEADSPACE GAS SUMMARY DATA

WSPF #RLNPDT.002

ANALYTE	# Samples	Mean (ppmv)	SD (ppmv)	UCL_{95} (ppmv)	PRQL (ppmv)	EPA Code* (F001-5)
1,1,1-Trichloroethane	7	0.50	0.00	0.10	10	N/A
1,1,2-Trichloro-1,2,2-Trifluoroethane	7	0.50	0.00	0.07	10	N/A
Acetone	7	3.15	0.00	3.15	100	N/A
Benzene	7	0.50	0.00	0.16	10	N/A
Butanol	7	2.50	0.00	2.50	100	N/A
Carbon tetrachloride	7	0.50	0.00	0.08	10	N/A
Chlorobenzene	7	0.50	0.00	0.11	10	N/A
Ethyl benzene	7	0.50	0.00	0.12	10	N/A
Ethyl ether	7	0.50	0.00	0.17	10	N/A
m-Xylene	7	1.00	0.00	0.23	20	N/A
Methanol	7	5.50	0.00	0.00	100	N/A
Methyl ethyl ketone	7	2.55	0.00	2.55	100	N/A
Methyl isobutyl ketone	7	1.85	0.00	1.85	100	N/A
Methylene chloride	7	0.50	0.00	0.15	10	N/A
o-Xylene	7	0.50	0.00	0.12	10	N/A
p-Xylene	7	1.00	0.00	0.23	20	N/A
Tetrachloroethylene	7	0.50	0.00	0.08	10	N/A
Toluene	7	0.53	0.08	0.22	10	N/A
Trichloroethylene	7	0.50	0.00	0.08	10	N/A

ANALYTE	# Samples	Mean (ppmv)
1,1,2,2-Tetrachloroethane	7	0.50
1,1-Dichloroethane	7	0.50
1,1-Dichloroethylene	7	0.50
1,2-Dichloroethane	7	0.50
Bromoform	7	0.50
Chloroform	7	0.50
cis-1,2-Dichloroethylene	7	0.50
Cyclohexane*	N/A	N/A
1,2,4-Trimethylbenzene*	N/A	N/A
1,3,5-Trimethylbenzene*	N/A	N/A
Hydrogen**	N/A	N/A

Source: QAPjP, Table B3-2 except for items with *.

*These compounds are from the TRAMPAC and are flammable VOCs that do not appear in the QAPjP or the WIPP WAP. These are not part of the target analyte list, but samples may be analyzed for these compounds.

**Hydrogen will only be sampled as necessary to support aspiration criteria as shown in WMH-400, Section 7.1.7.

DATA SUMMARY REPORT: HEADSPACE GAS SUMMARY DATA

WSPF #

ADDITIONAL TARGET ANALYTE	# Samples	Mean (ppmv)[b]
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

TENTATIVELY IDENTIFIED COMPOUNDS	Maximum Observed Estimated Concentrations (ppmv)[c]	# Samples Containing TIC[c]
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

Did the data verify the acceptable knowledge? ☒ Yes ☐ No

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

Signature of WSPF Preparer	R. Clinton Printed Name	07-10-00 Date

NOTES:

[a]EPA Hazardous Waste Code. No entry indicates no associated EPA Hazardous Waste Code assigned to the waste stream.

[b]No entry indicates no additional target analytes.

[c]No entry indicates no detectable measurements available for statistics.

Attachment 3

Container to Batch Report Correlation List

Consisting of 1 page

Container Batch Report Correlation

Waste Stream	CIN	HGA Batch Number	NDE Batch Number	NDA Batch Number
NPFPD	9400971	WSCF-000511R0	WR-TB-2000-02	WR-TB-2000-19
NPFPD	RHZ-212-A22976	WSCF-000511R0	WR-TB-2000-01	WR-TB-2000-19
NPFPD	RHZ-213-A21593	WSCF-000511R0	WR-TB-2000-17	WR-TB-2000-21
NPFPD	RHZ-213-A21537	WSCF-000511R0	WR-TB-2000-17	WR-TB-2000-21
NPFPD	RHZ-231-A21750	WSCF-000511R0	WR-TB-2000-02	WR-TB-2000-19
NPFPD	RHZ-231-A21753	WSCF-000511R0	WR-TB-2000-02	WR-TB-2000-19
NPFPD	RHZ-231-A22579	WSCF-000511R0	WR-TB-2000-02	WR-TB-2000-19

Attachment 4

Reconciliation with Data Quality Objectives

Consisting of 1 page

400-7-1-1-attachment-2

RECONCILIATION WITH DATA QUALITY OBJECTIVES

I certify by signature (below) that sufficient data have been collected to determine the following project-required waste parameters for WSPF#: **RLNPDT.002**

		Reconciliation Parameter
1	X	Waste Matrix Parameter Category as reported in WWIS.
2	X	Waste Material Parameter Weights for individual containers as reported in WWIS.
3	X	The matrix parameter category identified is consistent with the type of sampling and analysis used to characterize the waste.
4	X	Container mass and activities of each radionuclide of concern as reported in WWIS.
5	X	The TRU activity reported in WWIS demonstrates with a 95% probability that the waste is TRU waste and not low-level radioactive waste.
6	X	The concentrations of each VOC (and hydrogen as necessary) in the headspace gas of each container, as reported in WWIS.
7	X	The upper 90-percent confidence limit (UCL_{90}) values for the mean contaminant concentrations were calculated and compared with the program required quantitation limits, as reported in Data Summary Report Table 2, and additional EPA Hazardous Waste Codes were assigned as required.
8	N/A	Mean concentrations, UCL_{90} for the mean concentrations, standard deviations, number of samples collected for VOCs were calculated and compared with the program required quantitation limits and regulatory threshold limits, as reported in Data Summary Report Table 3, and EPA Hazardous Waste Codes were assigned as required (Matrix Parameter Summary Categories S3000 and S4000).
9	N/A	Mean concentrations, UCL_{90} for the mean concentrations, standard deviations, number of samples collected for SVOCs were calculated and compared with the program required quantitation limits and regulatory threshold limits, as reported in Data Summary Report Table 4, and EPA Hazardous Waste Codes were assigned as required (Matrix Parameter Summary Categories S3000 and S4000).
10	N/A	Mean concentrations, UCL_{90} for the mean concentrations, standard deviations, number of samples collected for metals were calculated and compared with the program required quantitation limits and regulatory threshold limits, as reported in Data Summary Report Table 5, and EPA Hazardous Waste Codes were assigned as required (Matrix Parameter Summary Categories S3000 and S4000).
11	N/A	Sufficient numbers of samples (as established by completeness rate) were taken to meet statistical sampling requirements, as documented on Summary Data Report Table 1.
12	X	Only validated data were used in the above calculations, as documented through the site data review and validation forms and process.
13	N/A	Waste containers were selected randomly for sampling, as documented in site procedures.
14	X	The potential flammability of TRU waste headspace gases.
15	X	Whether the waste stream exhibits a toxicity characteristic under 40 CFR Part 261, Subpart C.
16	X	Whether the waste stream can be classified as hazardous or nonhazardous at the 90% confidence level.
17	X	Whether all TICs were appropriately identified and reported in accordance with the requirements of the QAPjP Section B3-1.
18	X	Whether the overall completeness, comparability, and representativeness QAOs were met for each of the analytical and testing procedures as specified in the QAPjP Sections B3-2 through B3-9.
19	X	Whether the PRQLs for all analyses were met.
20	X	Sufficient numbers of waste containers were visually examined to determine with a reasonable level of certainty that the UCL_{90} for the miscertification rate is less than 14 percent.

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.

Signature of Site Project Manager

PAUL J. CRANG
Printed Name

7/10/00
Date

Attachment 5

Acceptable Knowledge Waste Stream Summary

Consisting of 3 pages

WASTE STREAM SUMMARY

Site: Hanford	
Waste Stream/Waste Stream Lot: Non-mixed PFP Debris	
Waste Stream/Waste Stream Lot Number: NPFPD	
Generator Site: 200 West Area, Plutonium Finishing Plant	Waste Stream Generation Building(s): Building 234-5Z
Waste Stream Volume: 197 m^3	Waste Stream Generation Time Period: 1988 - 1997
TRUCON Codes: RH225A - RH225I	Maximum number of layers of confinement: 6
WIPP Identification Number(s):[a] RL-W377	
Summary Category Group:[a] S5000	Waste Matrix Code Group:[a] Heterogeneous Debris
Waste Stream Name:[a] 234-5Z Combination Debris Contact-Handled TRU	
Description:[a] TRU Glovebox Waste from 234-5Z from the PFP Complex	

Waste Stream Description:

This waste stream contains TRU non-mixed debris waste from gloveboxes located throughout the PFP Complex. The waste was generated while performing cleanout and facility stabilization after years of producing plutonium buttons and oxides in the remote mechanical C line and remote mechanical A line. Supporting facilities such as the Plutonium Reclamation Facility (PRF), the Incinerator (232-Z), the Plutonium Process Support Laboratory (PPSL), the Analytical Laboratory, and the 2736-ZB Building are also areas that generated the non-mixed debris waste. The debris waste includes paper, wood, metals, rubber, plastics, asbestos, and clothes. This waste was contaminated by transuranic radionuclides generated by the plutonium product production in the gloveboxes.

*** See HNF-5481, Section 3.0 and HNF-5482, Sections 2.0 and 3.0**

Matrix Parameter Categories Assigned:

There are a variety of matrix parameter categories within this waste stream, but the wastes are all intermixed within the containers. There is no specific waste form that comprises 80% of the waste matrix; therefore, the subcategory assigned to this waste stream is S5490.

*** See HNF-5481, Section 3.3**

Site: Hanford

Waste Stream/Waste Stream Lot: Non-mixed PFP Debris

Waste Stream/Waste Stream Lot Number: NPFPD

Waste Material Parameters Present:

Waste Contents

Inorganic debris (metal, glass, ceramics):

- Iron-based Metals/Alloys: tools and scraps remaining after maintenance activities, spent equipment (e.g., hot plates, sample racks, stirrers, burners, slip lid cans)
- Aluminum-based Metals/Alloys (e.g., household foil and mask filters)
- Other Inorganic Materials (e.g., asbestos)
- Glass (e.g., tubes, vials, stirrers)
- Ceramic (e.g., burners)

Organic debris (e.g., plastic, rubber, paper, cloth, wood):

- Rubber: non-leaded rubber in masks and gloves used for PPE
- Plastics (waste material): used exclusively to bag out glovebox waste, load equipment and tools into gloveboxes, contamination control during and after bagging out waste, empty bags, poly jars, and bottles

Cellulosics:

- Paper: cardboard and "ice cream" cartons to place tools in the gloveboxes at the glovebox seal out and hood areas
- Cloth: PPE that could not be decontaminated, rags used for decontamination, and masselin clothes used in radiological routines
- Wood: brush handles and framing material for filter media
- Filter media: laboratory hood and glovebox ventilation systems

Waste Packaging

- Other Inorganic Materials: diatomaceous earth used in the waste packaging of all drums
- Steel: DOT 17C or UN1A2 steel drums
- Plastic: Anti-Corrosive Rad Pad used in the waste packaging of most waste drums. 10 mil plastic liners are used in most of the containers. A small amount of drums contain 90 mil plastic liners.

The waste containers are not expected to contain any prohibited items.

*** See HNF-5481, Sections 2.1, 2.2, and 3.2 and Appendix 2**

Areas of Operation:

Building 234-5Z: 1st Floor, Rms. 228A,B, and C and Rms. 230A, B, and C (RMC), Rms. 235B and 235C (RMA), Rms. 139 - 157, Rms. 178 - 188; Building 236-Z: 1st Floor East and West Gloveboxes, 2nd Floor East and West Gloveboxes; Building 232-Z: Incinerator; 2736-ZB: Rms. 636 and 638

*** See HNF-5482, Sections 2.1 through 2.6 and Sections 3.1 through 3.7**

Site: Hanford

Waste Stream/Waste Stream Lot: Non-mixed PFP Debris

Waste Stream/Waste Stream Lot Number: NPFPD

Waste Generating Process:

The plutonium metal button and plutonium oxide production occurred in the Remote Mechanical C (RMC) line beginning in the early 1960's to 1989. The Remote Mechanical A (RMA) line produced plutonium oxide starting from the late 1960's to 1983. The stages included the pH adjustment of the feed, the precipitation of plutonium oxalate, the calcination of the plutonium oxalate to plutonium oxide, the fluorination with hydrogen fluoride to produce plutonium fluoride, and the reduction to plutonium metal buttons with the use of an induction furnace. The RMC and the RMA processed plutonium nitrate feeds through a series of stages, which included the pH adjustment of the feed, the precipitation of plutonium oxalate, and the first and second stage calcination of the plutonium oxalate to plutonium oxide. The PRF reprocessed plutonium scrap from the RMC, RMA, and the Incinerator. The Incinerator processed materials from the various facilities in the complex. 2736-ZB repackaged materials from various facilities in the complex. The labs analyzed samples to support various parts of the operation, cleanout, and stabilization of the complex.

*** See HNF-5482, Sections 3.1 through 3.7**

EPA Hazardous Waste Constituents Present — EPA Hazardous Waste Number

This waste stream is not associated with any EPA Hazardous Waste Numbers. The process equipment such as the chemical glassware and the calciners were isolated from the debris waste. Equipment was drained, flushed, and neutralized to remove any characteristic. The Plutonium Reclamation Facility (PRF) processes indirectly affected the RMA and RMC because the PRF provided some of the feed. A constituent of concern from the PRF processes is carbon tetrachloride (CCl_4). CCl_4 was removed during the separation process, and it was further removed by low-pressure steam stripping. The labs rinsed laboratory glassware. Any residual liquid was removed by using their vacuum system. The liquid waste was subsequently disposed of in the tank farm system.

*** See HNF-5481, Section 3.1**

Washington State Hazardous Waste Constituents Present — Washington State Hazardous Waste Number

This waste stream is not associated with any Washington State Hazardous Waste Numbers. Equipment was drained, flushed, and neutralized to remove any characteristic.

*** See HNF-5481, Section 3.1**

Radionuclides Present:

The typical radionuclides present are Pu-239, Pu-238, Pu-240, Pu-241, Pu-242, and Am-241. These radionuclides come in variable distributions based on the weight percent of Pu-240. The percent Pu-240 varies from less than 6% to 20% because of a variety of plutonium nitrate feed. Most of this waste will contain 6% or 12% Pu-241.

*** See HNF-5481, Section 3.4**

Waste Container Numbers:
The container list is located in the AK report.
*** See HNF-5481, Appendix 1**

Site: Hanford
Waste Stream/Waste Stream Lot: Non-mixed PFP Debris
Waste Stream/Waste Stream Lot Number: NPFPD
Applicable Source Documents (refer to or attach waste management program and waste stream-specific Acceptable Knowledge Source Document Reference Lists): See Section 5.0 in both HNF-5481 and HNF-5482
Data Collector: [signature] /R. Clinton Date: 04-13-00 Sign/Print Site Project Manager: [signature] /P. Crane Date: 4/13/00 (or designee) Sign/Print [a]Enter information obtained from the current revision of the Transuranic Waste Baseline Inventory Report only in this section. *Location of information in AK report: