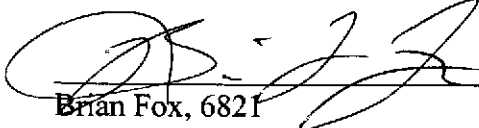
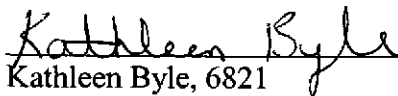
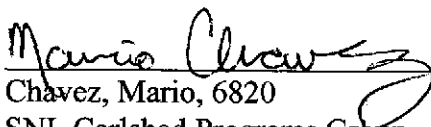



Analysis Package for EPA Unit Loading Calculations: Performance Assessment
Baseline Calculation

Revision 0

ERMS # 540378

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WIPP:1.4.1.2:PA:QA-L:539325

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1. INTRODUCTION

In 1996 the Department of Energy (DOE) completed a performance assessment (PA) calculation for the Waste Isolation Pilot Plant (WIPP). The PA was part of the Compliance Certification Application (CCA) submitted to the Environmental Protection Agency (EPA) to demonstrate compliance with the radiation protection regulations of 40 CFR 191 and 40 CFR 194 (DOE 1996). As required by the WIPP Land Withdrawal Act (Public Law 102-579), DOE is required to submit documentation to EPA for the recertification of the WIPP every five years in order to continue operating the site. This required that a Compliance Recertification Application (CRA) be prepared, and CRA-2004 was submitted to the EPA in March 2004 (DOE 2004).

EPA is currently performing a completeness review of CRA-2004 and will soon start a final evaluation to determine if CRA-2004 demonstrates continued compliance with the disposal regulations governing WIPP. As part of their final evaluation, the EPA has required that another PA, the Performance Assessment Baseline Calculation (PABC), be performed.

This analysis report discusses the computational method to determine the WIPP repository radionuclide inventory information for use in the cuttings / cavings calculation for the CRA-2004 CRA-2004 PABC, and provides the results from the implementation of that method.

An update to the CRA-2004 inventory, governed by AP-113, *Analysis Plan For Inventory Reconciliation: Compliance Recertification Application*, has been completed. This inventory update is the basis for the PA inventory for the CRA-2004 PABC used in this analysis. This analysis is governed by AP-119, *Analysis Plan For Deriving Radionuclide Inventory Information for Performance Assessment Calculations: Post CRA Performance Assessment Baseline Calculation* which discusses the methodology that will be used by Sandia National Laboratories (SNL) to determine the WIPP repository radionuclide inventory information for use in the cuttings / cavings calculation for the CRA-2004 PABC.

The analysis presented herein was performed in accordance with the Sandia National Laboratories (SNL) Quality Assurance Program as prescribed by the SNL Nuclear Waste Management Program (NWMP) Procedure, NP 9-1, *Analysis*.

1.1 ACRONYMS

AP	Analysis Plan
CCA	Compliance Certification Application
CFR	Code of Federal Regulations
CH	Contact handled
Ci	Curies
CRA	Compliance Recertification Application
DOE	Department of Energy
EPA	Environmental Protection Agency
INEEL	Idaho National Environmental and Engineering Laboratory

LANL	Los Alamos National Laboratory
LLNL	Lawrence Livermore National Laboratory
NP	NWMP Procedure
NWMP	Nuclear Waste Management Program
ORNL	Oak Ridge National Laboratory
PA	Performance Assessment
PABC	Performance Assessment Baseline Calculation
RFETS	Rocky Flats Environmental Technology Site
RH	Remote Handled
SNL	Sandia National Laboratory
SRS	Savannah River Site
TRU	Transuranic
WIPP	Waste Isolation Pilot Plant

2. PROBLEM DESCRIPTION

Environmental radiation protection standards for management and disposal of spent nuclear fuel, high-level and transuranic radioactive wastes as defined in 40 CFR 191 require human intrusion scenarios to be included in the PA calculations for repositories. Five distinct human intrusion scenarios that impact release from the repository are defined for the WIPP PA. Four of these involve a single drilling intrusion that occurs at various times after repository closure. Two types of drilling intrusions are considered: 1) a borehole is drilled through a single waste panel and intersects a pressurized brine pocket located approximately 250 meters below the repository, and 2) a borehole is drilled into the repository, but does not intersect a brine pocket. One multiple intrusion scenario is considered.

For scenarios that involve a drilling intrusion into the repository, release mechanisms include cuttings, cavings and spallings. To calculate the extent of release from these mechanisms, an estimate of the radionuclide content, expressed as the EPA Unit, of the waste encountered via drilling is required.

Determination of the radionuclide content of the waste encountered via drilling is problematic because it is uncertain. The radionuclide content of waste streams disposed in the WIPP repository is uncertain, as is the loading of those waste streams. The EPA has offered guidance about how to handle this uncertainty, stating that in the absence of a waste loading plan for the repository, random waste emplacement should be assumed (see 40 CFR 194.24). Therefore, following EPA guidance, it is assumed that waste is emplaced randomly in the repository and the probability of encountering any given waste stream in a drilling intrusion is directly proportional to the volume of that waste stream in the repository.

3. COMPUTATIONAL METHOD

For the WIPP PA, information about the radionuclides that would be encountered during drilling is quantified using the metric of EPA Units. The EPA Unit for a radionuclide is the quotient of the initial source term activity (in Curies (Ci)) of that radionuclide divided by a quantity called the release limit (in Ci) for the same radionuclide (Leigh and Fox 2005).

In 40 CFR 191 EPA specifies release limits for transuranic (TRU) waste, where a unit of waste is 10^6 Ci. For example, the release limit for ^{239}Pu is 100 Ci per unit of waste (10^6 Ci of isotopes in the repository with half-lives greater than 20 years). Therefore, if there are 2.31×10^6 total Ci disposed in the repository, 231 Ci of the ^{239}Pu isotope can be released over the 10,000 year regulatory time period. The quantity that could be released according to the regulation is referred to as the EPA Unit. For the plutonium example above, one EPA Unit is 231 Ci of the isotope.

The activity of the isotope is calculated in EPA Units using the following equation:

$$E_i = \frac{w_i}{f_w \bullet r_i} \quad \text{Equation 1}$$

where:

E_i is the radionuclide activity expressed in EPA Units for radionuclide i,

r_i is the release limit from 40 CFR 191 for radionuclide i,

f_w is the Waste Unit Factor¹, and

w_i is the waste-stream-scale activity in curies (Ci), for radionuclide i

For the WIPP PA, the activity in EPA Units at each time interval of interest of each of the major radionuclides in each waste stream is calculated. Then, the activity of the entire waste stream (at the time interval) in EPA Units is calculated as:

$$E_{ws} = \sum E_i \quad \text{Equation 2}$$

where:

E_{ws} is the radionuclide activity of a waste stream expressed in EPA Units,

E_i is the radionuclide activity expressed in EPA Units for radionuclide i.

Once the activity of each waste stream in the metric of EPA Units is determined at each time interval, the probability of encountering each stream during a drilling intrusion is calculated as:

¹ The waste unit factor is defined as the number of millions of curies of alpha-emitting TRU radionuclides with half-lives longer than 20 years (Leigh and Trone 2005).

$$p_{ws} = \frac{v_{ws}}{V} \quad \text{Equation 3}$$

where:

p_{ws} is the probability of encountering a waste stream during a drilling intrusion,

v_{ws} is the volume of an individual waste stream, and

V is the total volume of waste in the repository.

The radionuclides that are important for modeling the direct solid release pathway are: ^{238}Pu , ^{239}Pu , ^{241}Am , ^{240}Pu , ^{137}Cs , ^{90}Sr , ^{233}U , and ^{234}U (Leigh and Fox 2005). These eight radionuclides were chosen because they each had EPA units over unity throughout the 10,000 year regulatory period in the CRA-2004 PABC inventory. Leigh and Fox (2005) indicated that these 8 radionuclides accounted for 99% of the EPA units at the time of repository closure in the CRA-2004 PABC inventory.

All eight radionuclides are modeled in EPAUNI, Version 1.15A. This analysis focuses solely on Contact Handled (CH) TRU waste and the seven radionuclides affecting it: ^{241}Am , ^{244}Cm , ^{238}Pu , ^{239}Pu , ^{240}Pu , ^{241}Pu , and ^{234}U . Two of the radionuclides modeled by EPAUNI, Version 1.15A, for CH TRU waste are not among the eight radionuclides that account for 99% of the EPA Units in the repository, as discussed above. ^{244}Cm and ^{241}Pu , both non-transuranic due to half-lives less than 20 years, are modeled due to their indirect contribution to repository EPA Units. ^{244}Cm , which alpha decays to ^{240}Pu , will be abundant in the repository at time of closure (2033). ^{241}Pu , which beta decays to ^{241}Am , is present in large quantities in most waste streams and will effect the repository at closure. Their large concentrations in the repository dramatically effects EPA Units as they decay to their TRU daughters.

EPAUNI, Version 1.15A, is the computational code that generates the data described above for use in calculating potential cuttings / cavings releases from the repository. Results of the codes remote handled (RH) TRU waste potential release calculations can be found in CRA library CRA1BC_EPU.

Command language scripts, referred to here as EVAL run scripts, are used to implement and document the running of all software codes. These scripts, which are the basis for the WIPP PA run control system, are stored in the CRA1BC_EVAL CMS library. All inputs are fetched at run time by the scripts, and outputs and run logs are automatically stored by the scripts in class CRA1BC-0 of the CMS libraries.

For illustration purposes the EPAUNI Version 1.15A output values were ranked to show the largest contributing waste streams, as discussed in Sections 4.1 through 4.11. The ranking and percentage of contribution calculations were performed using Microsoft Excel ® spreadsheets.

4. RESULTS

The following sections discuss the output of EPAUNI in terms of total volume (Section 4.1), EPA Units per volume (Section 4.2), total EPA Units (Section 4.3), EPA curies (Section 4.4) and the seven key radionuclides (Sections 4.4 through 4.11). Information is provided for each of the dominant waste streams, for each of ten separate time intervals ranging from time of closure (year 0) to 10,000 years after closure (year 12033).

4.1 TOTAL VOLUME

Table 4.1-1 indicates that 35 separate CH-TRU waste streams contribute more than 75% of the total volume of CH-TRU waste to be disposed in the WIPP. Of these 35 waste streams, six contribute more than 40% of the volume. These six waste streams originate from only one site, the Idaho National Engineering and Environmental Laboratory (INEEL). Drum equivalents, calculated by EPAUNI 1.15A, are provided as supplemental information.

Waste stream IN-BN-510 (supercompacted debris waste) provides about 11.8% of the total volume of CH-TRU waste to be disposed at WIPP. IN-W216.98 (solidified inorganics, primarily wet sludges produced by treating aqueous process wastes) comprises about 7.6% of the disposed waste volume. IN-ICP-002 (Pre-1970 buried waste, inorganic sludge, retrieved for the Idaho Completion Project) comprises about 7.4% of the disposed waste volume. IN-W228.101 (wet sludge produced from treatment) comprises about 4.8% of the disposed waste volume. IN-W309.609 (organic setup produced from treatment of liquid organic wastes) comprises about 4.6% of the disposed waste volume. IN-ICP-005 (Pre-1970 buried waste, filters, retrieved for the Idaho Completion Project) comprises about 4.3% of the disposed waste volume.

Information regarding total volume for all 690 waste streams can be found in the file EPU_CRA1BC_CH.DIA in CRA library CRA1BC_EPU.

Table 4.1-1. WIPP CH-TRU Waste Streams by Total Volume

Rank Order	Waste Stream ID	Total Volume			Cumulative %
		[m ³]	Drum Equivalent	% of Total	
1	IN-BN-510	1.99E+04	9.55E+04	11.8%	11.8%
2	IN-W216.98	1.27E+04	6.12E+04	7.6%	19.4%
3	IN-ICP-002	1.25E+04	5.99E+04	7.4%	26.8%
4	IN-W228.101	8.06E+03	3.87E+04	4.8%	31.6%
5	IN-W309.609	7.73E+03	3.71E+04	4.6%	36.2%
6	IN-ICP-005	7.24E+03	3.48E+04	4.3%	40.4%
7	RL-W513	6.27E+03	3.01E+04	3.7%	44.2%
8	RL-T107	6.16E+03	2.96E+04	3.7%	47.8%
9	IN-ICP-003	5.26E+03	2.53E+04	3.1%	50.9%
10	T001-221H-HET	3.90E+03	1.87E+04	2.3%	53.3%
11	W027-221F-HET	3.05E+03	1.47E+04	1.8%	55.1%
12	LA-TA-55-30	2.71E+03	1.30E+04	1.6%	56.7%
13	LA-TA-55-19	2.58E+03	1.24E+04	1.5%	58.2%
14	LA-TA-21-43	2.53E+03	1.22E+04	1.5%	59.7%
15	RP-W755	2.45E+03	1.18E+04	1.5%	61.2%
16	IN-W218.909	2.08E+03	1.00E+04	1.2%	62.4%
17	IN-W179.158	2.00E+03	9.59E+03	1.2%	63.6%
18	T001-221F-HET	1.96E+03	9.43E+03	1.2%	64.8%
19	IN-W220.114	1.89E+03	9.09E+03	1.1%	65.9%
20	RF-TT3011	1.76E+03	8.47E+03	1.1%	66.9%
21	LL-T002	1.51E+03	7.24E+03	0.9%	67.8%
22	RP-W754	1.48E+03	7.13E+03	0.9%	68.7%
23	T001-772F-HET	1.47E+03	7.05E+03	0.9%	69.6%
24	W027-221H-HET	1.34E+03	6.41E+03	0.8%	70.4%
25	WP-RF009.01	1.30E+03	6.24E+03	0.8%	71.1%
26	WP-RF118.01	1.27E+03	6.12E+03	0.8%	71.9%
27	LA-TA-50-19	1.18E+03	5.67E+03	0.7%	72.6%
28	W027-773A-HET	1.09E+03	5.23E+03	0.7%	73.2%
29	IN-ICP-004	1.08E+03	5.21E+03	0.6%	73.9%
30	RL-T115	1.03E+03	4.93E+03	0.6%	74.5%
31	RF-TT0824	1.03E+03	4.92E+03	0.6%	75.1%
32	LA-TA-21-40	1.02E+03	4.91E+03	0.6%	75.7%
33	WP-INW216.001-	8.88E+02	4.27E+03	0.5%	76.2%
34	W027-999-HET	8.87E+02	4.26E+03	0.5%	76.8%
35	LL-T005	8.52E+02	4.09E+03	0.5%	77.3%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	WP-RF002.01-B	2.10E-01	1.01E+00	0.0%	100.0%
	Sum =	1.68E+05	8.09E+05	100.00%	N/A

4.2 EPA UNITS PER VOLUME

The EPA Units per volume values in Table 4.2-1 through Table 4.2-10 were calculated to illustrate which waste streams have the highest concentration of activity over the entire population of waste. Each table identifies 35 waste streams that offer the greatest concentration (by volume) of EPA units during each of the ten time intervals output by EPAUNI. All 690 waste streams and their EPA Units per volume can be found in the file EPU_CRA1BC_CH.DIA in the CRA library CRA1BC_EPU.

Tables 4.2-1 through 4.2-10 also illustrate that as the radionuclides decay, based on the volume of each waste stream (see Section 4.1) and individual radioisotopic concentrations, their respective contributions over time change relative to the contribution of other waste streams. The tables are ranked by the concentration (EPA/m³) while the % of Total reflects their contribution to total EPA Units. At the time of closure (time interval 0, year 2033), of the thirty-five waste streams with the highest concentration of EPA Units per volume only two contribute significantly to the total EPA Units of the repository - LANL waste stream LA-OS-00-01 and the RFETS waste stream already emplaced in the WIPP, WP-RF009.01.

Waste Stream LA-OS-00-01 (solid actinides encapsulated in metal jackets, also called sealed sources) contributes 4.7% of the total volumetric activity at closure, but over time contributes less activity per unit volume due to its higher concentration of relatively short-lived ²³⁸Pu (see Section 4.7). By time interval 1,000 years (year 3033), this waste stream still contributes to EPA Units but its concentration decreases causing its presence to no longer be seen in the top 35 waste streams (see Table 4.2-6).

Waste stream WP-RF009.01 (pyrochemical salts) contributes 5.4% of the total activity at closure, placing it thirty-third in the ranking of waste streams with higher concentrations (see Table 4.2-1) and fifth in terms of total EPA Units (see Table 4.3-1) and EPA curies (see Table 4.4-1) at closure. However, unlike the LANL waste stream discussed above, this waste stream continues to contribute significantly over time because it also contains higher quantities of longer-lived radioisotopes, principally ²³⁹Pu and ²⁴⁰Pu (See Sections 4.8 and 4.9).

Table 4.2-1. WIPP CH-TRU Waste Streams by EPA Units per Volume; Time 0
(Calendar Year 2033)

Rank Order	Waste Stream ID	Waste Stream Average EPA Units per Volume			
		[EPA/m ³]	EPA Units	% of Total	Cum. %
1	LA-OS-00-01	9.32E+00	4.68E+02	4.7%	4.7%
2	IN-W358.948	7.08E+00	1.49E+00	0.0%	4.7%
3	RL-W751	6.14E+00	1.29E+00	0.0%	4.8%
4	W006-773A-VIT	3.73E+00	2.31E+00	0.0%	4.8%
5	RL-W750	3.40E+00	1.43E+00	0.0%	4.8%
6	W053-773A-VIT	2.77E+00	1.72E+00	0.0%	4.8%
7	IN-W358.855	2.14E+00	7.12E+00	0.1%	4.9%
8	RF-TT-0334	1.29E+00	5.25E+00	0.1%	4.9%
9	RF-MT-0299	1.21E+00	3.76E+01	0.4%	5.3%
10	RL-W656	1.20E+00	3.76E+00	0.0%	5.4%
11	RF-TT0299	1.20E+00	2.52E-01	0.0%	5.4%
12	BCLCH-MT01	1.18E+00	6.18E+00	0.1%	5.4%
13	RF-MT0001	1.12E+00	9.12E+00	0.1%	5.5%
14	RF-MT0002	1.11E+00	7.02E-01	0.0%	5.5%
15	IN-W249.527	7.44E-01	4.97E+00	0.1%	5.6%
16	RL-W665	7.42E-01	6.33E+00	0.1%	5.6%
17	RL-W660	7.24E-01	1.51E+00	0.0%	5.6%
18	IN-W358.854	7.07E-01	1.34E+00	0.0%	5.7%
19	RL-W655	6.99E-01	1.02E+00	0.0%	5.7%
20	LA-TA-55-49	6.25E-01	1.14E+01	0.1%	5.8%
21	RL-W753	6.20E-01	7.54E+00	0.1%	5.9%
22	RL-W659	6.06E-01	2.54E-01	0.0%	5.9%
23	RF-TT0802	5.89E-01	3.32E+01	0.3%	6.2%
24	RF-TT0809	5.89E-01	2.40E+00	0.0%	6.2%
25	RF-TT433X	5.81E-01	3.66E-01	0.0%	6.2%
26	RF-TT429R	5.78E-01	1.20E+00	0.0%	6.2%
27	RL-T132	5.73E-01	1.65E+01	0.2%	6.4%
28	WP-RF005.02	5.27E-01	4.13E+01	0.4%	6.8%
29	RF-TT436R	4.71E-01	3.34E+00	0.0%	6.9%
30	RF-TT454X	4.68E-01	1.96E-01	0.0%	6.9%
31	OR-W201	4.57E-01	3.94E+01	0.4%	7.3%
32	RL-W709	4.49E-01	9.42E-02	0.0%	7.3%
33	WP-RF009.01	4.14E-01	5.38E+02	5.4%	12.7%
34	WP-RF005.01	3.93E-01	4.74E+01	0.5%	13.2%
35	RF-TT398R	3.64E-01	2.54E+01	0.3%	13.4%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	N/A	9.90E+03	100.0%	N/A

Table 4.2-2. WIPP CH-TRU Waste Streams by EPA Units per Volume; Time 100
(Calendar Year 2133)

Rank Order	Waste Stream ID	Waste Stream Average EPA Units per Volume			
		[EPA/m ³]	EPA Units	% of Total	Cum. %
1	RL-W751	5.85E+00	1.23E+00	0.0%	0.0%
2	LA-OS-00-01	4.40E+00	2.21E+02	3.2%	3.2%
3	W006-773A-VIT	3.72E+00	2.31E+00	0.0%	3.2%
4	IN-W358.948	3.28E+00	6.89E-01	0.0%	3.2%
5	RL-W750	3.24E+00	1.36E+00	0.0%	3.2%
6	W053-773A-VIT	2.76E+00	1.71E+00	0.0%	3.3%
7	RF-TT-0334	1.26E+00	5.14E+00	0.1%	3.3%
8	RL-W656	1.21E+00	3.78E+00	0.1%	3.4%
9	RF-MT-0299	1.14E+00	3.53E+01	0.5%	3.9%
10	RF-TT0299	1.13E+00	2.37E-01	0.0%	3.9%
11	IN-W358.855	9.92E-01	3.30E+00	0.1%	4.0%
12	RF-MT0001	9.72E-01	7.92E+00	0.1%	4.1%
13	RF-MT0002	9.68E-01	6.10E-01	0.0%	4.1%
14	RL-W665	6.76E-01	5.76E+00	0.1%	4.2%
15	RL-W660	6.61E-01	1.37E+00	0.0%	4.2%
16	RL-W655	6.51E-01	9.51E-01	0.0%	4.2%
17	RL-W753	5.91E-01	7.19E+00	0.1%	4.3%
18	RL-W659	5.72E-01	2.40E-01	0.0%	4.3%
19	RL-T132	5.71E-01	1.64E+01	0.2%	4.5%
20	RF-TT0802	5.63E-01	3.18E+01	0.5%	5.0%
21	RF-TT0809	5.63E-01	2.29E+00	0.0%	5.2%
22	BCLCH-MT01	5.59E-01	2.93E+00	0.0%	5.1%
23	RF-TT433X	5.20E-01	3.28E-01	0.0%	5.1%
24	RF-TT429R	5.19E-01	1.08E+00	0.0%	5.1%
25	WP-RF005.02	4.77E-01	3.73E+01	0.5%	5.6%
26	RL-W709	4.42E-01	9.28E-02	0.0%	5.6%
27	RF-TT436R	4.31E-01	3.06E+00	0.0%	5.7%
28	RF-TT454X	4.28E-01	1.80E-01	0.0%	5.7%
29	OR-W201	3.99E-01	3.44E+01	0.5%	6.2%
30	WP-RF009.01	3.83E-01	4.97E+02	7.1%	13.3%
31	WP-RF005.01	3.65E-01	4.40E+01	0.6%	13.9%
32	RF-MT0371	3.50E-01	7.15E+00	0.1%	14.0%
33	RF-TT0371	3.47E-01	7.29E-02	0.0%	14.0%
34	IN-W249.527	3.42E-01	2.28E+00	0.0%	14.1%
35	RF-TT398R	3.40E-01	2.38E+01	0.3%	14.4%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
Sum =		N/A	6.98E+03	100.0%	N/A

Table 4.2-3. WIPP CH-TRU Waste Streams by EPA Units per Volume; Time 125
(Calendar Year 2158)

Rank Order	Waste Stream ID	Waste Stream Average EPA Units per Volume			
		[EPA/m ³]	EPA Units	% of Total	Cum. %
1	RL-W751	5.61E+00	1.18E+00	0.0%	0.0%
2	W006-773A-VIT	3.72E+00	2.30E+00	0.0%	0.1%
3	LA-OS-00-01	3.66E+00	1.84E+02	2.8%	2.9%
4	RL-W750	3.10E+00	1.30E+00	0.0%	2.9%
5	W053-773A-VIT	2.76E+00	1.71E+00	0.0%	2.9%
6	IN-W358.948	2.72E+00	5.70E-01	0.0%	2.9%
7	RF-TT-0334	1.25E+00	5.10E+00	0.1%	3.0%
8	RL-W656	1.16E+00	3.63E+00	0.1%	3.1%
9	RF-MT-0299	1.12E+00	3.47E+01	0.5%	3.6%
10	RF-TT0299	1.11E+00	2.33E-01	0.0%	3.6%
11	RF-MT0001	9.39E-01	7.65E+00	0.1%	3.7%
12	RF-MT0002	9.34E-01	5.89E-01	0.0%	3.7%
13	IN-W358.855	8.21E-01	2.73E+00	0.0%	3.8%
14	RL-W665	6.41E-01	5.47E+00	0.1%	3.9%
15	RL-W660	6.29E-01	1.31E+00	0.0%	3.9%
16	RL-W655	6.21E-01	9.07E-01	0.0%	3.9%
17	RL-T132	5.68E-01	1.63E+01	0.3%	4.1%
18	RL-W753	5.67E-01	6.89E+00	0.1%	4.3%
19	RF-TT0802	5.56E-01	3.14E+01	0.5%	4.7%
20	RF-TT0809	5.56E-01	2.26E+00	0.0%	4.8%
21	RL-W659	5.47E-01	2.30E-01	0.0%	4.8%
22	RF-TT433X	5.06E-01	3.19E-01	0.0%	4.8%
23	RF-TT429R	5.05E-01	1.05E+00	0.0%	4.8%
24	BCLCH-MT01	4.66E-01	2.44E+00	0.0%	4.8%
25	WP-RF005.02	4.65E-01	3.64E+01	0.6%	5.4%
26	RL-W709	4.39E-01	9.22E-02	0.0%	5.4%
27	RF-TT436R	4.22E-01	2.99E+00	0.1%	5.4%
28	RF-TT454X	4.19E-01	1.76E-01	0.0%	5.4%
29	OR-W201	3.84E-01	3.32E+01	0.5%	6.0%
30	WP-RF009.01	3.75E-01	4.88E+02	7.5%	13.4%
31	WP-RF005.01	3.58E-01	4.31E+01	0.7%	14.1%
32	RF-MT0371	3.47E-01	7.08E+00	0.1%	14.2%
33	RF-TT0371	3.44E-01	7.22E-02	0.0%	14.2%
34	RF-TT398R	3.35E-01	2.34E+01	0.4%	14.6%
35	RF-TT394P	3.28E-01	2.03E-01	0.0%	14.6%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	N/A	6.51E+03	100.0 %	N/A

Table 4.2-4. WIPP CH-TRU Waste Streams by EPA Units per Volume; Time 175
(Calendar Year 2208)

Rank Order	Waste Stream ID	Waste Stream Average EPA Units per Volume			
		[EPA/m ³]	EPA Units	% of Total	Cum. %
1	RL-W751	5.15E+00	1.08E+00	0.0%	0.0%
2	W006-773A-VIT	3.71E+00	2.30E+00	0.0%	0.1%
3	RL-W750	2.85E+00	1.20E+00	0.0%	0.1%
4	W053-773A-VIT	2.76E+00	1.71E+00	0.0%	0.1%
5	LA-OS-00-01	2.55E+00	1.28E+02	2.2%	2.3%
6	IN-W358.948	1.87E+00	3.93E-01	0.0%	2.3%
7	RF-TT-0334	1.24E+00	5.03E+00	0.1%	2.4%
8	RF-MT-0299	1.08E+00	3.36E+01	0.6%	3.0%
9	RF-TT0299	1.07E+00	2.26E-01	0.0%	3.0%
10	RL-W656	1.07E+00	3.35E+00	0.1%	3.1%
11	RF-MT0001	8.76E-01	7.14E+00	0.1%	3.2%
12	RF-MT0002	8.71E-01	5.49E-01	0.0%	3.2%
13	RL-W665	5.79E-01	4.94E+00	0.1%	3.3%
14	RL-W660	5.72E-01	1.19E+00	0.0%	3.3%
15	RL-W655	5.67E-01	8.28E-01	0.0%	3.3%
16	IN-W358.855	5.65E-01	1.88E+00	0.0%	3.4%
17	RL-T132	5.61E-01	1.61E+01	0.3%	3.6%
18	RF-TT0809	5.43E-01	2.21E+00	0.0%	3.7%
19	RF-TT0802	5.43E-01	3.06E+01	0.5%	4.2%
20	RL-W753	5.21E-01	6.33E+00	0.1%	4.3%
21	RL-W659	5.02E-01	2.11E-01	0.0%	4.3%
22	RF-TT429R	4.80E-01	9.98E-01	0.0%	4.3%
23	RF-TT433X	4.80E-01	3.02E-01	0.0%	4.3%
24	WP-RF005.02	4.43E-01	3.47E+01	0.6%	4.9%
25	RL-W709	4.34E-01	9.11E-02	0.0%	4.9%
26	RF-TT436R	4.04E-01	2.87E+00	0.1%	5.0%
27	RF-TT454X	4.01E-01	1.69E-01	0.0%	5.0%
28	WP-RF009.01	3.62E-01	4.70E+02	8.1%	13.1%
29	OR-W201	3.59E-01	3.09E+01	0.5%	13.7%
30	WP-RF005.01	3.45E-01	4.16E+01	0.7%	14.4%
31	RF-MT0371	3.40E-01	6.94E+00	0.1%	14.5%
32	RF-TT0371	3.37E-01	7.08E-02	0.0%	14.5%
33	BCLCH-MT01	3.27E-01	1.71E+00	0.0%	14.5%
34	RF-TT398R	3.24E-01	2.26E+01	0.4%	14.9%
35	RF-TT394P	3.22E-01	2.00E-01	0.0%	14.9%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	N/A	5.77E+03	100.0 %	N/A

Table 4.2-5. WIPP CH-TRU Waste Streams by EPA Units per Volume; Time 350
(Calendar Year 2383)

Rank Order	Waste Stream ID	Waste Stream Average EPA Units per Volume			
		[EPA/m ³]	EPA Units	% of Total	Cum. %
1	RL-W751	3.86E+00	8.11E-01	0.0%	0.0%
2	W006-773A-VIT	3.69E+00	2.29E+00	0.1%	0.1%
3	W053-773A-VIT	2.74E+00	1.70E+00	0.0%	0.1%
4	RL-W750	2.14E+00	8.97E-01	0.0%	0.1%
5	RF-TT-0334	1.19E+00	4.83E+00	0.1%	0.2%
6	RF-MT-0299	9.81E-01	3.05E+01	0.7%	0.9%
7	RF-TT0299	9.74E-01	2.05E-01	0.0%	0.9%
8	LA-OS-00-01	8.18E-01	4.11E+01	0.9%	1.9%
9	RL-W656	8.09E-01	2.53E+00	0.1%	1.9%
10	RF-MT0001	6.91E-01	5.63E+00	0.1%	2.0%
11	RF-MT0002	6.88E-01	4.33E-01	0.0%	2.1%
12	IN-W358.948	5.63E-01	1.18E-01	0.0%	2.1%
13	RL-T132	5.44E-01	1.56E+01	0.4%	2.4%
14	RF-TT0809	5.06E-01	2.06E+00	0.1%	2.5%
15	RF-TT0802	5.06E-01	2.86E+01	0.6%	3.1%
16	RL-W660	4.21E-01	8.76E-01	0.0%	3.1%
17	RL-W665	4.20E-01	3.58E+00	0.1%	3.2%
18	RL-W709	4.19E-01	8.80E-02	0.0%	3.2%
19	RL-W655	4.19E-01	6.12E-01	0.0%	3.2%
20	RF-TT429R	4.06E-01	8.44E-01	0.0%	3.2%
21	RF-TT433X	4.03E-01	2.54E-01	0.0%	3.2%
22	RL-W753	3.90E-01	4.74E+00	0.1%	3.4%
23	WP-RF005.02	3.78E-01	2.96E+01	0.7%	4.0%
24	RL-W659	3.74E-01	1.57E-01	0.0%	4.0%
25	RF-TT436R	3.53E-01	2.50E+00	0.1%	4.1%
26	RF-TT454X	3.51E-01	1.47E-01	0.0%	4.1%
27	WP-RF009.01	3.21E-01	4.17E+02	9.4%	13.5%
28	RF-MT0371	3.21E-01	6.56E+00	0.2%	13.7%
29	RF-TT0371	3.18E-01	6.68E-02	0.0%	13.7%
30	WP-RF005.01	3.08E-01	3.72E+01	0.8%	14.5%
31	RF-TT394P	3.08E-01	1.91E-01	0.0%	14.5%
32	RF-TT395P	3.07E-01	2.55E-01	0.0%	14.5%
33	RF-TT396P	3.04E-01	6.37E-02	0.0%	14.5%
34	OR-W201	2.96E-01	2.56E+01	0.6%	15.1%
35	RF-TT398R	2.93E-01	2.05E+01	0.5%	15.5%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	N/A	4.43E+03	100.0 %	N/A

Table 4.2-6. WIPP CH-TRU Waste Streams by EPA Units per Volume; Time 1,000
(Calendar Year 3033)

Rank Order	Waste Stream ID	Waste Stream Average EPA Units per Volume			
		[EPA/m ³]	EPA Units	% of Total	Cum. %
1	W006-773A-VIT	3.62E+00	2.25E+00	0.1%	0.1%
2	W053-773A-VIT	2.69E+00	1.67E+00	0.1%	0.1%
3	RL-W751	1.37E+00	2.87E-01	0.0%	0.1%
4	RF-TT-0334	1.09E+00	4.43E+00	0.1%	0.3%
5	RF-MT-0299	7.77E-01	2.41E+01	0.8%	1.0%
6	RF-TT0299	7.72E-01	1.62E-01	0.0%	1.0%
7	RL-W750	7.58E-01	3.18E-01	0.0%	1.0%
8	RL-T132	5.07E-01	1.45E+01	0.5%	1.5%
9	RF-TT0809	4.30E-01	1.75E+00	0.1%	1.5%
10	RF-TT0802	4.30E-01	2.43E+01	0.8%	2.3%
11	RL-W709	3.87E-01	8.12E-02	0.0%	2.3%
12	RF-MT0001	3.21E-01	2.62E+00	0.1%	2.4%
13	RF-MT0002	3.20E-01	2.01E-01	0.0%	2.4%
14	RL-W656	2.86E-01	8.92E-01	0.0%	2.4%
15	RF-MT0371	2.82E-01	5.76E+00	0.2%	2.6%
16	RF-TT0371	2.80E-01	5.87E-02	0.0%	2.6%
17	RF-TT394P	2.76E-01	1.71E-01	0.0%	2.6%
18	RF-TT395P	2.76E-01	2.29E-01	0.0%	2.6%
19	RF-TT396P	2.73E-01	5.72E-02	0.0%	2.6%
20	RF-TT429R	2.56E-01	5.32E-01	0.0%	2.6%
21	RF-TT390P	2.53E-01	1.06E-01	0.0%	2.6%
22	RF-TT436R	2.50E-01	1.77E+00	0.1%	2.7%
23	WP-RF005.02	2.48E-01	1.94E+01	0.6%	3.3%
24	RF-TT454X	2.48E-01	1.04E-01	0.0%	3.3%
25	RF-TT433X	2.47E-01	1.56E-01	0.0%	3.3%
26	WP-RF009.01	2.39E-01	3.11E+02	9.6%	12.9%
27	RF-TT310P	2.35E-01	6.37E-01	0.0%	12.9%
28	WP-RF005.01	2.34E-01	2.82E+01	0.9%	13.8%
29	RF-TT398R	2.31E-01	1.61E+01	0.5%	14.3%
30	RF-TT392P	2.21E-01	1.44E+01	0.5%	14.7%
31	RF-TT0392	2.20E-01	4.61E-02	0.0%	14.7%
32	RF-TT0414	2.17E-01	1.40E+00	0.0%	14.8%
33	RF-TT411R	2.17E-01	1.67E+00	0.1%	14.8%
34	RF-TT0409	2.15E-01	4.52E-02	0.0%	14.8%
35	RF-TT0412	2.15E-01	4.52E-02	0.0%	14.8%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	N/A	3.23E+03	100.0 %	N/A

Table 4.2-7. WIPP CH-TRU Waste Streams by EPA Units per Volume; Time 3,000
(Calendar Year 5033)

Rank Order	Waste Stream ID	Waste Stream Average EPA Units per Volume			
		[EPA/m ³]	EPA Units	% of Total	Cum. %
1	W006-773A-VIT	3.42E+00	2.12E+00	0.1%	0.1%
2	W053-773A-VIT	2.54E+00	1.58E+00	0.1%	0.1%
3	RF-TT-0334	9.70E-01	3.95E+00	0.2%	0.3%
4	RF-MT-0299	6.27E-01	1.95E+01	0.8%	1.0%
5	RF-TT0299	6.24E-01	1.31E-01	0.0%	1.1%
6	RL-T132	4.56E-01	1.31E+01	0.5%	1.6%
7	RF-TT0809	3.66E-01	1.49E+00	0.1%	1.6%
8	RF-TT0802	3.65E-01	2.06E+01	0.8%	2.4%
9	RL-W709	3.46E-01	7.26E-02	0.0%	2.4%
10	RF-MT0371	2.45E-01	5.00E+00	0.2%	2.6%
11	RF-TT394P	2.43E-01	1.51E-01	0.0%	2.6%
12	RF-TT395P	2.43E-01	2.02E-01	0.0%	2.6%
13	RF-TT0371	2.43E-01	5.10E-02	0.0%	2.6%
14	RF-TT396P	2.40E-01	5.04E-02	0.0%	2.6%
15	RF-TT390P	2.25E-01	9.46E-02	0.0%	2.6%
16	RF-TT310P	2.09E-01	5.66E-01	0.0%	2.6%
17	RF-TT392P	1.98E-01	1.29E+01	0.5%	3.1%
18	RF-TT0392	1.96E-01	4.12E-02	0.0%	3.1%
19	RF-TT0414	1.91E-01	1.23E+00	0.1%	3.2%
20	RF-TT411R	1.91E-01	1.47E+00	0.1%	3.2%
21	RF-TT0409	1.89E-01	3.98E-02	0.0%	3.3%
22	RF-TT0412	1.89E-01	3.98E-02	0.0%	3.3%
23	RF-TT391P	1.89E-01	4.29E+00	0.2%	3.4%
24	WP-RF118.01	1.88E-01	2.39E+02	9.2%	12.6%
25	RF-TT0391	1.88E-01	7.88E-02	0.0%	12.6%
26	RF-MT0423	1.86E-01	1.94E-01	0.0%	12.6%
27	RF-MT0091	1.86E-01	2.76E+01	1.1%	13.7%
28	RF-TT398R	1.85E-01	1.29E+01	0.5%	14.2%
29	RF-MT0092	1.85E-01	3.97E+00	0.2%	14.4%
30	RF-TT398P	1.85E-01	7.97E+00	0.3%	14.7%
31	RF-MT420P	1.84E-01	2.97E+01	1.1%	15.8%
32	RF-MT0093	1.84E-01	4.30E+00	0.2%	16.0%
33	WP-RF009.01	1.84E-01	2.39E+02	9.2%	25.2%
34	RF-TT0398	1.83E-01	7.70E-02	0.0%	25.2%
35	RF-TT436R	1.83E-01	1.30E+00	0.1%	25.2%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	N/A	2.60E+03	100.0 %	N/A

Table 4.2-8. WIPP CH-TRU Waste Streams by EPA Units per Volume; Time 5,000
(Calendar Year 7033)

Rank Order	Waste Stream ID	Waste Stream Average EPA Units per Volume			
		[EPA/m ³]	EPA Units	% of Total	Cum. %
1	W006-773A-VIT	3.23E+00	2.00E+00	0.1%	0.1%
2	W053-773A-VIT	2.40E+00	1.49E+00	0.1%	0.2%
3	RF-TT-0334	8.94E-01	3.64E+00	0.2%	0.3%
4	RF-MT-0299	5.76E-01	1.79E+01	0.8%	1.0%
5	RF-TT0299	5.72E-01	1.20E-01	0.0%	1.1%
6	RL-T132	4.21E-01	1.21E+01	0.5%	1.6%
7	RF-TT0809	3.36E-01	1.37E+00	0.1%	1.6%
8	RF-TT0802	3.36E-01	1.90E+01	0.8%	2.4%
9	RL-W709	3.19E-01	6.70E-02	0.0%	2.4%
10	RF-MT0371	2.26E-01	4.61E+00	0.2%	2.6%
11	RF-TT394P	2.24E-01	1.39E-01	0.0%	2.6%
12	RF-TT395P	2.24E-01	1.86E-01	0.0%	2.6%
13	RF-TT0371	2.24E-01	4.69E-02	0.0%	2.6%
14	RF-TT396P	2.21E-01	4.65E-02	0.0%	2.6%
15	RF-TT390P	2.08E-01	8.73E-02	0.0%	2.6%
16	RF-TT310P	1.93E-01	5.22E-01	0.0%	2.6%
17	RF-TT392P	1.82E-01	1.19E+01	0.5%	3.1%
18	RF-TT0392	1.81E-01	3.80E-02	0.0%	3.1%
19	RF-TT0414	1.76E-01	1.14E+00	0.1%	3.2%
20	RF-TT411R	1.76E-01	1.35E+00	0.1%	3.2%
21	RF-TT0409	1.75E-01	3.67E-02	0.0%	3.2%
22	RF-TT0412	1.75E-01	3.67E-02	0.0%	3.2%
23	RF-TT391P	1.74E-01	3.96E+00	0.2%	3.4%
24	WP-RF118.01	1.73E-01	2.21E+02	9.2%	12.6%
25	RF-TT0391	1.73E-01	7.27E-02	0.0%	12.6%
26	RF-MT0423	1.72E-01	1.78E-01	0.0%	12.6%
27	RF-MT0091	1.71E-01	2.55E+01	1.1%	13.7%
28	RF-MT0092	1.70E-01	3.66E+00	0.2%	13.9%
29	RF-TT398P	1.70E-01	7.36E+00	0.3%	14.2%
30	RF-TT398R	1.70E-01	1.19E+01	0.5%	14.7%
31	RF-MT420P	1.70E-01	2.73E+01	1.1%	15.8%
32	RF-MT0093	1.70E-01	3.96E+00	0.2%	16.0%
33	RF-TT0398	1.69E-01	7.10E-02	0.0%	16.0%
34	WP-RF009.01	1.68E-01	2.19E+02	9.1%	25.1%
35	RF-TT0312	1.67E-01	9.68E+00	0.4%	25.5%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	N/A	2.40E+03	100.0 %	N/A

Table 4.2-9. WIPP CH-TRU Waste Streams by EPA Units per Volume; Time 7,500
(Calendar Year 9533).

Rank Order	Waste Stream ID	Waste Stream Average EPA Units per Volume			
		[EPA/m ³]	EPA Units	% of Total	Cum. %
1	W006-773A-VIT	3.01E+00	1.86E+00	0.1%	0.1%
2	W053-773A-VIT	2.23E+00	1.38E+00	0.1%	0.2%
3	RF-TT-0334	8.12E-01	3.31E+00	0.2%	0.3%
4	RF-MT-0299	5.23E-01	1.62E+01	0.7%	1.0%
5	RF-TT0299	5.20E-01	1.09E-01	0.0%	1.1%
6	RL-T132	3.82E-01	1.10E+01	0.5%	1.6%
7	RF-TT0809	3.06E-01	1.24E+00	0.1%	1.6%
8	RF-TT0802	3.06E-01	1.72E+01	0.8%	2.4%
9	RL-W709	2.90E-01	6.09E-02	0.0%	2.4%
10	RF-MT0371	2.05E-01	4.19E+00	0.2%	2.6%
11	RF-TT394P	2.04E-01	1.27E-01	0.0%	2.6%
12	RF-TT395P	2.04E-01	1.69E-01	0.0%	2.6%
13	RF-TT0371	2.03E-01	4.27E-02	0.0%	2.6%
14	RF-TT396P	2.01E-01	4.23E-02	0.0%	2.6%
15	RF-TT390P	1.89E-01	7.95E-02	0.0%	2.6%
16	RF-TT310P	1.75E-01	4.75E-01	0.0%	2.6%
17	RF-TT392P	1.65E-01	1.08E+01	0.5%	3.1%
18	RF-TT0392	1.64E-01	3.45E-02	0.0%	3.1%
19	RF-TT0414	1.60E-01	1.03E+00	0.1%	3.2%
20	RF-TT411R	1.60E-01	1.23E+00	0.1%	3.2%
21	RF-TT0409	1.59E-01	3.33E-02	0.0%	3.2%
22	RF-TT0412	1.59E-01	3.33E-02	0.0%	3.2%
23	RF-TT391P	1.58E-01	3.60E+00	0.2%	3.4%
24	WP-RF118.01	1.58E-01	2.01E+02	9.2%	12.6%
25	RF-TT0391	1.57E-01	6.60E-02	0.0%	12.6%
26	RF-MT0423	1.56E-01	1.62E-01	0.0%	12.6%
27	RF-MT0091	1.56E-01	2.32E+01	1.1%	13.6%
28	RF-TT398P	1.55E-01	6.68E+00	0.3%	13.9%
29	RF-MT0092	1.55E-01	3.32E+00	0.2%	14.1%
30	RF-TT398R	1.55E-01	1.08E+01	0.5%	14.6%
31	RF-MT420P	1.54E-01	2.48E+01	1.1%	15.7%
32	RF-MT0093	1.54E-01	3.59E+00	0.2%	15.9%
33	RF-TT0398	1.54E-01	6.45E-02	0.0%	15.9%
34	WP-RF009.01	1.53E-01	1.99E+02	9.1%	24.9%
35	RF-TT0312	1.52E-01	8.80E+00	0.4%	25.3%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	N/A	2.19E+03	100.0 %	N/A

Table 4.2-10. WIPP CH-TRU Waste Streams by EPA Units per Volume; Time 10,000
(Calendar Year 12033)

Rank Order	Waste Stream ID	Waste Stream Average EPA Units per Volume			
		[EPA/m ³]	EPA Units	% of Total	Cum. %
1	W006-773A-VIT	2.80E+00	1.73E+00	0.1%	0.1%
2	W053-773A-VIT	2.08E+00	1.29E+00	0.1%	0.2%
3	RF-TT-0334	7.41E-01	3.02E+00	0.2%	0.3%
4	RF-MT-0299	4.77E-01	1.48E+01	0.7%	1.0%
5	RF-TT0299	4.74E-01	9.96E-02	0.0%	1.0%
6	RL-T132	3.49E-01	1.00E+01	0.5%	1.5%
7	RF-TT0809	2.79E-01	1.13E+00	0.1%	1.6%
8	RF-TT0802	2.79E-01	1.57E+01	0.8%	2.4%
9	RL-W709	2.65E-01	5.56E-02	0.0%	2.4%
10	RF-MT0371	1.87E-01	3.82E+00	0.2%	2.6%
11	RF-TT394P	1.86E-01	1.16E-01	0.0%	2.6%
12	RF-TT395P	1.86E-01	1.55E-01	0.0%	2.6%
13	RF-TT0371	1.85E-01	3.89E-02	0.0%	2.6%
14	RF-TT396P	1.84E-01	3.86E-02	0.0%	2.6%
15	RF-TT390P	1.73E-01	7.26E-02	0.0%	2.6%
16	RF-TT310P	1.60E-01	4.33E-01	0.0%	2.6%
17	RF-TT392P	1.51E-01	9.85E+00	0.5%	3.1%
18	RF-TT0392	1.50E-01	3.15E-02	0.0%	3.1%
19	RF-TT0414	1.46E-01	9.41E-01	0.1%	3.2%
20	RF-TT411R	1.46E-01	1.12E+00	0.1%	3.2%
21	RF-TT0409	1.45E-01	3.04E-02	0.0%	3.2%
22	RF-TT0412	1.45E-01	3.04E-02	0.0%	3.2%
23	RF-TT391P	1.44E-01	3.28E+00	0.2%	3.4%
24	WP-RF118.01	1.44E-01	1.83E+02	9.1%	12.5%
25	RF-TT0391	1.43E-01	6.02E-02	0.0%	12.5%
26	RF-MT0423	1.42E-01	1.48E-01	0.0%	12.5%
27	RF-MT0091	1.42E-01	2.11E+01	1.1%	13.6%
28	RF-TT398P	1.41E-01	6.10E+00	0.3%	13.9%
29	RF-MT0092	1.41E-01	3.03E+00	0.2%	14.0%
30	RF-TT398R	1.41E-01	9.84E+00	0.5%	14.5%
31	RF-MT420P	1.41E-01	2.27E+01	1.1%	15.6%
32	RF-MT0093	1.40E-01	3.28E+00	0.2%	15.8%
33	RF-TT0398	1.40E-01	5.88E-02	0.0%	15.8%
34	WP-RF009.01	1.40E-01	1.81E+02	9.0%	24.8%
35	RF-TT0312	1.38E-01	8.02E+00	0.4%	25.2%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	N/A	2.01E+03	100.00 %	N/A

4.3 TOTAL EPA UNITS

The EPA Unit for a radionuclide is the quotient of the initial source term activity (in Ci) of that radionuclide divided by a quantity called the release limit (in Ci) for the same radionuclide. The principal contributing isotopes^a are: ²⁴¹Am, ²³⁸Pu^b, ²³⁹Pu, ²⁴⁰Pu and ²³⁴U (see Sections 4.5, 4.7, 4.8, 4.9 and 4.11, respectively).

The total EPA Unit values in Table 4.3-1 through Table 4.3-10 were provided to illustrate which waste streams are the primary contributors to EPA Units over the entire population of waste. Each table identifies 35 waste streams that offer the greatest contribution during each of the ten time intervals output by the code EPAUNI. All 690 waste streams and their total EPA Units can be found in the file EPU_CRA1BC_CH.DIA in the CRA library CRA1BC_EPU. EPA Units per Drum, calculated by EPAUNI 1.15A, are provided as supplemental information.

Tables 4.3-1 through 4.3-10 also show that as the nuclides decay, based on the radioisotopic activities of each waste stream, their respective contributions over time change in relation to the contribution of other waste streams. Since the waste stream unit values reflect the contributing isotopic activities, their relative contributions to EPA Units are identical to the relative contributions to total EPA curies (see Section 4.4).

Thirteen of the top thirty-five contributing waste streams at closure are Savannah River Site (SRS) waste streams. Of these, four are found in the top seven contributing waste streams at closure, T001-221H-HET, W027-221F-HET, T001-221F-HET (heterogeneous debris including sludges, resins and large metal equipment) and T001-772F-HET (debris including booties, lab coats, and floor sweepings contaminated with solvents) (see Table 4.3-1). The relative contributions of these waste streams remain dominant contributors over time, because of their higher quantities of longer-lived radionuclides ²³⁹Pu and ²³⁴U (see Sections 4.8 and 4.11). By time interval 10,000 years (calendar year 12033), 11 SRS waste streams are among the 35 waste streams that most contribute to total EPA Units (see Table 4.3-10).

Like the SRS waste streams above, INEEL stream IN-W216.98 (solidified inorganics, primarily wet sludges produced by treating aqueous process wastes) starts as, and remains, a major contributor over time for the same reasons. LANL waste stream, LA-OS-00-01 (solid actinides encapsulated in metal jackets) however drops off the top thirty-five lists some time after 350 years (calendar year 2383) due to its higher concentration of short-lived isotopes (see Table 4.3-5) as described in Section 4.2. In contrast, the RFETS waste streams already emplaced in the WIPP, WP-RF009.01 (pyrochemical salts) and WP-RF118.01 (incinerator ash and process residues) increases in rank over time.

^a Two of the parent nuclides (²⁴⁴Cm and ²⁴¹Pu) contribute indirectly only. These contributions are not meaningful at closure, but only in later time frames after these short-lived parents have decayed to more dominant isotopes (see Sections 4.6 and 4.10).

^b ²³⁸Pu contributes both directly and indirectly by decaying to a contributing daughter isotope ²³⁴U (see Section 4.7).

Table 4.3-1. WIPP CH-TRU Waste Streams by Total EPA Units; Time 0
(Calendar Year 2033)

Rank Order	Waste Stream ID	Waste Stream Total EPA Units			
		EPA Units	EPA Units/drum	% of Total	Cum. %
1	T001-221H-HET	1.15E+03	6.12E-02	11.6%	11.6%
2	W027-221F-HET	8.04E+02	5.49E-02	8.1%	19.7%
3	IN-W216.98	6.89E+02	1.13E-02	7.0%	26.6%
4	T001-221F-HET	5.79E+02	6.13E-02	5.8%	32.5%
5	WP-RF009.01	5.38E+02	8.62E-02	5.4%	37.9%
6	LA-OS-00-01	4.68E+02	1.94E+00	4.7%	42.6%
7	T001-772F-HET	4.32E+02	6.13E-02	4.4%	47.0%
8	RL-T107	4.20E+02	1.42E-02	4.2%	51.3%
9	IN-BN-510	3.90E+02	4.08E-03	3.9%	55.2%
10	W027-221H-HET	3.51E+02	5.48E-02	3.6%	58.7%
11	WP-RF118.01	3.34E+02	5.46E-02	3.4%	62.1%
12	W027-773A-HET	2.86E+02	5.47E-02	2.9%	65.0%
13	RL-W513	2.54E+02	8.43E-03	2.6%	67.6%
14	IN-ICP-002	2.48E+02	4.14E-03	2.5%	70.1%
15	W027-999-HET	2.33E+02	5.47E-02	2.4%	72.4%
16	W026-221F-HET	2.31E+02	6.13E-02	2.3%	74.7%
17	W027-772F-HET	1.92E+02	5.48E-02	1.9%	76.7%
18	W026-221H-HET	1.73E+02	6.12E-02	1.8%	78.4%
19	IN-ICP-005	1.44E+02	4.14E-03	1.5%	79.9%
20	WP-INW216.001-	1.11E+02	2.61E-02	1.1%	81.0%
21	W027-235F-HET	1.06E+02	5.47E-02	1.1%	82.1%
22	IN-ICP-003	1.05E+02	4.14E-03	1.1%	83.1%
23	RL-W575	6.54E+01	4.80E-02	0.7%	83.8%
24	T001-773A-HET	6.00E+01	6.14E-02	0.6%	84.4%
25	WP-RF003.01	5.63E+01	5.05E-02	0.6%	8450%
26	T001-235F-HET	5.45E+01	6.14E-02	0.6%	85.5%
27	WP-RF006.01	5.12E+01	4.83E-02	0.5%	86.0%
28	WP-RF005.01	4.74E+01	8.18E-02	0.5%	86.5%
29	WP-RF005.02	4.13E+01	1.10E-01	0.4%	86.9%
30	LL-T002	4.07E+01	5.62E-03	0.4%	87.3%
31	RF-MT420P	4.00E+01	5.17E-02	0.4%	87.7%
32	OR-W201	3.94E+01	9.52E-02	0.4%	88.1%
33	RF-MT-0299	3.76E+01	2.52E-01	0.4%	88.5%
34	RF-MT0091	3.61E+01	5.05E-02	0.4%	88.9%
35	RF-TT0802	3.32E+01	1.23E-01	0.3%	89.2%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	9.90E+03	N/A	100.0 %	N/A

Table 4.3-2. WIPP CH-TRU Waste Streams by Total EPA Units; Time 100
(Calendar Year 2133)

Rank Order	Waste Stream ID	Waste Stream Total EPA Units			
		EPA Units	EPA Units/drum	% of Total	Cum. %
1	T001-221H-HET	6.45E+02	3.45E-02	9.3%	9.3%
2	IN-W216.98	5.91E+02	9.66E-03	8.5%	17.7%
3	WP-RF009.01	4.97E+02	7.97E-02	7.1%	24.9%
4	W027-221F-HET	4.63E+02	3.16E-02	6.6%	31.5%
5	T001-221F-HET	3.26E+02	3.45E-02	4.7%	36.2%
6	WP-RF118.01	3.25E+02	5.31E-02	4.7%	40.8%
7	IN-BN-510	2.84E+02	2.98E-03	4.1%	44.9%
8	T001-772F-HET	2.43E+02	3.45E-02	3.5%	48.4%
9	RL-T107	2.43E+02	8.20E-03	3.5%	51.9%
10	RL-W513	2.21E+02	7.33E-03	3.2%	55.0%
11	LA-OS-00-01	2.21E+02	9.15E-01	3.2%	58.2%
12	IN-ICP-002	2.19E+02	3.65E-03	3.1%	61.3%
13	W027-221H-HET	2.02E+02	3.15E-02	2.9%	64.2%
14	W027-773A-HET	1.65E+02	3.15E-02	2.4%	66.6%
15	W027-999-HET	1.34E+02	3.15E-02	1.9%	68.5%
16	W026-221F-HET	1.30E+02	3.45E-02	1.9%	70.4%
17	IN-ICP-005	1.27E+02	3.65E-03	1.8%	72.2%
18	W027-772F-HET	1.11E+02	3.15E-02	1.6%	73.8%
19	W026-221H-HET	9.74E+01	3.45E-02	1.4%	75.2%
20	WP-INW216.001-	9.59E+01	2.25E-02	1.4%	76.5%
21	IN-ICP-003	9.22E+01	3.65E-03	1.3%	77.9%
22	RL-W575	6.43E+01	4.71E-02	0.9%	78.8%
23	W027-235F-HET	6.08E+01	3.15E-02	0.9%	79.7%
24	WP-RF003.01	5.49E+01	4.92E-02	0.8%	80.4%
25	WP-RF006.01	4.96E+01	4.67E-02	0.7%	81.2%
26	WP-RF005.01	4.40E+01	7.59E-02	0.6%	81.8%
27	RF-MT420P	3.89E+01	5.03E-02	0.6%	82.3%
28	LL-T002	3.86E+01	5.33E-03	0.6%	82.9%
29	WP-RF005.02	3.73E+01	9.92E-02	0.5%	83.4%
30	RF-MT-0299	3.53E+01	2.36E-01	0.5%	83.9%
31	RF-MT0091	3.52E+01	4.93E-02	0.5%	84.4%
32	OR-W201	3.44E+01	8.31E-02	0.5%	84.9%
33	T001-773A-HET	3.37E+01	3.46E-02	0.5%	85.4%
34	RF-TT0802	3.18E+01	1.17E-01	0.5%	85.9%
35	T001-235F-HET	3.07E+01	3.45E-02	0.4%	86.3%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
Sum =		6.98E+03	N/A	100.0 %	N/A

Table 4.3-3. WIPP CH-TRU Waste Streams by Total EPA Units; Time 125
(Calendar Year 2158)

Rank Order	Waste Stream ID	Waste Stream Total EPA Units			
		EPA Units	EPA Units/drum	% of Total	Cum. %
1	T001-221H-HET	5.70E+02	3.05E-02	8.8%	8.8%
2	IN-W216.98	5.69E+02	9.30E-03	8.8%	17.5%
3	WP-RF009.01	4.88E+02	7.82E-02	7.5%	25.0%
4	W027-221F-HET	4.12E+02	2.81E-02	6.3%	31.3%
5	WP-RF118.01	3.22E+02	5.26E-02	4.9%	36.3%
6	T001-221F-HET	2.88E+02	3.05E-02	4.4%	40.7%
7	IN-BN-510	2.68E+02	2.80E-03	4.1%	44.8%
8	RL-T107	2.16E+02	7.29E-03	3.3%	48.1%
9	T001-772F-HET	2.15E+02	3.05E-02	3.3%	51.5%
10	RL-W513	2.13E+02	7.08E-03	3.3%	54.7%
11	IN-ICP-002	2.12E+02	3.54E-03	3.3%	58.0%
12	LA-OS-00-01	1.84E+02	7.62E-01	2.8%	60.8%
13	W027-221H-HET	1.80E+02	2.81E-02	2.8%	63.6%
14	W027-773A-HET	1.47E+02	2.80E-02	2.3%	65.8%
15	IN-ICP-005	1.23E+02	3.55E-03	1.9%	67.7%
16	W027-999-HET	1.19E+02	2.80E-02	1.8%	69.6%
17	W026-221F-HET	1.15E+02	3.05E-02	1.8%	71.3%
18	W027-772F-HET	9.83E+01	2.81E-02	1.5%	72.8%
19	WP-INW216.001-	9.24E+01	2.17E-02	1.4%	74.3%
20	IN-ICP-003	8.95E+01	3.54E-03	1.4%	75.6%
21	W026-221H-HET	8.60E+01	3.05E-02	1.3%	77.0%
22	RL-W575	6.16E+01	4.52E-02	1.0%	77.9%
23	WP-RF003.01	5.45E+01	4.88E-02	0.8%	78.8%
24	W027-235F-HET	5.41E+01	2.80E-02	0.8%	79.6%
25	WP-RF006.01	4.92E+01	4.64E-02	0.8%	80.3%
26	WP-RF005.01	4.31E+01	7.45E-02	0.7%	81.0%
27	RF-MT420P	3.86E+01	4.99E-02	0.6%	81.6%
28	LL-T002	3.78E+01	5.22E-03	0.6%	82.2%
29	WP-RF005.02	3.64E+01	9.68E-02	0.6%	82.7%
30	RF-MT0091	3.50E+01	4.89E-02	0.5%	83.3%
31	RF-MT-0299	3.47E+01	2.33E-01	0.5%	83.8%
32	OR-W201	3.32E+01	8.00E-02	0.5%	84.3%
33	RF-TT0802	3.14E+01	1.16E-01	0.5%	84.8%
34	T001-773A-HET	2.98E+01	3.06E-02	0.5%	85.3%
35	RL-T140	2.84E+01	4.28E-02	0.4%	85.7%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	6.51E+03	N/A	100.0 %	N/A

Table 4.3-4. WIPP CH-TRU Waste Streams by Total EPA Units; Time 175
(Calendar Year 2208)

Rank Order	Waste Stream ID	Waste Stream Total EPA Units			
		EPA Units	EPA Units/drum	% of Total	Cum. %
1	IN-W216.98	5.28E+02	8.62E-03	9.1%	9.1%
2	WP-RF009.01	4.70E+02	7.53E-02	8.1%	17.3%
3	T001-221H-HET	4.58E+02	2.45E-02	7.9%	25.2%
4	W027-221F-HET	3.35E+02	2.29E-02	5.8%	31.0%
5	WP-RF118.01	3.16E+02	5.17E-02	5.5%	36.5%
6	IN-BN-510	2.42E+02	2.53E-03	4.2%	40.7%
7	T001-221F-HET	2.31E+02	2.45E-02	4.0%	44.7%
8	IN-ICP-002	2.01E+02	3.35E-03	3.5%	48.2%
9	RL-W513	2.00E+02	6.64E-03	3.5%	51.7%
10	RL-T107	1.75E+02	5.92E-03	3.0%	54.7%
11	T001-772F-HET	1.73E+02	2.45E-02	3.0%	57.7%
12	W027-221H-HET	1.47E+02	2.29E-02	2.5%	60.2%
13	LA-OS-00-01	1.28E+02	5.32E-01	2.2%	62.5%
14	W027-773A-HET	1.19E+02	2.28E-02	2.1%	64.5%
15	IN-ICP-005	1.17E+02	3.35E-03	2.0%	66.5%
16	W027-999-HET	9.71E+01	2.28E-02	1.7%	68.2%
17	W026-221F-HET	9.26E+01	2.45E-02	1.6%	69.8%
18	WP-INW216.001-	8.58E+01	2.01E-02	1.5%	71.3%
19	IN-ICP-003	8.47E+01	3.35E-03	1.5%	72.8%
20	W027-772F-HET	8.01E+01	2.28E-02	1.4%	74.2%
21	W026-221H-HET	6.91E+01	2.45E-02	1.2%	75.4%
22	RL-W575	5.67E+01	4.15E-02	1.0%	76.4%
23	WP-RF003.01	5.37E+01	4.81E-02	0.9%	77.3%
24	WP-RF006.01	4.84E+01	4.57E-02	0.8%	78.1%
25	W027-235F-HET	4.41E+01	2.28E-02	0.8%	78.9%
26	WP-RF005.01	4.16E+01	7.19E-02	0.7%	79.6%
27	RF-MT420P	3.81E+01	4.92E-02	0.7%	80.3%
28	LL-T002	3.64E+01	5.03E-03	0.6%	80.9%
29	WP-RF005.02	3.47E+01	9.22E-02	0.6%	81.5%
30	RF-MT0091	3.45E+01	4.83E-02	0.6%	82.1%
31	RF-MT-0299	3.36E+01	2.25E-01	0.6%	82.7%
32	OR-W201	3.09E+01	7.47E-02	0.5%	83.2%
33	RF-TT0802	3.06E+01	1.13E-01	0.5%	83.7%
34	RL-T140	2.78E+01	4.19E-02	0.5%	84.2%
35	RL-T137	2.72E+01	3.74E-02	0.5%	84.7%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	5.77E+03	N/A	100.0 %	N/A

Table 4.3-5. WIPP CH-TRU Waste Streams by Total EPA Units; Time 350
(Calendar Year 2383)

Rank Order	Waste Stream ID	Waste Stream Total EPA Units			
		EPA Units	EPA Units/drum	% of Total	Cum. %
1	WP-RF009.01	4.17E+02	6.69E-02	9.4%	9.4%
2	IN-W216.98	4.06E+02	6.63E-03	9.2%	18.6%
3	WP-RF118.01	3.02E+02	4.93E-02	6.8%	25.4%
4	T001-221H-HET	2.83E+02	1.51E-02	6.4%	31.8%
5	W027-221F-HET	2.15E+02	1.47E-02	4.9%	36.7%
6	IN-BN-510	1.97E+02	2.06E-03	4.4%	41.1%
7	IN-ICP-002	1.69E+02	2.82E-03	3.8%	44.9%
8	RL-W513	1.67E+02	5.54E-03	3.8%	48.7%
9	T001-221F-HET	1.43E+02	1.51E-02	3.2%	51.9%
10	RL-T107	1.11E+02	3.76E-03	2.5%	54.4%
11	T001-772F-HET	1.07E+02	1.51E-02	2.4%	56.8%
12	IN-ICP-005	9.81E+01	2.82E-03	2.2%	59.0%
13	W027-221H-HET	9.43E+01	1.47E-02	2.1%	61.2%
14	W027-773A-HET	7.67E+01	1.47E-02	1.7%	62.9%
15	IN-ICP-003	7.13E+01	2.82E-03	1.6%	64.5%
16	WP-INW216.001-	6.66E+01	1.56E-02	1.5%	66.0%
17	W027-999-HET	6.24E+01	1.46E-02	1.4%	67.4%
18	W026-221F-HET	5.73E+01	1.52E-02	1.3%	68.7%
19	W027-772F-HET	5.15E+01	1.47E-02	1.2%	69.9%
20	WP-RF003.01	5.14E+01	4.61E-02	1.2%	71.0%
21	WP-RF006.01	4.64E+01	4.37E-02	1.1%	72.1%
22	W026-221H-HET	4.27E+01	1.51E-02	1.0%	73.0%
23	RL-W575	4.25E+01	3.12E-02	1.0%	74.0%
24	LA-OS-00-01	4.11E+01	1.70E-01	0.9%	74.9%
25	WP-RF005.01	3.72E+01	6.42E-02	0.8%	75.8%
26	RF-MT420P	3.66E+01	4.73E-02	0.8%	76.6%
27	RF-MT0091	3.34E+01	4.67E-02	0.8%	77.4%
28	LL-T002	3.27E+01	4.51E-03	0.7%	78.1%
29	RF-MT-0299	3.05E+01	2.04E-01	0.7%	78.8%
30	WP-RF005.02	2.96E+01	7.87E-02	0.7%	79.5%
31	RF-TT0802	2.86E+01	1.05E-01	0.6%	80.1%
32	W027-235F-HET	2.84E+01	1.47E-02	0.6%	80.7%
33	RL-T140	2.61E+01	3.94E-02	0.6%	81.3%
34	RL-T137	2.58E+01	3.54E-02	0.6%	81.9%
35	OR-W201	2.56E+01	6.17E-02	0.6%	82.5%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	4.43E+03	N/A	100.0 %	N/A

Table 4.3-6. WIPP CH-TRU Waste Streams by Total EPA Units; Time 1,000
(Calendar Year 3033)

Rank Order	Waste Stream ID	Waste Stream Total EPA Units			
		EPA Units	EPA Units/drum	% of Total	Cum. %
1	WP-RF009.01	3.11E+02	4.98E-02	9.6%	9.6%
2	WP-RF118.01	2.72E+02	4.44E-02	8.4%	18.0%
3	T001-221H-HET	2.17E+02	1.16E-02	6.7%	24.7%
4	W027-221F-HET	1.69E+02	1.16E-02	5.2%	30.0%
5	IN-W216.98	1.62E+02	2.65E-03	5.0%	35.0%
6	IN-BN-510	1.62E+02	1.69E-03	5.0%	40.0%
7	RL-W513	1.11E+02	3.68E-03	3.4%	43.4%
8	T001-221F-HET	1.09E+02	1.16E-02	3.4%	46.8%
9	IN-ICP-002	1.08E+02	1.79E-03	3.3%	50.1%
10	RL-T107	8.46E+01	2.86E-03	2.6%	52.7%
11	T001-772F-HET	8.17E+01	1.16E-02	2.5%	55.3%
12	W027-221H-HET	7.43E+01	1.16E-02	2.3%	57.6%
13	IN-ICP-005	6.23E+01	1.79E-03	1.9%	59.5%
14	W027-773A-HET	6.04E+01	1.15E-02	1.9%	61.4%
15	W027-999-HET	4.91E+01	1.15E-02	1.5%	62.9%
16	WP-RF003.01	4.66E+01	4.18E-02	1.4%	64.3%
17	IN-ICP-003	4.53E+01	1.79E-03	1.4%	65.7%
18	W026-221F-HET	4.39E+01	1.16E-02	1.4%	67.1%
19	WP-RF006.01	4.20E+01	3.96E-02	1.3%	68.4%
20	W027-772F-HET	4.05E+01	1.16E-02	1.3%	69.6%
21	RF-MT420P	3.34E+01	4.32E-02	1.0%	70.7%
22	W026-221H-HET	3.27E+01	1.16E-02	1.0%	71.7%
23	RF-MT0091	3.09E+01	4.32E-02	1.0%	72.6%
24	WP-INW216.001-	2.83E+01	6.62E-03	0.9%	73.5%
25	WP-RF005.01	2.82E+01	4.86E-02	0.9%	74.4%
26	LL-T002	2.53E+01	3.49E-03	0.8%	75.2%
27	RF-TT0802	2.43E+01	8.96E-02	0.8%	75.9%
28	RF-MT-0299	2.41E+01	1.62E-01	0.8%	76.7%
29	RL-T137	2.29E+01	3.15E-02	0.7%	77.4%
30	RL-T140	2.29E+01	3.46E-02	0.7%	78.1%
31	W027-235F-HET	2.23E+01	1.16E-02	0.7%	78.8%
32	RF-MT532C	2.05E+01	1.72E-02	0.6%	79.4%
33	WP-RF005.02	1.94E+01	5.16E-02	0.6%	80.0%
34	RF-TT0338	1.83E+01	2.67E-02	0.6%	80.6%
35	OR-W201	1.67E+01	4.04E-02	0.5%	81.1%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	3.23E+03	N/A	100.0 %	N/A

Table 4.3-7. WIPP CH-TRU Waste Streams by Total EPA Units; Time 3,000
(Calendar Year 5033)

Rank Order	Waste Stream ID	Waste Stream Total EPA Units			
		EPA Units	EPA Units/drum	% of Total	Cum. %
1	WP-RF118.01	2.39E+02	3.92E-02	9.2%	9.2%
2	WP-RF009.01	2.39E+02	3.83E-02	9.2%	18.4%
3	T001-221H-HET	2.02E+02	1.08E-02	7.8%	26.2%
4	W027-221F-HET	1.57E+02	1.07E-02	6.1%	32.2%
5	IN-BN-510	1.39E+02	1.46E-03	5.4%	37.6%
6	T001-221F-HET	1.01E+02	1.07E-02	3.9%	41.5%
7	RL-W513	7.61E+01	2.53E-03	2.9%	44.4%
8	RL-T107	7.60E+01	2.57E-03	2.9%	47.4%
9	T001-772F-HET	7.59E+01	1.08E-02	2.9%	50.3%
10	IN-ICP-002	7.05E+01	1.18E-03	2.7%	53.0%
11	W027-221H-HET	6.91E+01	1.08E-02	2.7%	55.7%
12	W027-773A-HET	5.61E+01	1.07E-02	2.2%	57.8%
13	W027-999-HET	4.56E+01	1.07E-02	1.8%	59.6%
14	WP-RF003.01	4.13E+01	3.70E-02	1.6%	61.2%
15	IN-ICP-005	4.08E+01	1.17E-03	1.6%	62.7%
16	W026-221F-HET	4.08E+01	1.08E-02	1.6%	64.3%
17	W027-772F-HET	3.77E+01	1.08E-02	1.5%	65.8%
18	WP-RF006.01	3.71E+01	3.50E-02	1.4%	67.2%
19	IN-W216.98	3.32E+01	5.42E-04	1.3%	68.5%
20	W026-221H-HET	3.04E+01	1.08E-02	1.2%	69.6%
21	IN-ICP-003	2.97E+01	1.18E-03	1.1%	70.8%
22	RF-MT420P	2.97E+01	3.84E-02	1.1%	71.9%
23	RF-MT0091	2.76E+01	3.87E-02	1.1%	73.0%
24	WP-RF005.01	2.19E+01	3.79E-02	0.8%	73.8%
25	W027-235F-HET	2.08E+01	1.08E-02	0.8%	74.6%
26	RF-TT0802	2.06E+01	7.61E-02	0.8%	75.4%
27	RL-T137	2.01E+01	2.76E-02	0.8%	76.2%
28	RL-T140	1.99E+01	2.99E-02	0.8%	77.0%
29	LL-T002	1.98E+01	2.73E-03	0.8%	77.7%
30	RF-MT-0299	1.95E+01	1.31E-01	0.8%	78.5%
31	RF-MT532C	1.70E+01	1.43E-02	0.7%	79.1%
32	RF-TT0338	1.61E+01	2.34E-02	0.6%	79.7%
33	WP-RF005.02	1.32E+01	3.51E-02	0.5%	80.2%
34	RL-T132	1.31E+01	9.49E-02	0.5%	80.7%
35	RF-TT398R	1.29E+01	3.86E-02	0.5%	81.2%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	2.60E+03	N/A	100.0 %	N/A

Table 4.3-8. WIPP CH-TRU Waste Streams by Total EPA Units; 5,000
(Calendar Year 7033)

Rank Order	Waste Stream ID	Waste Stream Total EPA Units			
		EPA Units	EPA Units/drum	% of Total	Cum. %
1	WP-RF118.01	2.21E+02	3.61E-02	9.2%	9.2%
2	WP-RF009.01	2.19E+02	3.51E-02	9.1%	18.3%
3	T001-221H-HET	1.90E+02	1.01E-02	7.9%	26.3%
4	W027-221F-HET	1.48E+02	1.01E-02	6.2%	32.4%
5	IN-BN-510	1.28E+02	1.34E-03	5.3%	37.8%
6	T001-221F-HET	9.54E+01	1.01E-02	4.0%	41.8%
7	T001-772F-HET	7.15E+01	1.01E-02	3.0%	44.7%
8	RL-T107	7.01E+01	2.37E-03	3.0%	47.7%
9	RL-W513	6.79E+01	2.26E-03	2.8%	50.5%
10	W027-221H-HET	6.50E+01	1.01E-02	2.7%	53.2%
11	IN-ICP-002	6.38E+01	1.06E-03	2.7%	55.9%
12	W027-773A-HET	5.28E+01	1.01E-02	2.2%	58.1%
13	W027-999-HET	4.29E+01	1.01E-02	1.8%	59.9%
14	W026-221F-HET	3.84E+01	1.02E-02	1.6%	61.5%
15	WP-RF003.01	3.80E+01	3.41E-02	1.6%	63.1%
16	IN-ICP-005	3.69E+01	1.06E-03	1.5%	64.6%
17	W027-772F-HET	3.55E+01	1.01E-02	1.5%	66.1%
18	WP-RF006.01	3.42E+01	3.22E-02	1.4%	67.5%
19	W026-221H-HET	2.86E+01	1.01E-02	1.2%	68.7%
20	RF-MT420P	2.73E+01	3.54E-02	1.1%	69.9%
21	IN-ICP-003	2.69E+01	1.06E-03	1.1%	71.0%
22	IN-W216.98	2.59E+01	4.24E-04	1.1%	72.1%
23	RF-MT0091	2.55E+01	3.57E-02	1.1%	73.1%
24	WP-RF005.01	2.01E+01	3.47E-02	0.8%	74.0%
25	W027-235F-HET	1.95E+01	1.01E-02	0.8%	74.8%
26	RF-TT0802	1.90E+01	7.00E-02	0.8%	75.6%
27	RL-T137	1.85E+01	2.54E-02	0.8%	76.3%
28	RL-T140	1.83E+01	2.75E-02	0.8%	77.1%
29	LL-T002	1.79E+01	2.47E-03	0.8%	77.8%
30	RF-MT-0299	1.79E+01	1.20E-01	0.8%	78.6%
31	RF-MT532C	1.56E+01	1.32E-02	0.7%	79.2%
32	RF-TT0338	1.48E+01	2.16E-02	0.6%	79.9%
33	RL-T132	1.21E+01	8.76E-02	0.5%	80.4%
34	WP-RF005.02	1.20E+01	3.19E-02	0.5%	80.9%
35	RF-TT392P	1.19E+01	3.79E-02	0.5%	81.4%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	2.40E+03	N/A	100.0 %	N/A

Table 4.3-9. WIPP CH-TRU Waste Streams by Total EPA Units; 7,500
(Calendar Year 9533)

Rank Order	Waste Stream ID	Waste Stream Total EPA Units			
		EPA Units	EPA Units/drum	% of Total	Cum. %
1	WP-RF118.01	2.01E+02	3.28E-02	9.2%	9.2%
2	WP-RF009.01	1.99E+02	3.18E-02	9.1%	18.2%
3	T001-221H-HET	1.76E+02	9.40E-03	8.0%	26.3%
4	W027-221F-HET	1.38E+02	9.38E-03	6.3%	32.6%
5	IN-BN-510	1.16E+02	1.22E-03	5.3%	37.8%
6	T001-221F-HET	8.85E+01	9.39E-03	4.0%	41.9%
7	T001-772F-HET	6.63E+01	9.40E-03	3.0%	44.9%
8	RL-T107	6.38E+01	2.16E-03	2.9%	47.8%
9	RL-W513	6.04E+01	2.01E-03	2.8%	50.6%
10	W027-221H-HET	6.03E+01	9.40E-03	2.8%	53.3%
11	IN-ICP-002	5.78E+01	9.64E-04	2.6%	56.0%
12	W027-773A-HET	4.90E+01	9.37E-03	2.2%	58.2%
13	W027-999-HET	3.99E+01	9.36E-03	1.8%	60.0%
14	W026-221F-HET	3.56E+01	9.44E-03	1.6%	61.7%
15	WP-RF003.01	3.46E+01	3.10E-02	1.6%	63.2%
16	IN-ICP-005	3.34E+01	9.62E-04	1.5%	64.8%
17	W027-772F-HET	3.29E+01	9.39E-03	1.5%	66.3%
18	WP-RF006.01	3.11E+01	2.93E-02	1.4%	67.7%
19	W026-221H-HET	2.65E+01	9.40E-03	1.2%	68.9%
20	RF-MT420P	2.48E+01	3.21E-02	1.1%	70.0%
21	IN-ICP-003	2.43E+01	9.62E-04	1.1%	71.1%
22	IN-W216.98	2.34E+01	3.82E-04	1.1%	72.2%
23	RF-MT0091	2.32E+01	3.24E-02	1.1%	73.3%
24	WP-RF005.01	1.83E+01	3.15E-02	0.8%	74.1%
25	W027-235F-HET	1.81E+01	9.39E-03	0.8%	74.9%
26	RF-TT0802	1.72E+01	6.36E-02	0.8%	75.7%
27	RL-T137	1.68E+01	2.31E-02	0.8%	76.5%
28	RL-T140	1.66E+01	2.50E-02	0.8%	77.2%
29	RF-MT-0299	1.62E+01	1.09E-01	0.7%	78.0%
30	LL-T002	1.60E+01	2.21E-03	0.7%	78.7%
31	RF-MT532C	1.42E+01	1.19E-02	0.7%	79.4%
32	RF-TT0338	1.35E+01	1.96E-02	0.6%	80.0%
33	RL-T132	1.10E+01	7.96E-02	0.5%	80.5%
34	WP-RF005.02	1.09E+01	2.90E-02	0.5%	81.0%
35	RF-TT392P	1.08E+01	3.45E-02	0.5%	81.5%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	2.19E+03	N/A	100.0 %	N/A

Table 4.3-10. WIPP CH-TRU Waste Streams by Total EPA Units; Time 10,000
(Calendar Year 12033)

Rank Order	Waste Stream ID	Waste Stream Total EPA Units			
		EPA Units	EPA Units/drum	% of Total	Cum. %
1	WP-RF118.01	1.83E+02	2.99E-02	9.1%	9.1%
2	WP-RF009.01	1.81E+02	2.91E-02	9.0%	18.1%
3	T001-221H-HET	1.63E+02	8.73E-03	8.1%	26.3%
4	W027-221F-HET	1.28E+02	8.71E-03	6.4%	32.6%
5	IN-BN-510	1.06E+02	1.11E-03	5.3%	37.9%
6	T001-221F-HET	8.22E+01	8.71E-03	4.1%	42.0%
7	T001-772F-HET	6.16E+01	8.73E-03	3.1%	45.1%
8	RL-T107	5.82E+01	1.97E-03	2.9%	48.0%
9	W027-221H-HET	5.60E+01	8.73E-03	2.8%	50.7%
10	RL-W513	5.40E+01	1.80E-03	2.7%	53.4%
11	IN-ICP-002	5.26E+01	8.77E-04	2.6%	56.0%
12	W027-773A-HET	4.55E+01	8.70E-03	2.3%	58.3%
13	W027-999-HET	3.70E+01	8.69E-03	1.8%	60.2%
14	W026-221F-HET	3.31E+01	8.76E-03	1.7%	61.8%
15	WP-RF003.01	3.15E+01	2.83E-02	1.6%	63.4%
16	W027-772F-HET	3.06E+01	8.72E-03	1.5%	64.9%
17	IN-ICP-005	3.04E+01	8.75E-04	1.5%	66.4%
18	WP-RF006.01	2.83E+01	2.67E-02	1.4%	67.8%
19	W026-221H-HET	2.46E+01	8.72E-03	1.2%	69.0%
20	RF-MT420P	2.27E+01	2.93E-02	1.1%	70.2%
21	IN-ICP-003	2.21E+01	8.75E-04	1.1%	71.3%
22	IN-W216.98	2.13E+01	3.49E-04	1.1%	72.3%
23	RF-MT0091	2.11E+01	2.95E-02	1.1%	73.4%
24	W027-235F-HET	1.68E+01	8.72E-03	0.8%	74.2%
25	WP-RF005.01	1.67E+01	2.88E-02	0.8%	75.1%
26	RF-TT0802	1.57E+01	5.80E-02	0.8%	75.8%
27	RL-T137	1.53E+01	2.11E-02	0.8%	76.6%
28	RL-T140	1.51E+01	2.28E-02	0.8%	77.4%
29	RF-MT-0299	1.48E+01	9.93E-02	0.7%	78.1%
30	LL-T002	1.44E+01	1.99E-03	0.7%	78.8%
31	RF-MT532C	1.30E+01	1.09E-02	0.6%	79.5%
32	RF-TT0338	1.23E+01	1.79E-02	0.6%	80.1%
33	RL-T132	1.00E+01	7.26E-02	0.5%	80.6%
34	WP-RF005.02	9.94E+00	2.64E-02	0.5%	81.1%
35	RF-TT392P	9.85E+00	3.14E-02	0.5%	81.6%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	2.01E+03	N/A	100.0 %	N/A

4.4 EPA CURIES

For the purposes of this analysis, the EPA Curie value for each waste stream is a value calculated as the sum of the curies of the isotopes that contribute to the EPA unit. Those contributing isotopes are: ^{241}Am , ^{238}Pu , ^{239}Pu , ^{240}Pu and ^{234}U (see Sections 4.5, 4.7, 4.8, 4.9 and 4.11 respectively). These are the only isotopes that are regulated as TRU waste by 40CFR191 and therefore their sum is called EPA curies.

The total EPA Curie values in Table 4.4-1 through Table 4.4-10 were provided to illustrate which waste streams are the primary contributors over the entire population of waste. Each table identifies 35 waste streams that offer the greatest contribution to EPA curies during each of the ten time intervals output by EPAUNI. All 690 waste streams and their total EPA curies can be found in the file EPU_CRA1BC_CH_ACTIVITY.DIA in the CRA library CRA1BC_EPU.

Tables 4.4-1 through 4.4-10 also illustrate that as the nuclides decay, based on the radioisotopic activities of each waste stream, the respective contributions of each waste stream over time changes relative to the contribution of other waste streams. For example, the INEEL waste stream IN-W216.98 (solidified inorganics, primarily wet sludges produced by treating aqueous process wastes) is the third highest contributor (at 6.95%, see Table 4.4-1) to total EPA curies at closure (time interval 0, year 2033), yet by time interval 125 years (year 2158) the waste stream increases its contribution to 8.75% of the total EPA curies (see Table 4.4-5) and by time interval 10,000 years (year 12033) its contribution drops to 1.06% (see Table 4.4-6). This waste stream is dominant in its ^{241}Am activity (see Section 4.5) and increases due to the relative fast decay of ^{241}Pu (see Section 4.10), which adds ^{241}Am faster than ^{241}Pu decays. The eventual drop over time is again due to its ^{241}Am concentration compared to waste streams with high quantities of longer-lived ^{239}Pu and ^{240}Pu (see Sections 4.8 and 4.9).

Conversely, the RFETS waste stream already emplaced in the WIPP, WP-RF118.01 (incinerator ash and process residues) contributes 3.37% (see Table 4.4-1) to the total EPA curies and ranks eleventh at the time of closure (time interval 0 years, year 2033). Yet, by time interval 10,000 years (year 12033), the waste stream is the largest contributor to total EPA curies at 9.11% (see Table 4.4-10), due to its relatively high quantities of longer-lived ^{239}Pu and ^{240}Pu (see Sections 4.8 and 4.9).

Table 4.4-1. WIPP CH-TRU Waste Streams by EPA Curies; Time 0
(Calendar Year = 2033)

Rank Order	Waste Stream ID	EPA Curies			
		EPA Curies	EPA Units	% of Total	Cum. %
1	T001-221H-HET	2.66E+05	1.15E+03	11.57%	11.57%
2	W027-221F-HET	1.87E+05	8.04E+02	8.12%	23.13%
3	IN-W216.98	1.60E+05	6.89E+02	6.95%	31.25%
4	T001-221F-HET	1.34E+05	5.79E+02	5.84%	38.21%
5	WP-RF009.01	1.25E+05	5.38E+02	5.43%	44.05%
6	LA-OS-00-01	1.09E+05	4.68E+02	4.73%	49.47%
7	T001-772F-HET	1.00E+05	4.32E+02	4.36%	54.20%
8	RL-T107	9.75E+04	4.20E+02	4.24%	58.56%
9	IN-BN-510	9.04E+04	3.90E+02	3.93%	62.81%
10	W027-221H-HET	8.15E+04	3.51E+02	3.55%	66.74%
11	WP-RF118.01	7.74E+04	3.34E+02	3.37%	70.29%
12	W027-773A-HET	6.64E+04	2.86E+02	2.89%	73.66%
13	RL-W513	5.88E+04	2.54E+02	2.56%	76.55%
14	IN-ICP-002	5.76E+04	2.48E+02	2.50%	79.11%
15	W027-999-HET	5.41E+04	2.33E+02	2.35%	81.61%
16	W026-221F-HET	5.37E+04	2.31E+02	2.34%	83.97%
17	W027-772F-HET	4.46E+04	1.92E+02	1.94%	86.30%
18	W026-221H-HET	4.01E+04	1.73E+02	1.75%	88.24%
19	IN-ICP-005	3.34E+04	1.44E+02	1.45%	89.99%
20	WP-INW216.001-	2.58E+04	1.11E+02	1.12%	91.44%
21	W027-235F-HET	2.45E+04	1.06E+02	1.07%	92.56%
22	IN-ICP-003	2.43E+04	1.05E+02	1.06%	93.63%
23	RL-W575	1.52E+04	6.54E+01	0.66%	94.68%
24	T001-773A-HET	1.39E+04	6.00E+01	0.61%	95.35%
25	WP-RF003.01	1.31E+04	5.63E+01	0.57%	95.95%
26	T001-235F-HET	1.26E+04	5.45E+01	0.55%	96.52%
27	WP-RF006.01	1.19E+04	5.12E+01	0.52%	97.07%
28	WP-RF005.01	1.10E+04	4.74E+01	0.48%	97.59%
29	WP-RF005.02	9.58E+03	4.13E+01	0.42%	98.06%
30	LL-T002	9.44E+03	4.07E+01	0.41%	98.48%
31	RF-MT420P	9.27E+03	4.00E+01	0.40%	98.89%
32	OR-W201	9.15E+03	3.95E+01	0.40%	99.30%
33	RF-MT-0299	8.71E+03	3.76E+01	0.38%	99.69%
34	RF-MT0091	8.37E+03	3.61E+01	0.36%	100.07%
35	RF-TT0802	7.71E+03	3.32E+01	0.34%	100.44%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.00%	100.01%
	Sum =	2.30E+06	9.90E+03	100.00%	N/A

Table 4.4-2. WIPP CH-TRU Waste Streams by EPA Curies; Time 100
(Calendar Year = 2133)

Rank Order	Waste Stream ID	EPA Curies			
		EPA Curies	EPA Units	% of Total	Cum. %
1	T001-221H-HET	1.50E+05	6.45E+02	9.25%	9.25%
2	IN-W216.98	1.37E+05	5.91E+02	8.47%	18.49%
3	WP-RF009.01	1.15E+05	4.97E+02	7.13%	26.97%
4	W027-221F-HET	1.07E+05	4.63E+02	6.63%	34.10%
5	T001-221F-HET	7.56E+04	3.26E+02	4.67%	40.72%
6	WP-RF118.01	7.53E+04	3.25E+02	4.65%	45.39%
7	IN-BN-510	6.60E+04	2.84E+02	4.08%	50.04%
8	T001-772F-HET	5.65E+04	2.43E+02	3.49%	54.12%
9	RL-T107	5.63E+04	2.43E+02	3.47%	57.60%
10	RL-W513	5.12E+04	2.21E+02	3.16%	61.08%
11	LA-OS-00-01	5.12E+04	2.21E+02	3.16%	64.24%
12	IN-ICP-002	5.07E+04	2.19E+02	3.13%	67.41%
13	W027-221H-HET	4.69E+04	2.02E+02	2.90%	70.54%
14	W027-773A-HET	3.82E+04	1.65E+02	2.36%	73.44%
15	W027-999-HET	3.11E+04	1.34E+02	1.92%	75.80%
16	W026-221F-HET	3.03E+04	1.30E+02	1.87%	77.72%
17	IN-ICP-005	2.94E+04	1.27E+02	1.82%	79.59%
18	W027-772F-HET	2.56E+04	1.11E+02	1.58%	81.41%
19	W026-221H-HET	2.26E+04	9.74E+01	1.40%	82.99%
20	WP-INW216.001-	2.22E+04	9.59E+01	1.37%	84.39%
21	IN-ICP-003	2.14E+04	9.22E+01	1.32%	85.76%
22	RL-W575	1.49E+04	6.43E+01	0.92%	87.08%
23	W027-235F-HET	1.41E+04	6.08E+01	0.87%	88.00%
24	WP-RF003.01	1.27E+04	5.49E+01	0.79%	88.87%
25	WP-RF006.01	1.15E+04	4.96E+01	0.71%	89.66%
26	WP-RF005.01	1.02E+04	4.40E+01	0.63%	90.37%
27	RF-MT420P	9.02E+03	3.89E+01	0.56%	91.00%
28	LL-T002	8.95E+03	3.86E+01	0.55%	91.56%
29	WP-RF005.02	8.66E+03	3.73E+01	0.53%	92.11%
30	RF-MT-0299	8.19E+03	3.53E+01	0.51%	92.64%
31	RF-MT0091	8.17E+03	3.52E+01	0.50%	93.15%
32	OR-W201	7.99E+03	3.44E+01	0.49%	93.65%
33	T001-773A-HET	7.83E+03	3.38E+01	0.48%	94.15%
34	RF-TT0802	7.38E+03	3.18E+01	0.46%	94.63%
35	T001-235F-HET	7.11E+03	3.07E+01	0.44%	95.09%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.00%	100.00%
	Sum =	1.62E+06	6.98E+03	100.00%	N/A

Table 4.4-3. WIPP CH-TRU Waste Streams by EPA Curies; Time 125
(Calendar Year = 2158)

Rank Order	Waste Stream ID	EPA Curies			
		EPA Curies	EPA Units	% of Total	Cum. %
1	T001-221H-HET	1.32E+05	5.71E+02	8.77%	8.77%
2	IN-W216.98	1.32E+05	5.69E+02	8.75%	17.55%
3	WP-RF009.01	1.13E+05	4.88E+02	7.50%	26.30%
4	W027-221F-HET	9.55E+04	4.12E+02	6.33%	33.80%
5	WP-RF118.01	7.46E+04	3.22E+02	4.95%	40.13%
6	T001-221F-HET	6.68E+04	2.88E+02	4.43%	45.08%
7	IN-BN-510	6.21E+04	2.68E+02	4.11%	49.50%
8	RL-T107	5.00E+04	2.16E+02	3.31%	53.62%
9	T001-772F-HET	4.99E+04	2.15E+02	3.31%	56.93%
10	RL-W513	4.94E+04	2.13E+02	3.28%	60.24%
11	IN-ICP-002	4.93E+04	2.13E+02	3.27%	63.51%
12	LA-OS-00-01	4.26E+04	1.84E+02	2.82%	66.78%
13	W027-221H-HET	4.18E+04	1.80E+02	2.77%	69.61%
14	W027-773A-HET	3.40E+04	1.47E+02	2.25%	72.37%
15	IN-ICP-005	2.86E+04	1.23E+02	1.90%	74.63%
16	W027-999-HET	2.77E+04	1.19E+02	1.83%	76.52%
17	W026-221F-HET	2.67E+04	1.15E+02	1.77%	78.36%
18	W027-772F-HET	2.28E+04	9.83E+01	1.51%	80.13%
19	WP-INW216.001-	2.14E+04	9.24E+01	1.42%	81.64%
20	IN-ICP-003	2.08E+04	8.95E+01	1.38%	83.06%
21	W026-221H-HET	2.00E+04	8.61E+01	1.32%	84.44%
22	RL-W575	1.43E+04	6.16E+01	0.95%	85.76%
23	WP-RF003.01	1.26E+04	5.45E+01	0.84%	86.71%
24	W027-235F-HET	1.26E+04	5.41E+01	0.83%	87.54%
25	WP-RF006.01	1.14E+04	4.92E+01	0.76%	88.38%
26	WP-RF005.01	1.00E+04	4.31E+01	0.66%	89.13%
27	RF-MT420P	8.95E+03	3.86E+01	0.59%	89.80%
28	LL-T002	8.77E+03	3.78E+01	0.58%	90.39%
29	WP-RF005.02	8.45E+03	3.64E+01	0.56%	90.97%
30	RF-MT0091	8.12E+03	3.50E+01	0.54%	91.53%
31	RF-MT-0299	8.05E+03	3.47E+01	0.53%	92.07%
32	OR-W201	7.69E+03	3.32E+01	0.51%	92.60%
33	RF-TT0802	7.28E+03	3.14E+01	0.48%	93.11%
34	T001-773A-HET	6.92E+03	2.98E+01	0.46%	93.59%
35	RL-T140	6.59E+03	2.84E+01	0.44%	94.05%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.00%	100.00%
	Sum =	1.51E+06	6.51E+03	100.00%	N/A

Table 4.4-4. WIPP CH-TRU Waste Streams by EPA Curies; Time 175
(Calendar Year = 2208)

Rank Order	Waste Stream ID	EPA Curies			
		EPA Curies	EPA Units	% of Total	Cum. %
1	IN-W216.98	1.22E+05	5.28E+02	9.14%	9.14%
2	WP-RF009.01	1.09E+05	4.70E+02	8.14%	18.28%
3	T001-221H-HET	1.06E+05	4.58E+02	7.94%	26.42%
4	W027-221F-HET	7.77E+04	3.35E+02	5.81%	34.36%
5	WP-RF118.01	7.34E+04	3.16E+02	5.48%	40.17%
6	IN-BN-510	5.61E+04	2.42E+02	4.19%	45.65%
7	T001-221F-HET	5.36E+04	2.31E+02	4.00%	49.84%
8	IN-ICP-002	4.67E+04	2.01E+02	3.48%	53.84%
9	RL-W513	4.63E+04	2.00E+02	3.46%	57.32%
10	RL-T107	4.06E+04	1.75E+02	3.03%	60.79%
11	T001-772F-HET	4.01E+04	1.73E+02	2.99%	63.82%
12	W027-221H-HET	3.40E+04	1.47E+02	2.54%	66.81%
13	LA-OS-00-01	2.98E+04	1.28E+02	2.22%	69.35%
14	W027-773A-HET	2.77E+04	1.19E+02	2.07%	71.57%
15	IN-ICP-005	2.71E+04	1.17E+02	2.02%	73.64%
16	W027-999-HET	2.25E+04	9.71E+01	1.68%	75.66%
17	W026-221F-HET	2.15E+04	9.26E+01	1.60%	77.34%
18	WP-INW216.001-	1.99E+04	8.58E+01	1.49%	78.95%
19	IN-ICP-003	1.97E+04	8.47E+01	1.47%	80.44%
20	W027-772F-HET	1.86E+04	8.01E+01	1.39%	81.90%
21	W026-221H-HET	1.60E+04	6.91E+01	1.20%	83.29%
22	RL-W575	1.32E+04	5.67E+01	0.98%	84.49%
23	WP-RF003.01	1.25E+04	5.37E+01	0.93%	85.47%
24	WP-RF006.01	1.12E+04	4.84E+01	0.84%	86.40%
25	W027-235F-HET	1.02E+04	4.41E+01	0.76%	87.24%
26	WP-RF005.01	9.65E+03	4.16E+01	0.72%	88.00%
27	RF-MT420P	8.83E+03	3.81E+01	0.66%	88.73%
28	LL-T002	8.46E+03	3.64E+01	0.63%	89.38%
29	WP-RF005.02	8.04E+03	3.47E+01	0.60%	90.02%
30	RF-MT0091	8.02E+03	3.46E+01	0.60%	90.62%
31	RF-MT-0299	7.80E+03	3.36E+01	0.58%	91.22%
32	OR-W201	7.18E+03	3.09E+01	0.54%	91.80%
33	RF-TT0802	7.11E+03	3.07E+01	0.53%	92.33%
34	RL-T140	6.45E+03	2.78E+01	0.48%	92.86%
35	RL-T137	6.32E+03	2.72E+01	0.47%	93.35%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.00%	100.00%
	Sum =	1.34E+06	5.77E+03	100.00%	N/A

Table 4.4-5. WIPP CH-TRU Waste Streams by EPA Curies; Time 350
(Calendar Year = 2383)

Rank Order	Waste Stream ID	EPA Curies			
		EPA Curies	EPA Units	% of Total	Cum. %
1	WP-RF009.01	9.69E+04	4.17E+02	9.43%	9.43%
2	IN-W216.98	9.42E+04	4.06E+02	9.17%	18.86%
3	WP-RF118.01	7.00E+04	3.02E+02	6.81%	28.03%
4	T001-221H-HET	6.57E+04	2.83E+02	6.39%	34.84%
5	W027-221F-HET	5.00E+04	2.15E+02	4.86%	41.24%
6	IN-BN-510	4.56E+04	1.97E+02	4.44%	46.10%
7	IN-ICP-002	3.92E+04	1.69E+02	3.82%	50.54%
8	RL-W513	3.87E+04	1.67E+02	3.76%	54.37%
9	T001-221F-HET	3.31E+04	1.43E+02	3.22%	58.13%
10	RL-T107	2.58E+04	1.11E+02	2.51%	61.35%
11	T001-772F-HET	2.48E+04	1.07E+02	2.41%	63.86%
12	IN-ICP-005	2.28E+04	9.81E+01	2.22%	66.27%
13	W027-221H-HET	2.19E+04	9.43E+01	2.13%	68.49%
14	W027-773A-HET	1.78E+04	7.67E+01	1.73%	70.62%
15	IN-ICP-003	1.65E+04	7.13E+01	1.61%	72.35%
16	WP-INW216.001-	1.55E+04	6.67E+01	1.51%	73.96%
17	W027-999-HET	1.45E+04	6.24E+01	1.41%	75.47%
18	W026-221F-HET	1.33E+04	5.73E+01	1.29%	76.88%
19	W027-772F-HET	1.20E+04	5.15E+01	1.16%	78.17%
20	WP-RF003.01	1.19E+04	5.14E+01	1.16%	79.33%
21	WP-RF006.01	1.08E+04	4.64E+01	1.05%	80.49%
22	W026-221H-HET	9.90E+03	4.27E+01	0.96%	81.54%
23	RL-W575	9.87E+03	4.25E+01	0.96%	82.50%
24	LA-OS-00-01	9.53E+03	4.11E+01	0.93%	83.47%
25	WP-RF005.01	8.62E+03	3.72E+01	0.84%	84.39%
26	RF-MT420P	8.49E+03	3.66E+01	0.83%	85.23%
27	RF-MT0091	7.74E+03	3.34E+01	0.75%	86.06%
28	LL-T002	7.58E+03	3.27E+01	0.74%	86.81%
29	RF-MT-0299	7.07E+03	3.05E+01	0.69%	87.55%
30	WP-RF005.02	6.87E+03	2.96E+01	0.67%	88.24%
31	RF-TT0802	6.62E+03	2.86E+01	0.64%	88.91%
32	W027-235F-HET	6.58E+03	2.84E+01	0.64%	89.55%
33	RL-T140	6.06E+03	2.61E+01	0.59%	90.19%
34	RL-T137	5.98E+03	2.58E+01	0.58%	90.78%
35	OR-W201	5.93E+03	2.56E+01	0.58%	91.37%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.00%	100.00%
	Sum =	1.03E+06	4.43E+03	100.00%	N/A

Table 4.4-6. WIPP CH-TRU Waste Streams by EPA Curies; Time 1,000
(Calendar Year = 3033)

Rank Order	Waste Stream ID	EPA Curies			
		EPA Curies	EPA Units	% of Total	Cum. %
1	WP-RF009.01	7.21E+04	3.11E+02	9.62%	9.62%
2	WP-RF118.01	6.30E+04	2.72E+02	8.40%	19.24%
3	T001-221H-HET	5.03E+04	2.17E+02	6.71%	27.64%
4	W027-221F-HET	3.93E+04	1.69E+02	5.24%	34.35%
5	IN-W216.98	3.77E+04	1.62E+02	5.02%	39.59%
6	IN-BN-510	3.75E+04	1.62E+02	5.00%	44.61%
7	RL-W513	2.57E+04	1.11E+02	3.43%	49.61%
8	T001-221F-HET	2.53E+04	1.09E+02	3.37%	53.04%
9	IN-ICP-002	2.49E+04	1.08E+02	3.33%	56.41%
10	RL-T107	1.96E+04	8.46E+01	2.62%	59.74%
11	T001-772F-HET	1.90E+04	8.17E+01	2.53%	62.35%
12	W027-221H-HET	1.72E+04	7.43E+01	2.30%	64.88%
13	IN-ICP-005	1.45E+04	6.23E+01	1.93%	67.18%
14	W027-773A-HET	1.40E+04	6.04E+01	1.87%	69.11%
15	W027-999-HET	1.14E+04	4.91E+01	1.52%	70.97%
16	WP-RF003.01	1.08E+04	4.66E+01	1.44%	72.49%
17	IN-ICP-003	1.05E+04	4.53E+01	1.40%	73.93%
18	W026-221F-HET	1.02E+04	4.39E+01	1.36%	75.34%
19	WP-RF006.01	9.74E+03	4.20E+01	1.30%	76.69%
20	W027-772F-HET	9.40E+03	4.05E+01	1.25%	77.99%
21	RF-MT420P	7.75E+03	3.34E+01	1.03%	79.25%
22	W026-221H-HET	7.58E+03	3.27E+01	1.01%	80.28%
23	RF-MT0091	7.16E+03	3.09E+01	0.95%	81.29%
24	WP-INW216.001-	6.56E+03	2.83E+01	0.87%	82.25%
25	WP-RF005.01	6.53E+03	2.82E+01	0.87%	83.12%
26	LL-T002	5.86E+03	2.53E+01	0.78%	83.99%
27	RF-TT0802	5.63E+03	2.43E+01	0.75%	84.77%
28	RF-MT-0299	5.60E+03	2.41E+01	0.75%	85.52%
29	RL-T137	5.32E+03	2.29E+01	0.71%	86.27%
30	RL-T140	5.32E+03	2.29E+01	0.71%	86.98%
31	W027-235F-HET	5.18E+03	2.23E+01	0.69%	87.69%
32	RF-MT532C	4.75E+03	2.05E+01	0.63%	88.38%
33	WP-RF005.02	4.51E+03	1.94E+01	0.60%	89.01%
34	RF-TT0338	4.25E+03	1.83E+01	0.57%	89.61%
35	OR-W201	3.88E+03	1.67E+01	0.52%	90.18%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.00%	100.00%
	Sum =	7.50E+05	3.23E+03	100.00%	N/A

Table 4.4-7. WIPP CH-TRU Waste Streams by EPA Curies; Time 3,000
(Calendar Year = 5033)

Rank Order	Waste Stream ID	EPA Curies			
		EPA Curies	EPA Units	% of Total	Cum. %
1	WP-RF118.01	5.56E+04	2.40E+02	9.22%	9.22%
2	WP-RF009.01	5.54E+04	2.39E+02	9.20%	18.44%
3	T001-221H-HET	4.68E+04	2.02E+02	7.76%	27.63%
4	W027-221F-HET	3.65E+04	1.58E+02	6.06%	35.39%
5	IN-BN-510	3.23E+04	1.39E+02	5.36%	41.46%
6	T001-221F-HET	2.35E+04	1.01E+02	3.90%	46.81%
7	RL-W513	1.77E+04	7.61E+01	2.93%	50.72%
8	RL-T107	1.76E+04	7.60E+01	2.93%	53.64%
9	T001-772F-HET	1.76E+04	7.59E+01	2.92%	56.57%
10	IN-ICP-002	1.64E+04	7.06E+01	2.72%	59.49%
11	W027-221H-HET	1.60E+04	6.91E+01	2.66%	62.21%
12	W027-773A-HET	1.30E+04	5.61E+01	2.16%	64.87%
13	W027-999-HET	1.06E+04	4.56E+01	1.76%	67.03%
14	WP-RF003.01	9.57E+03	4.13E+01	1.59%	68.79%
15	IN-ICP-005	9.48E+03	4.08E+01	1.57%	70.37%
16	W026-221F-HET	9.46E+03	4.08E+01	1.57%	71.95%
17	W027-772F-HET	8.74E+03	3.77E+01	1.45%	73.52%
18	WP-RF006.01	8.61E+03	3.71E+01	1.43%	74.97%
19	IN-W216.98	7.70E+03	3.32E+01	1.28%	76.40%
20	W026-221H-HET	7.05E+03	3.04E+01	1.17%	77.67%
21	IN-ICP-003	6.89E+03	2.97E+01	1.14%	78.84%
22	RF-MT420P	6.88E+03	2.97E+01	1.14%	79.99%
23	RF-MT0091	6.41E+03	2.76E+01	1.06%	81.13%
24	WP-RF005.01	5.09E+03	2.19E+01	0.84%	82.19%
25	W027-235F-HET	4.82E+03	2.08E+01	0.80%	83.04%
26	RF-TT0802	4.79E+03	2.06E+01	0.79%	83.84%
27	RL-T137	4.66E+03	2.01E+01	0.77%	84.63%
28	RL-T140	4.61E+03	1.99E+01	0.76%	85.40%
29	LL-T002	4.59E+03	1.98E+01	0.76%	86.17%
30	RF-MT-0299	4.52E+03	1.95E+01	0.75%	86.93%
31	RF-MT532C	3.95E+03	1.70E+01	0.65%	87.68%
32	RF-TT0338	3.73E+03	1.61E+01	0.62%	88.34%
33	WP-RF005.02	3.06E+03	1.32E+01	0.51%	88.95%
34	RL-T132	3.04E+03	1.31E+01	0.50%	89.46%
35	RF-TT398R	3.00E+03	1.30E+01	0.50%	89.97%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.00%	100.00%
	Sum =	6.03E+05	2.60E+03	100.00%	N/A

Table 4.4-8. WIPP CH-TRU Waste Streams by EPA Curies; Time 5,000
(Calendar Year = 7033)

Rank Order	Waste Stream ID	EPA Curies			
		EPA Curies	EPA Units	% of Total	Cum. %
1	WP-RF118.01	5.12E+04	2.21E+02	9.21%	9.21%
2	WP-RF009.01	5.07E+04	2.19E+02	9.13%	18.43%
3	T001-221H-HET	4.40E+04	1.90E+02	7.92%	27.56%
4	W027-221F-HET	3.44E+04	1.48E+02	6.19%	35.47%
5	IN-BN-510	2.97E+04	1.28E+02	5.34%	41.66%
6	T001-221F-HET	2.21E+04	9.54E+01	3.98%	47.00%
7	T001-772F-HET	1.66E+04	7.15E+01	2.98%	50.98%
8	RL-T107	1.63E+04	7.01E+01	2.93%	53.96%
9	RL-W513	1.58E+04	6.79E+01	2.84%	56.89%
10	W027-221H-HET	1.51E+04	6.50E+01	2.71%	59.72%
11	IN-ICP-002	1.48E+04	6.38E+01	2.66%	62.43%
12	W027-773A-HET	1.23E+04	5.28E+01	2.21%	65.10%
13	W027-999-HET	9.96E+03	4.30E+01	1.79%	67.30%
14	W026-221F-HET	8.91E+03	3.84E+01	1.60%	69.10%
15	WP-RF003.01	8.82E+03	3.80E+01	1.59%	70.70%
16	IN-ICP-005	8.57E+03	3.69E+01	1.54%	72.29%
17	W027-772F-HET	8.23E+03	3.55E+01	1.48%	73.83%
18	WP-RF006.01	7.94E+03	3.42E+01	1.43%	75.31%
19	W026-221H-HET	6.63E+03	2.86E+01	1.19%	76.73%
20	RF-MT420P	6.34E+03	2.74E+01	1.14%	77.93%
21	IN-ICP-003	6.23E+03	2.69E+01	1.12%	79.07%
22	IN-W216.98	6.02E+03	2.59E+01	1.08%	80.19%
23	RF-MT0091	5.91E+03	2.55E+01	1.06%	81.27%
24	WP-RF005.01	4.66E+03	2.01E+01	0.84%	82.34%
25	W027-235F-HET	4.53E+03	1.95E+01	0.82%	83.17%
26	RF-TT0802	4.40E+03	1.90E+01	0.79%	83.99%
27	RL-T137	4.29E+03	1.85E+01	0.77%	84.78%
28	RL-T140	4.24E+03	1.83E+01	0.76%	85.55%
29	LL-T002	4.16E+03	1.79E+01	0.75%	86.32%
30	RF-MT-0299	4.15E+03	1.79E+01	0.75%	87.06%
31	RF-MT532C	3.63E+03	1.56E+01	0.65%	87.81%
32	RF-TT0338	3.44E+03	1.48E+01	0.62%	88.46%
33	RL-T132	2.80E+03	1.21E+01	0.50%	89.08%
34	WP-RF005.02	2.79E+03	1.20E+01	0.50%	89.58%
35	RF-TT392P	2.76E+03	1.19E+01	0.50%	90.09%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.00%	100.00%
	Sum =	5.56E+05	2.40E+03	100.00%	N/A

Table 4.4-9. WIPP CH-TRU Waste Streams by EPA Curies; Time 7,500
(Calendar Year = 9533)

Rank Order	Waste Stream ID	EPA Curies			
		EPA Curies	EPA Units	% of Total	Cum. %
1	WP-RF118.01	4.66E+04	2.01E+02	9.16%	9.16%
2	WP-RF009.01	4.61E+04	1.99E+02	9.07%	18.32%
3	T001-221H-HET	4.08E+04	1.76E+02	8.03%	27.39%
4	W027-221F-HET	3.19E+04	1.38E+02	6.28%	35.43%
5	IN-BN-510	2.69E+04	1.16E+02	5.30%	41.70%
6	T001-221F-HET	2.05E+04	8.85E+01	4.04%	47.00%
7	T001-772F-HET	1.54E+04	6.63E+01	3.03%	51.04%
8	RL-T107	1.48E+04	6.38E+01	2.91%	54.07%
9	RL-W513	1.40E+04	6.04E+01	2.76%	56.98%
10	W027-221H-HET	1.40E+04	6.03E+01	2.75%	59.74%
11	IN-ICP-002	1.34E+04	5.78E+01	2.64%	62.49%
12	W027-773A-HET	1.14E+04	4.90E+01	2.24%	65.13%
13	W027-999-HET	9.25E+03	3.99E+01	1.82%	67.37%
14	W026-221F-HET	8.26E+03	3.56E+01	1.63%	69.18%
15	WP-RF003.01	8.02E+03	3.46E+01	1.58%	70.81%
16	IN-ICP-005	7.76E+03	3.34E+01	1.53%	72.39%
17	W027-772F-HET	7.63E+03	3.29E+01	1.50%	73.91%
18	WP-RF006.01	7.21E+03	3.11E+01	1.42%	75.42%
19	W026-221H-HET	6.15E+03	2.65E+01	1.21%	76.84%
20	RF-MT420P	5.76E+03	2.49E+01	1.13%	78.05%
21	IN-ICP-003	5.64E+03	2.43E+01	1.11%	79.18%
22	IN-W216.98	5.43E+03	2.34E+01	1.07%	80.29%
23	RF-MT0091	5.37E+03	2.32E+01	1.06%	81.36%
24	WP-RF005.01	4.24E+03	1.83E+01	0.83%	82.42%
25	W027-235F-HET	4.21E+03	1.81E+01	0.83%	83.25%
26	RF-TT0802	4.00E+03	1.72E+01	0.79%	84.08%
27	RL-T137	3.90E+03	1.68E+01	0.77%	84.86%
28	RL-T140	3.85E+03	1.66E+01	0.76%	85.63%
29	RF-MT-0299	3.77E+03	1.62E+01	0.74%	86.39%
30	LL-T002	3.72E+03	1.60E+01	0.73%	87.13%
31	RF-MT532C	3.30E+03	1.42E+01	0.65%	87.86%
32	RF-TT0338	3.13E+03	1.35E+01	0.62%	88.51%
33	RL-T132	2.55E+03	1.10E+01	0.50%	89.12%
34	WP-RF005.02	2.53E+03	1.09E+01	0.50%	89.63%
35	RF-TT392P	2.51E+03	1.08E+01	0.49%	90.12%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.00%	100.00%
	Sum =	5.08E+05	2.19E+03	100.00%	N/A

Table 4.4-10. WIPP CH-TRU Waste Streams by EPA Curies; Time 10,000
(Calendar Year = 12033)

Rank Order	Waste Stream ID	EPA Curies			
		EPA Curies	EPA Units	% of Total	Cum. %
1	WP-RF118.01	4.25E+04	1.83E+02	9.11%	9.11%
2	WP-RF009.01	4.21E+04	1.81E+02	9.03%	18.23%
3	T001-221H-HET	3.79E+04	1.63E+02	8.14%	27.25%
4	W027-221F-HET	2.96E+04	1.28E+02	6.36%	35.39%
5	IN-BN-510	2.45E+04	1.06E+02	5.26%	41.75%
6	T001-221F-HET	1.91E+04	8.22E+01	4.09%	47.01%
7	T001-772F-HET	1.43E+04	6.16E+01	3.06%	51.10%
8	RL-T107	1.35E+04	5.82E+01	2.90%	54.17%
9	W027-221H-HET	1.30E+04	5.60E+01	2.79%	57.06%
10	RL-W513	1.25E+04	5.40E+01	2.69%	59.85%
11	IN-ICP-002	1.22E+04	5.26E+01	2.62%	62.54%
12	W027-773A-HET	1.06E+04	4.55E+01	2.27%	65.16%
13	W027-999-HET	8.59E+03	3.70E+01	1.84%	67.42%
14	W026-221F-HET	7.67E+03	3.31E+01	1.65%	69.27%
15	WP-RF003.01	7.31E+03	3.15E+01	1.57%	70.91%
16	W027-772F-HET	7.09E+03	3.06E+01	1.52%	72.48%
17	IN-ICP-005	7.06E+03	3.04E+01	1.51%	74.00%
18	WP-RF006.01	6.58E+03	2.83E+01	1.41%	75.52%
19	W026-221H-HET	5.71E+03	2.46E+01	1.23%	76.93%
20	RF-MT420P	5.26E+03	2.27E+01	1.13%	78.15%
21	IN-ICP-003	5.13E+03	2.21E+01	1.10%	79.28%
22	IN-W216.98	4.95E+03	2.13E+01	1.06%	80.38%
23	RF-MT0091	4.90E+03	2.11E+01	1.05%	81.44%
24	W027-235F-HET	3.91E+03	1.68E+01	0.84%	82.50%
25	WP-RF005.01	3.86E+03	1.67E+01	0.83%	83.33%
26	RF-TT0802	3.65E+03	1.57E+01	0.78%	84.16%
27	RL-T137	3.56E+03	1.53E+01	0.76%	84.95%
28	RL-T140	3.51E+03	1.51E+01	0.75%	85.71%
29	RF-MT-0299	3.44E+03	1.48E+01	0.74%	86.46%
30	LL-T002	3.34E+03	1.44E+01	0.72%	87.20%
31	RF-MT532C	3.01E+03	1.30E+01	0.64%	87.92%
32	RF-TT0338	2.85E+03	1.23E+01	0.61%	88.56%
33	RL-T132	2.32E+03	1.00E+01	0.50%	89.17%
34	WP-RF005.02	2.31E+03	9.94E+00	0.50%	89.67%
35	RF-TT392P	2.29E+03	9.85E+00	0.49%	90.17%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.00%	100.00%
	Sum =	4.66E+05	2.01E+03	100.00%	N/A

4.5 CURIES ²⁴¹AM

²⁴¹Am, a radioactive isotope of Americium with a half-life of 432.2 years, is one of the key radionuclides that together contribute more than 99% of all radioactivity in the repository. ²⁴¹Am, which is found in waste streams both directly and as a result of the decay of ²⁴¹Pu (see Section 4.10), diminishes over time but remains relatively dominant 10,000 years (calendar year 12033) after closure (see Table 4.5-10).

The ²⁴¹Am curie values in Table 4.5-1 through Table 4.5-10 were sorted to illustrate the primary waste stream contributors to ²⁴¹Am activity over the entire population of waste. Each table identifies the 35 waste streams that offer the greatest contribution during each of the ten time intervals output by the code EPAUNI. All 690 waste streams and their total ²⁴¹Am curies can be found in the file EPU_CRA1BC_CH_ACTIVITY.DIA in the CRA library CRA1BC_EPU.

60.8% of the total ²⁴¹Am curie activity at closure (year 2033) is found in only five waste streams, with half of that (30.4%) residing in INEEL waste stream IN-W216.98 (see Table 4.5-1). This waste stream comprises solidified inorganics, primarily wet sludges produced by treating aqueous process wastes. Over time, IN-W216.98 (solidified inorganics, primarily wet sludges produced by treating aqueous process wastes) continues to be the dominant contributor of ²⁴¹Am due to both its initial higher activities and to the decay of ²⁴¹Pu (see Section 4.10).

Table 4.5-1. WIPP CH-TRU Waste Streams by Curies (²⁴¹Am); Time 0
(Calendar Year = 2033)

Rank Order	Waste Stream ID	Curies (²⁴¹ Am)			
		²⁴¹ Am	²⁴¹ Am /drum	% of Total	Cum. %
1	IN-W216.98	1.52E+05	2.49E+00	30.4%	30.4%
2	WP-RF009.01	6.15E+04	9.86E+00	12.3%	42.7%
3	IN-ICP-002	3.70E+04	6.16E-01	7.4%	50.1%
4	RL-W513	2.99E+04	9.92E-01	6.0%	56.0%
5	WP-INW216.001-	2.40E+04	5.61E+00	4.8%	60.8%
6	IN-ICP-005	2.15E+04	6.17E-01	4.3%	65.1%
7	IN-ICP-003	1.56E+04	6.16E-01	3.1%	68.2%
8	RL-W575	1.43E+04	1.05E+01	2.9%	71.1%
9	WP-RF118.01	1.27E+04	2.08E+00	2.5%	73.6%
10	IN-BN-510	1.15E+04	1.21E-01	2.3%	75.9%
11	WP-INW216.001-	6.58E+03	4.44E+00	1.3%	77.2%
12	WP-RF005.02	6.11E+03	1.62E+01	1.2%	78.5%
13	IN-W220.114	5.39E+03	5.93E-01	1.1%	79.5%
14	WP-RF005.01	5.15E+03	8.90E+00	1.0%	80.6%
15	OR-W201	4.48E+03	1.08E+01	0.9%	81.5%
16	LL-T002	3.77E+03	5.21E-01	0.8%	82.2%
17	LA-OS-00-01	3.58E+03	1.49E+01	0.7%	82.9%
18	RF-MT-0299	3.48E+03	2.33E+01	0.7%	83.6%
19	IN-ICP-004	3.21E+03	6.16E-01	0.6%	84.3%
20	T001-221H-HET	2.69E+03	1.44E-01	0.5%	84.8%
21	RF-TT398R	2.45E+03	7.29E+00	0.5%	85.3%
22	LA-TA-21-43	2.41E+03	1.98E-01	0.5%	85.8%
23	RF-MT532C	2.31E+03	1.94E+00	0.5%	86.2%
24	RL-W574	2.18E+03	5.55E+00	0.4%	86.7%
25	RF-TT0802	2.16E+03	7.97E+00	0.4%	87.1%
26	W027-221F-HET	2.15E+03	1.47E-01	0.4%	87.5%
27	IN-W315.601	2.08E+03	1.26E+01	0.4%	87.9%
28	WP-RF003.01	2.00E+03	1.79E+00	0.4%	88.3%
29	WP-RF006.01	1.91E+03	1.80E+00	0.4%	88.7%
30	RF-MT0001	1.87E+03	4.77E+01	0.4%	89.1%
31	RL-T107	1.86E+03	6.30E-02	0.4%	89.5%
32	RL-W753	1.66E+03	2.84E+01	0.3%	89.8%
33	IN-W218.909	1.56E+03	1.56E-01	0.3%	90.1%
34	RL-T140	1.45E+03	2.18E+00	0.3%	90.4%
35	IN-W228.101	1.40E+03	3.63E-02	0.3%	90.7%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	5.01E+05	N/A	100.0%	N/A

Table 4.5-2. WIPP CH-TRU Waste Streams by Curies (²⁴¹Am); Time 100
(Calendar Year = 2133)

Rank Order	Waste Stream ID	Curies (²⁴¹ Am)			
		²⁴¹ Am	²⁴¹ Am /drum	% of Total	Cum. %
1	IN-W216.98	1.30E+05	2.12E+00	29.6%	29.6%
2	WP-RF009.01	5.30E+04	8.49E+00	12.1%	41.7%
3	IN-ICP-002	3.15E+04	5.25E-01	7.2%	48.8%
4	RL-W513	2.71E+04	8.99E-01	6.2%	55.0%
5	WP-INW216.001-	2.04E+04	4.79E+00	4.7%	59.7%
6	IN-ICP-005	1.83E+04	5.26E-01	4.2%	63.8%
7	RL-W575	1.45E+04	1.06E+01	3.3%	67.1%
8	IN-ICP-003	1.33E+04	5.25E-01	3.0%	70.1%
9	WP-RF118.01	1.19E+04	1.95E+00	2.7%	72.9%
10	IN-BN-510	1.04E+04	1.09E-01	2.4%	75.2%
11	WP-INW216.001-	5.62E+03	3.79E+00	1.3%	76.5%
12	WP-RF005.02	5.23E+03	1.39E+01	1.2%	77.7%
13	IN-W220.114	4.60E+03	5.06E-01	1.1%	78.7%
14	WP-RF005.01	4.45E+03	7.68E+00	1.0%	79.8%
15	OR-W201	4.20E+03	1.01E+01	1.0%	80.7%
16	LL-T002	3.51E+03	4.85E-01	0.8%	81.5%
17	RF-MT-0299	3.05E+03	2.05E+01	0.7%	82.2%
18	LA-OS-00-01	3.05E+03	1.27E+01	0.7%	82.9%
19	IN-ICP-004	2.74E+03	5.25E-01	0.6%	83.5%
20	T001-221H-HET	2.50E+03	1.34E-01	0.6%	84.1%
21	RL-W574	2.22E+03	5.64E+00	0.5%	84.6%
22	RF-TT398R	2.12E+03	6.31E+00	0.5%	85.1%
23	LA-TA-21-43	2.06E+03	1.69E-01	0.5%	85.6%
24	RL-T107	2.04E+03	6.91E-02	0.5%	86.0%
25	RF-MT532C	2.04E+03	1.71E+00	0.5%	86.5%
26	RF-TT0802	1.93E+03	7.12E+00	0.4%	86.9%
27	W027-221F-HET	1.90E+03	1.30E-01	0.4%	87.4%
28	WP-RF003.01	1.85E+03	1.65E+00	0.4%	87.8%
29	IN-W315.601	1.78E+03	1.07E+01	0.4%	88.2%
30	WP-RF006.01	1.70E+03	1.60E+00	0.4%	88.6%
31	RL-W753	1.62E+03	2.78E+01	0.4%	88.9%
32	RF-MT0001	1.60E+03	4.08E+01	0.4%	89.3%
33	RL-T140	1.36E+03	2.04E+00	0.3%	89.6%
34	IN-W218.909	1.33E+03	1.33E-01	0.3%	89.9%
35	T001-221F-HET	1.26E+03	1.34E-01	0.3%	90.2%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	4.39E+05	N/A	100.0%	N/A

Table 4.5-3. WIPP CH-TRU Waste Streams by Curies (²⁴¹Am); Time 125
(Calendar Year = 2158)

Rank Order	Waste Stream ID	Curies (²⁴¹ Am)			
		²⁴¹ Am	²⁴¹ Am /drum	% of Total	Cum. %
1	IN-W216.98	1.25E+05	2.04E+00	29.6%	29.6%
2	WP-RF009.01	5.09E+04	8.16E+00	12.1%	41.6%
3	IN-ICP-002	3.02E+04	5.04E-01	7.2%	48.8%
4	RL-W513	2.60E+04	8.64E-01	6.2%	55.0%
5	WP-INW216.001-	1.96E+04	4.60E+00	4.7%	59.6%
6	IN-ICP-005	1.76E+04	5.05E-01	4.2%	63.8%
7	RL-W575	1.39E+04	1.02E+01	3.3%	67.1%
8	IN-ICP-003	1.28E+04	5.04E-01	3.0%	70.1%
9	WP-RF118.01	1.14E+04	1.87E+00	2.7%	72.8%
10	IN-BN-510	9.96E+03	1.04E-01	2.4%	75.2%
11	WP-INW216.001-	5.39E+03	3.64E+00	1.3%	76.5%
12	WP-RF005.02	5.03E+03	1.34E+01	1.2%	77.7%
13	IN-W220.114	4.42E+03	4.86E-01	1.1%	78.7%
14	WP-RF005.01	4.27E+03	7.38E+00	1.0%	79.7%
15	OR-W201	4.04E+03	9.75E+00	1.0%	80.7%
16	LL-T002	3.38E+03	4.66E-01	0.8%	81.5%
17	RF-MT-0299	2.93E+03	1.97E+01	0.7%	82.2%
18	LA-OS-00-01	2.93E+03	1.22E+01	0.7%	82.9%
19	IN-ICP-004	2.63E+03	5.04E-01	0.6%	83.5%
20	T001-221H-HET	2.40E+03	1.28E-01	0.6%	84.1%
21	RL-W574	2.14E+03	5.43E+00	0.5%	84.6%
22	RF-TT398R	2.03E+03	6.06E+00	0.5%	85.1%
23	LA-TA-21-43	1.98E+03	1.62E-01	0.5%	85.5%
24	RL-T107	1.97E+03	6.65E-02	0.5%	86.0%
25	RF-MT532C	1.96E+03	1.65E+00	0.5%	86.5%
26	RF-TT0802	1.86E+03	6.84E+00	0.4%	86.9%
27	W027-221F-HET	1.83E+03	1.25E-01	0.4%	87.3%
28	WP-RF003.01	1.78E+03	1.59E+00	0.4%	87.8%
29	IN-W315.601	1.71E+03	1.03E+01	0.4%	88.2%
30	WP-RF006.01	1.63E+03	1.54E+00	0.4%	88.5%
31	RL-W753	1.56E+03	2.67E+01	0.4%	88.9%
32	RF-MT0001	1.53E+03	3.92E+01	0.4%	89.3%
33	RL-T140	1.30E+03	1.96E+00	0.3%	89.6%
34	IN-W218.909	1.28E+03	1.28E-01	0.3%	89.9%
35	T001-221F-HET	1.21E+03	1.28E-01	0.3%	90.2%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	4.22E+05	N/A	100.0%	N/A

Table 4.5-4. WIPP CH-TRU Waste Streams by Curies (²⁴¹Am); Time 175
(Calendar Year = 2208)

Rank Order	Waste Stream ID	Curies (²⁴¹ Am)			
		²⁴¹ Am	²⁴¹ Am /drum	% of Total	Cum. %
1	IN-W216.98	1.15E+05	1.88E+00	29.6%	29.6%
2	WP-RF009.01	4.70E+04	7.53E+00	12.1%	41.7%
3	IN-ICP-002	2.79E+04	4.66E-01	7.2%	48.8%
4	RL-W513	2.40E+04	7.98E-01	6.2%	55.0%
5	WP-INW216.001-	1.81E+04	4.24E+00	4.7%	59.6%
6	IN-ICP-005	1.62E+04	4.66E-01	4.2%	63.8%
7	RL-W575	1.28E+04	9.41E+00	3.3%	67.1%
8	IN-ICP-003	1.18E+04	4.66E-01	3.0%	70.1%
9	WP-RF118.01	1.06E+04	1.73E+00	2.7%	72.8%
10	IN-BN-510	9.19E+03	9.63E-02	2.4%	75.2%
11	WP-INW216.001-	4.98E+03	3.36E+00	1.3%	76.5%
12	WP-RF005.02	4.64E+03	1.23E+01	1.2%	77.7%
13	IN-W220.114	4.08E+03	4.49E-01	1.1%	78.7%
14	WP-RF005.01	3.94E+03	6.81E+00	1.0%	79.7%
15	OR-W201	3.73E+03	9.00E+00	1.0%	80.7%
16	LL-T002	3.12E+03	4.30E-01	0.8%	81.5%
17	RF-MT-0299	2.71E+03	1.81E+01	0.7%	82.2%
18	LA-OS-00-01	2.71E+03	1.12E+01	0.7%	82.9%
19	IN-ICP-004	2.43E+03	4.65E-01	0.6%	83.5%
20	T001-221H-HET	2.22E+03	1.18E-01	0.6%	84.1%
21	RL-W574	1.97E+03	5.01E+00	0.5%	84.6%
22	RF-TT398R	1.88E+03	5.59E+00	0.5%	85.1%
23	LA-TA-21-43	1.82E+03	1.50E-01	0.5%	85.5%
24	RL-T107	1.82E+03	6.14E-02	0.5%	86.0%
25	RF-MT532C	1.81E+03	1.52E+00	0.5%	86.5%
26	RF-TT0802	1.71E+03	6.32E+00	0.4%	86.9%
27	W027-221F-HET	1.69E+03	1.15E-01	0.4%	87.3%
28	WP-RF003.01	1.64E+03	1.47E+00	0.4%	87.8%
29	IN-W315.601	1.57E+03	9.52E+00	0.4%	88.2%
30	WP-RF006.01	1.51E+03	1.42E+00	0.4%	88.6%
31	RL-W753	1.44E+03	2.47E+01	0.4%	88.9%
32	RF-MT0001	1.42E+03	3.61E+01	0.4%	89.3%
33	RL-T140	1.20E+03	1.81E+00	0.3%	89.6%
34	IN-W218.909	1.18E+03	1.18E-01	0.3%	89.9%
35	T001-221F-HET	1.12E+03	1.19E-01	0.3%	90.2%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	3.89E+05	N/A	100.0%	N/A

Table 4.5-5. WIPP CH-TRU Waste Streams by Curies (²⁴¹Am); Time 350
(Calendar Year = 2383)

Rank Order	Waste Stream ID	Curies (²⁴¹ Am)			
		²⁴¹ Am	²⁴¹ Am /drum	% of Total	Cum. %
1	IN-W216.98	8.70E+04	1.42E+00	29.6%	29.6%
2	WP-RF009.01	3.55E+04	5.69E+00	12.1%	41.7%
3	IN-ICP-002	2.11E+04	3.52E-01	7.2%	48.8%
4	RL-W513	1.81E+04	6.02E-01	6.2%	55.0%
5	WP-INW216.001-	1.37E+04	3.21E+00	4.7%	59.6%
6	IN-ICP-005	1.23E+04	3.52E-01	4.2%	63.8%
7	RL-W575	9.70E+03	7.11E+00	3.3%	67.1%
8	IN-ICP-003	8.89E+03	3.52E-01	3.0%	70.1%
9	WP-RF118.01	7.98E+03	1.30E+00	2.7%	72.8%
10	IN-BN-510	6.94E+03	7.27E-02	2.4%	75.2%
11	WP-INW216.001-	3.76E+03	2.54E+00	1.3%	76.5%
12	WP-RF005.02	3.50E+03	9.31E+00	1.2%	77.7%
13	IN-W220.114	3.08E+03	3.39E-01	1.1%	78.7%
14	WP-RF005.01	2.98E+03	5.14E+00	1.0%	79.7%
15	OR-W201	2.82E+03	6.80E+00	1.0%	80.7%
16	LL-T002	2.35E+03	3.25E-01	0.8%	81.5%
17	RF-MT-0299	2.04E+03	1.37E+01	0.7%	82.2%
18	LA-OS-00-01	2.04E+03	8.47E+00	0.7%	82.9%
19	IN-ICP-004	1.83E+03	3.52E-01	0.6%	83.5%
20	T001-221H-HET	1.68E+03	8.95E-02	0.6%	84.1%
21	RL-W574	1.49E+03	3.79E+00	0.5%	84.6%
22	RF-TT398R	1.42E+03	4.22E+00	0.5%	85.1%
23	LA-TA-21-43	1.38E+03	1.13E-01	0.5%	85.5%
24	RL-T107	1.37E+03	4.64E-02	0.5%	86.0%
25	RF-MT532C	1.37E+03	1.15E+00	0.5%	86.5%
26	RF-TT0802	1.29E+03	4.77E+00	0.4%	86.9%
27	W027-221F-HET	1.28E+03	8.70E-02	0.4%	87.3%
28	WP-RF003.01	1.24E+03	1.11E+00	0.4%	87.8%
29	IN-W315.601	1.19E+03	7.19E+00	0.4%	88.2%
30	WP-RF006.01	1.14E+03	1.07E+00	0.4%	88.6%
31	RL-W753	1.09E+03	1.86E+01	0.4%	88.9%
32	RF-MT0001	1.07E+03	2.73E+01	0.4%	89.3%
33	RL-T140	9.08E+02	1.37E+00	0.3%	89.6%
34	IN-W218.909	8.92E+02	8.92E-02	0.3%	89.9%
35	T001-221F-HET	8.44E+02	8.95E-02	0.3%	90.2%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	2.94E+05	N/A	100.0%	N/A

Table 4.5-6. WIPP CH-TRU Waste Streams by Curies (²⁴¹Am); Time 1,000
(Calendar Year = 3033)

Rank Order	Waste Stream ID	Curies (²⁴¹ Am)			
		²⁴¹ Am	²⁴¹ Am /drum	% of Total	Cum. %
1	IN-W216.98	3.07E+04	5.01E-01	29.6%	29.6%
2	WP-RF009.01	1.25E+04	2.00E+00	12.1%	41.6%
3	IN-ICP-002	7.43E+03	1.24E-01	7.2%	48.8%
4	RL-W513	6.39E+03	2.12E-01	6.2%	55.0%
5	WP-INW216.001-	4.82E+03	1.13E+00	4.7%	59.6%
6	IN-ICP-005	4.32E+03	1.24E-01	4.2%	63.8%
7	RL-W575	3.42E+03	2.51E+00	3.3%	67.1%
8	IN-ICP-003	3.13E+03	1.24E-01	3.0%	70.1%
9	WP-RF118.01	2.81E+03	4.60E-01	2.7%	72.8%
10	IN-BN-510	2.45E+03	2.57E-02	2.4%	75.2%
11	WP-INW216.001-	1.33E+03	8.94E-01	1.3%	76.5%
12	WP-RF005.02	1.24E+03	3.29E+00	1.2%	77.7%
13	IN-W220.114	1.09E+03	1.20E-01	1.1%	78.7%
14	WP-RF005.01	1.05E+03	1.81E+00	1.0%	79.7%
15	OR-W201	9.93E+02	2.40E+00	1.0%	80.7%
16	LL-T002	8.30E+02	1.15E-01	0.8%	81.5%
17	RF-MT-0299	7.21E+02	4.83E+00	0.7%	82.2%
18	LA-OS-00-01	7.21E+02	2.99E+00	0.7%	82.9%
19	IN-ICP-004	6.46E+02	1.24E-01	0.6%	83.5%
20	T001-221H-HET	5.91E+02	3.16E-02	0.6%	84.1%
21	RL-W574	5.25E+02	1.33E+00	0.5%	84.6%
22	RF-TT398R	5.00E+02	1.49E+00	0.5%	85.0%
23	LA-TA-21-43	4.85E+02	3.99E-02	0.5%	85.5%
24	RL-T107	4.84E+02	1.64E-02	0.5%	86.0%
25	RF-MT532C	4.82E+02	4.05E-01	0.5%	86.4%
26	RF-TT0802	4.56E+02	1.68E+00	0.4%	86.9%
27	W027-221F-HET	4.50E+02	3.07E-02	0.4%	87.3%
28	WP-RF003.01	4.36E+02	3.91E-01	0.4%	87.7%
29	IN-W315.601	4.19E+02	2.54E+00	0.4%	88.1%
30	WP-RF006.01	4.01E+02	3.78E-01	0.4%	88.5%
31	RL-W753	3.84E+02	6.57E+00	0.4%	88.9%
32	RF-MT0001	3.77E+02	9.63E+00	0.4%	89.3%
33	RL-T140	3.20E+02	4.83E-01	0.3%	89.6%
34	IN-W218.909	3.15E+02	3.14E-02	0.3%	89.9%
35	T001-221F-HET	2.98E+02	3.16E-02	0.3%	90.2%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	1.04E+05	N/A	100.0%	N/A

Table 4.5-7. WIPP CH-TRU Waste Streams by Curies (²⁴¹Am); Time 3,000
(Calendar Year = 5033)

Rank Order	Waste Stream ID	Curies (²⁴¹ Am)			
		²⁴¹ Am	²⁴¹ Am /drum	% of Total	Cum. %
1	IN-W216.98	1.24E+03	2.03E-02	29.6%	29.6%
2	WP-RF009.01	5.06E+02	8.12E-02	12.1%	41.7%
3	IN-ICP-002	3.01E+02	5.02E-03	7.2%	48.8%
4	RL-W513	2.59E+02	8.60E-03	6.2%	55.0%
5	WP-INW216.001-	1.95E+02	4.58E-02	4.7%	59.7%
6	IN-ICP-005	1.75E+02	5.03E-03	4.2%	63.8%
7	RL-W575	1.38E+02	1.01E-01	3.3%	67.1%
8	IN-ICP-003	1.27E+02	5.02E-03	3.0%	70.1%
9	WP-RF118.01	1.14E+02	1.86E-02	2.7%	72.9%
10	IN-BN-510	9.91E+01	1.04E-03	2.4%	75.2%
11	WP-INW216.001-	5.37E+01	3.62E-02	1.3%	76.5%
12	WP-RF005.02	5.00E+01	1.33E-01	1.2%	77.7%
13	IN-W220.114	4.40E+01	4.84E-03	1.1%	78.7%
14	WP-RF005.01	4.25E+01	7.34E-02	1.0%	79.7%
15	OR-W201	4.02E+01	9.70E-02	1.0%	80.7%
16	LL-T002	3.36E+01	4.64E-03	0.8%	81.5%
17	RF-MT-0299	2.92E+01	1.96E-01	0.7%	82.2%
18	LA-OS-00-01	2.92E+01	1.21E-01	0.7%	82.9%
19	IN-ICP-004	2.61E+01	5.02E-03	0.6%	83.5%
20	T001-221H-HET	2.39E+01	1.28E-03	0.6%	84.1%
21	RL-W574	2.12E+01	5.40E-02	0.5%	84.6%
22	RF-TT398R	2.02E+01	6.03E-02	0.5%	85.1%
23	LA-TA-21-43	1.96E+01	1.61E-03	0.5%	85.5%
24	RL-T107	1.96E+01	6.62E-04	0.5%	86.0%
25	RF-MT532C	1.95E+01	1.64E-02	0.5%	86.5%
26	RF-TT0802	1.85E+01	6.81E-02	0.4%	86.9%
27	W027-221F-HET	1.82E+01	1.24E-03	0.4%	87.4%
28	WP-RF003.01	1.77E+01	1.58E-02	0.4%	87.8%
29	IN-W315.601	1.70E+01	1.03E-01	0.4%	88.2%
30	WP-RF006.01	1.62E+01	1.53E-02	0.4%	88.6%
31	RL-W753	1.55E+01	2.66E-01	0.4%	88.9%
32	RF-MT0001	1.53E+01	3.90E-01	0.4%	89.3%
33	RL-T140	1.30E+01	1.95E-02	0.3%	89.6%
34	IN-W218.909	1.27E+01	1.27E-03	0.3%	89.9%
35	T001-221F-HET	1.21E+01	1.28E-03	0.3%	90.2%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	4.20E+03	N/A	100.0%	N/A

Table 4.5-8. WIPP CH-TRU Waste Streams by Curies (²⁴¹Am); Time 5,000
(Calendar Year = 7033)

Rank Order	Waste Stream ID	Curies (²⁴¹ Am)			
		²⁴¹ Am	²⁴¹ Am /drum	% of Total	Cum. %
1	IN-W216.98	5.02E+01	8.21E-04	29.6%	29.6%
2	WP-RF009.01	2.05E+01	3.28E-03	12.1%	41.6%
3	IN-ICP-002	1.22E+01	2.03E-04	7.2%	48.8%
4	RL-W513	1.05E+01	3.48E-04	6.2%	55.0%
5	WP-INW216.001-	7.90E+00	1.85E-03	4.7%	59.6%
6	IN-ICP-005	7.07E+00	2.03E-04	4.2%	63.8%
7	RL-W575	5.60E+00	4.10E-03	3.3%	67.1%
8	IN-ICP-003	5.13E+00	2.03E-04	3.0%	70.1%
9	WP-RF118.01	4.61E+00	7.53E-04	2.7%	72.8%
10	IN-BN-510	4.01E+00	4.20E-05	2.4%	75.2%
11	WP-INW216.001-	2.17E+00	1.46E-03	1.3%	76.5%
12	WP-RF005.02	2.02E+00	5.38E-03	1.2%	77.7%
13	IN-W220.114	1.78E+00	1.96E-04	1.1%	78.7%
14	WP-RF005.01	1.72E+00	2.97E-03	1.0%	79.7%
15	OR-W201	1.63E+00	3.93E-03	1.0%	80.7%
16	LL-T002	1.36E+00	1.88E-04	0.8%	81.5%
17	RF-MT-0299	1.18E+00	7.92E-03	0.7%	82.2%
18	LA-OS-00-01	1.18E+00	4.89E-03	0.7%	82.9%
19	IN-ICP-004	1.06E+00	2.03E-04	0.6%	83.5%
20	T001-221H-HET	9.68E-01	5.17E-05	0.6%	84.1%
21	RL-W574	8.60E-01	2.19E-03	0.5%	84.6%
22	RF-TT398R	8.18E-01	2.44E-03	0.5%	85.1%
23	LA-TA-21-43	7.95E-01	6.53E-05	0.5%	85.5%
24	RL-T107	7.92E-01	2.68E-05	0.5%	86.0%
25	RF-MT532C	7.89E-01	6.63E-04	0.5%	86.5%
26	RF-TT0802	7.47E-01	2.76E-03	0.4%	86.9%
27	W027-221F-HET	7.36E-01	5.02E-05	0.4%	87.3%
28	WP-RF003.01	7.15E-01	6.41E-04	0.4%	87.7%
29	IN-W315.601	6.86E-01	4.15E-03	0.4%	88.2%
30	WP-RF006.01	6.57E-01	6.19E-04	0.4%	88.5%
31	RL-W753	6.28E-01	1.08E-02	0.4%	88.9%
32	RF-MT0001	6.17E-01	1.58E-02	0.4%	89.3%
33	RL-T140	5.24E-01	7.90E-04	0.3%	89.6%
34	IN-W218.909	5.15E-01	5.15E-05	0.3%	89.9%
35	T001-221F-HET	4.88E-01	5.17E-05	0.3%	90.2%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	1.70E+02	N/A	100.0%	N/A

Table 4.5-9. WIPP CH-TRU Waste Streams by Curies (²⁴¹Am); Time 7,500
(Calendar Year = 9533)

Rank Order	Waste Stream ID	Curies (²⁴¹ Am)			
		²⁴¹ Am	²⁴¹ Am /drum	% of Total	Cum. %
1	IN-W216.98	9.11E-01	1.49E-05	29.6%	29.6%
2	WP-RF009.01	3.72E-01	5.96E-05	12.1%	41.7%
3	IN-ICP-002	2.21E-01	3.69E-06	7.2%	48.8%
4	RL-W513	1.90E-01	6.32E-06	6.2%	55.0%
5	WP-INW216.001-	1.43E-01	3.36E-05	4.7%	59.7%
6	IN-ICP-005	1.28E-01	3.69E-06	4.2%	63.8%
7	RL-W575	1.02E-01	7.45E-05	3.3%	67.1%
8	IN-ICP-003	9.32E-02	3.69E-06	3.0%	70.1%
9	WP-RF118.01	8.36E-02	1.37E-05	2.7%	72.9%
10	IN-BN-510	7.28E-02	7.62E-07	2.4%	75.2%
11	WP-INW216.001-	3.94E-02	2.66E-05	1.3%	76.5%
12	WP-RF005.02	3.67E-02	9.76E-05	1.2%	77.7%
13	IN-W220.114	3.23E-02	3.55E-06	1.1%	78.7%
14	WP-RF005.01	3.12E-02	5.39E-05	1.0%	79.8%
15	OR-W201	2.95E-02	7.13E-05	1.0%	80.7%
16	LL-T002	2.47E-02	3.41E-06	0.8%	81.5%
17	RF-MT-0299	2.14E-02	1.44E-04	0.7%	82.2%
18	LA-OS-00-01	2.14E-02	8.88E-05	0.7%	82.9%
19	IN-ICP-004	1.92E-02	3.68E-06	0.6%	83.5%
20	T001-221H-HET	1.76E-02	9.38E-07	0.6%	84.1%
21	RL-W574	1.56E-02	3.09E-03	0.5%	84.6%
22	RF-TT398R	1.49E-02	4.43E-05	0.5%	85.1%
23	LA-TA-21-43	1.44E-02	1.19E-06	0.5%	85.6%
24	RL-T107	1.44E-02	4.86E-07	0.5%	86.0%
25	RF-MT532C	1.43E-02	1.20E-05	0.5%	86.5%
26	RF-TT0802	1.36E-02	5.00E-05	0.4%	86.9%
27	W027-221F-HET	1.34E-02	9.12E-07	0.4%	87.4%
28	WP-RF003.01	1.30E-02	1.16E-05	0.4%	87.8%
29	IN-W315.601	1.25E-02	7.54E-05	0.4%	88.2%
30	WP-RF006.01	1.19E-02	1.12E-05	0.4%	88.6%
31	RL-W753	1.14E-02	1.95E-04	0.4%	88.9%
32	RF-MT0001	1.12E-02	2.86E-04	0.4%	89.3%
33	RL-T140	9.52E-03	1.43E-05	0.3%	89.6%
34	IN-W218.909	9.35E-03	9.35E-07	0.3%	89.9%
35	T001-221F-HET	8.85E-03	9.38E-07	0.3%	90.2%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	3.08E+00	N/A	100.0%	N/A

Table 4.5-10. WIPP CH-TRU Waste Streams by Curies (²⁴¹Am); Time 10,000
(Calendar Year = 12033)

Rank Order	Waste Stream ID	Curies (²⁴¹ Am)			
		²⁴¹ Am	²⁴¹ Am /drum	% of Total	Cum. %
1	IN-W216.98	1.65E-02	2.70E-07	29.6%	29.6%
2	WP-RF009.01	6.75E-03	1.08E-06	12.1%	41.7%
3	IN-ICP-002	4.01E-03	6.69E-08	7.2%	48.8%
4	RL-W513	3.45E-03	1.15E-07	6.2%	55.0%
5	WP-INW216.001-	2.60E-03	6.10E-07	4.7%	59.7%
6	IN-ICP-005	2.33E-03	6.70E-08	4.2%	63.8%
7	RL-W575	1.85E-03	1.35E-06	3.3%	67.1%
8	IN-ICP-003	1.69E-03	6.69E-08	3.0%	70.1%
9	WP-RF118.01	1.52E-03	2.48E-07	2.7%	72.9%
10	IN-BN-510	1.32E-03	1.38E-08	2.4%	75.2%
11	WP-INW216.001-	7.15E-04	4.82E-07	1.3%	76.5%
12	WP-RF005.02	6.67E-04	1.77E-06	1.2%	77.7%
13	IN-W220.114	5.86E-04	6.45E-08	1.1%	78.7%
14	WP-RF005.01	5.66E-04	9.78E-07	1.0%	79.8%
15	OR-W201	5.36E-04	1.29E-06	1.0%	80.7%
16	LL-T002	4.48E-04	6.18E-08	0.8%	81.5%
17	RF-MT-0299	3.89E-04	2.61E-06	0.7%	82.2%
18	LA-OS-00-01	3.89E-04	1.61E-06	0.7%	82.9%
19	IN-ICP-004	3.49E-04	6.69E-08	0.6%	83.5%
20	T001-221H-HET	3.19E-04	1.70E-08	0.6%	84.1%
21	RL-W574	2.83E-04	7.20E-07	0.5%	84.6%
22	RF-TT398R	2.70E-04	8.04E-07	0.5%	85.1%
23	LA-TA-21-43	2.62E-04	2.15E-08	0.5%	85.5%
24	RL-T107	2.61E-04	8.82E-09	0.5%	86.0%
25	RF-MT532C	2.60E-04	2.19E-07	0.5%	86.5%
26	RF-TT0802	2.46E-04	9.08E-07	0.4%	86.9%
27	W027-221F-HET	2.43E-04	1.65E-08	0.4%	87.4%
28	WP-RF003.01	2.35E-04	2.11E-07	0.4%	87.8%
29	IN-W315.601	2.26E-04	1.37E-06	0.4%	88.2%
30	WP-RF006.01	2.17E-04	2.04E-07	0.4%	88.6%
31	RL-W753	2.07E-04	3.55E-06	0.4%	88.9%
32	RF-MT0001	2.03E-04	5.19E-06	0.4%	89.3%
33	RL-T140	1.73E-04	2.60E-07	0.3%	89.6%
34	IN-W218.909	1.70E-04	1.70E-08	0.3%	89.9%
35	T001-221F-HET	1.61E-04	1.70E-08	0.3%	90.2%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	5.59E-02	N/A	100.0%	N/A

4.6 CURIES ^{244}Cm

^{244}Cm , a radioactive isotope of Curium with a half-life of 18.1 years, is not one of the key radionuclides, nor is it transuranic due to its half-life being less than 20 years. However, the ^{244}Cm contributes indirectly by alpha decaying to ^{240}Pu (see Section 4.9) and diminishes over time until it contributes no activity at time interval 7,500 years (year 9533) (Table 4.6-9).

The ^{244}Cm curie values in Table 4.6-1 through Table 4.6-10 were sorted to illustrate the primary waste stream contributors to ^{244}Cm activity over the entire population of waste. Each table identifies the 35 waste streams that offer the greatest contribution during each of the ten time intervals output by the code EPAUNI. All 690 waste streams and their total ^{244}Cm curies can be found in the file EPU_CRA1BC_CH_ACTIVITY.DIA in the CRA library CRA1BC_EPU.

Only sixteen waste streams (of the entire 690) contribute ^{244}Cm activity to the repository, with 93.5% of the total ^{244}Cm activity occurring in just two waste streams (see Table 4.6-1). These two waste streams are:

- A Lawrence Livermore National Laboratory (LLNL) waste stream, LL-T005, which consists of filters and contributes 54.9% of the total ^{244}Cm activity, and
- An Oak Ridge National Laboratory (ORNL) waste stream, OR-W202, which consists of heterogeneous debris and contributes 38.6% of the total ^{244}Cm activity.

Table 4.6-1. WIPP CH-TRU Waste Streams by Curies (²⁴⁴Cm); Time 0
(Calendar Year = 2033)

Rank Order	Waste Stream ID	Curies (²⁴⁴ Cm)			
		²⁴⁴ Cm	²⁴⁴ Cm /drum	% of Total	Cum. %
1	LL-T005	9.96E+02	2.43E-01	54.9%	54.9%
2	OR-W202	6.99E+02	3.49E-01	38.6%	93.5%
3	OR-W201	3.35E+01	8.09E-02	1.8%	95.4%
4	LL-M001	2.77E+01	1.85E-01	1.5%	96.9%
5	OR-W203	2.43E+01	3.54E-02	1.3%	98.2%
6	LL-W034	2.23E+01	2.21E-01	1.2%	99.5%
7	LA-TA-48-01	7.70E+00	2.59E+00	0.4%	99.9%
8	SA-T001	1.40E+00	5.40E-02	0.1%	100.0%
9	NT-W001	6.76E-01	2.24E-04	0.0%	100.0%
10	LA-IT-00-01	4.79E-01	1.02E-02	0.0%	100.0%
11	BT-T002	7.43E-04	8.32E-06	0.0%	100.0%
12	LA-TA-55-21	6.67E-04	1.40E-06	0.0%	100.0%
13	SA-W134	5.44E-04	7.06E-06	0.0%	100.0%
14	OR-W204	1.01E-04	7.63E-07	0.0%	100.0%
15	SA-W134M	7.05E-05	7.06E-06	0.0%	100.0%
16	LA-TA-55-30	5.20E-06	3.99E-10	0.0%	100.0%
17	IN-W216.98	0.00E+00	0.00E+00	0.0%	100.0%
18	WP-RF009.01	0.00E+00	0.00E+00	0.0%	100.0%
19	IN-ICP-002	0.00E+00	0.00E+00	0.0%	100.0%
20	RL-W513	0.00E+00	0.00E+00	0.0%	100.0%
21	WP-INW216.001-	0.00E+00	0.00E+00	0.0%	100.0%
22	IN-ICP-005	0.00E+00	0.00E+00	0.0%	100.0%
23	IN-ICP-003	0.00E+00	0.00E+00	0.0%	100.0%
24	RL-W575	0.00E+00	0.00E+00	0.0%	100.0%
25	WP-RF118.01	0.00E+00	0.00E+00	0.0%	100.0%
26	IN-BN-510	0.00E+00	0.00E+00	0.0%	100.0%
27	WP-INW216.001-	0.00E+00	0.00E+00	0.0%	100.0%
28	WP-RF005.02	0.00E+00	0.00E+00	0.0%	100.0%
29	IN-W220.114	0.00E+00	0.00E+00	0.0%	100.0%
30	WP-RF005.01	0.00E+00	0.00E+00	0.0%	100.0%
31	LL-T002	0.00E+00	0.00E+00	0.0%	100.0%
32	LA-OS-00-01	0.00E+00	0.00E+00	0.0%	100.0%
33	RF-MT-0299	0.00E+00	0.00E+00	0.0%	100.0%
34	IN-ICP-004	0.00E+00	0.00E+00	0.0%	100.0%
35	T001-221H-HET	0.00E+00	0.00E+00	0.0%	100.0%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	1.81E+03	N/A	100.0%	N/A

Table 4.6-2. WIPP CH-TRU Waste Streams by Curies (²⁴⁴Cm); Time 100
(Calendar Year = 2133)

Rank Order	Waste Stream ID	Curies (²⁴⁴ Cm)			
		²⁴⁴ Cm	²⁴⁴ Cm /drum	% of Total	Cum. %
1	LL-T005	2.17E+01	5.30E-03	54.9%	54.9%
2	OR-W202	1.52E+01	7.59E-03	38.6%	93.5%
3	OR-W201	7.29E-01	1.76E-03	1.8%	95.3%
4	LL-M001	6.03E-01	4.04E-03	1.5%	96.9%
5	OR-W203	5.29E-01	7.71E-04	1.3%	98.2%
6	LL-W034	4.85E-01	4.82E-03	1.2%	99.4%
7	LA-TA-48-01	1.68E-01	5.63E-02	0.4%	99.9%
8	SA-T001	3.06E-02	1.18E-03	0.1%	99.9%
9	NT-W001	1.47E-02	4.89E-06	0.0%	100.0%
10	LA-IT-00-01	1.04E-02	2.22E-04	0.0%	100.0%
11	BT-T002	1.62E-05	1.81E-07	0.0%	100.0%
12	LA-TA-55-21	1.45E-05	3.05E-08	0.0%	100.0%
13	SA-W134	1.18E-05	1.54E-07	0.0%	100.0%
14	OR-W204	2.19E-06	1.66E-08	0.0%	100.0%
15	SA-W134M	1.54E-06	1.54E-07	0.0%	100.0%
16	LA-TA-55-30	1.13E-07	8.69E-12	0.0%	100.0%
17	IN-W216.98	0.00E+00	0.00E+00	0.0%	100.0%
18	WP-RF009.01	0.00E+00	0.00E+00	0.0%	100.0%
19	IN-ICP-002	0.00E+00	0.00E+00	0.0%	100.0%
20	RL-W513	0.00E+00	0.00E+00	0.0%	100.0%
21	WP-INW216.001-	0.00E+00	0.00E+00	0.0%	100.0%
22	IN-ICP-005	0.00E+00	0.00E+00	0.0%	100.0%
23	RL-W575	0.00E+00	0.00E+00	0.0%	100.0%
24	IN-ICP-003	0.00E+00	0.00E+00	0.0%	100.0%
25	WP-RF118.01	0.00E+00	0.00E+00	0.0%	100.0%
26	IN-BN-510	0.00E+00	0.00E+00	0.0%	100.0%
27	WP-INW216.001-	0.00E+00	0.00E+00	0.0%	100.0%
28	WP-RF005.02	0.00E+00	0.00E+00	0.0%	100.0%
29	IN-W220.114	0.00E+00	0.00E+00	0.0%	100.0%
30	WP-RF005.01	0.00E+00	0.00E+00	0.0%	100.0%
31	LL-T002	0.00E+00	0.00E+00	0.0%	100.0%
32	RF-MT-0299	0.00E+00	0.00E+00	0.0%	100.0%
33	LA-OS-00-01	0.00E+00	0.00E+00	0.0%	100.0%
34	IN-ICP-004	0.00E+00	0.00E+00	0.0%	100.0%
35	T001-221H-HET	0.00E+00	0.00E+00	0.0%	100.0%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	3.95E+01	N/A	100.0%	N/A

Table 4.6-3. WIPP CH-TRU Waste Streams by Curies (²⁴⁴Cm); Time 125
(Calendar Year = 2158)

Rank Order	Waste Stream ID	Curies (²⁴⁴ Cm)			
		²⁴⁴ Cm	²⁴⁴ Cm /drum	% of Total	Cum. %
1	LL-T005	8.33E+00	2.03E-03	54.9%	54.9%
2	OR-W202	5.85E+00	2.91E-03	38.6%	93.5%
3	OR-W201	2.80E-01	6.76E-04	1.8%	95.4%
4	LL-M001	2.32E-01	1.55E-03	1.5%	96.9%
5	OR-W203	2.03E-01	2.96E-04	1.3%	98.2%
6	LL-W034	1.87E-01	1.85E-03	1.2%	99.4%
7	LA-TA-48-01	6.44E-02	2.16E-02	0.4%	99.9%
8	SA-T001	1.17E-02	4.52E-04	0.1%	100.0%
9	NT-W001	5.65E-03	1.88E-06	0.0%	100.0%
10	LA-IT-00-01	4.00E-03	8.52E-05	0.0%	100.0%
11	BT-T002	6.22E-06	6.96E-08	0.0%	100.0%
12	LA-TA-55-21	5.58E-06	1.17E-08	0.0%	100.0%
13	SA-W134	4.55E-06	5.91E-08	0.0%	100.0%
14	OR-W204	8.43E-07	6.38E-09	0.0%	100.0%
15	SA-W134M	5.90E-07	5.90E-08	0.0%	100.0%
16	LA-TA-55-30	4.35E-08	3.34E-12	0.0%	100.0%
17	IN-W216.98	0.00E+00	0.00E+00	0.0%	100.0%
18	WP-RF009.01	0.00E+00	0.00E+00	0.0%	100.0%
19	IN-ICP-002	0.00E+00	0.00E+00	0.0%	100.0%
20	RL-W513	0.00E+00	0.00E+00	0.0%	100.0%
21	WP-INW216.001-	0.00E+00	0.00E+00	0.0%	100.0%
22	IN-ICP-005	0.00E+00	0.00E+00	0.0%	100.0%
23	RL-W575	0.00E+00	0.00E+00	0.0%	100.0%
24	IN-ICP-003	0.00E+00	0.00E+00	0.0%	100.0%
25	WP-RF118.01	0.00E+00	0.00E+00	0.0%	100.0%
26	IN-BN-510	0.00E+00	0.00E+00	0.0%	100.0%
27	WP-INW216.001-	0.00E+00	0.00E+00	0.0%	100.0%
28	WP-RF005.02	0.00E+00	0.00E+00	0.0%	100.0%
29	IN-W220.114	0.00E+00	0.00E+00	0.0%	100.0%
30	WP-RF005.01	0.00E+00	0.00E+00	0.0%	100.0%
31	LL-T002	0.00E+00	0.00E+00	0.0%	100.0%
32	RF-MT-0299	0.00E+00	0.00E+00	0.0%	100.0%
33	LA-OS-00-01	0.00E+00	0.00E+00	0.0%	100.0%
34	IN-ICP-004	0.00E+00	0.00E+00	0.0%	100.0%
35	T001-221H-HET	0.00E+00	0.00E+00	0.0%	100.0%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	1.52E+01	N/A	100.0%	N/A

Table 4.6-4. WIPP CH-TRU Waste Streams by Curies (²⁴⁴Cm); Time 175
(Calendar Year = 2208)

Rank Order	Waste Stream ID	Curies (²⁴⁴ Cm)			
		²⁴⁴ Cm	²⁴⁴ Cm /drum	% of Total	Cum. %
1	LL-T005	1.23E+00	3.00E-04	54.9%	54.9%
2	OR-W202	8.63E-01	4.30E-04	38.6%	93.5%
3	OR-W201	4.13E-02	9.98E-05	1.8%	95.3%
4	LL-M001	3.42E-02	2.29E-04	1.5%	96.9%
5	OR-W203	3.00E-02	4.37E-05	1.3%	98.2%
6	LL-W034	2.75E-02	2.73E-04	1.2%	99.4%
7	LA-TA-48-01	9.50E-03	3.19E-03	0.4%	99.9%
8	SA-T001	1.73E-03	6.67E-05	0.1%	99.9%
9	NT-W001	8.34E-04	2.77E-07	0.0%	100.0%
10	LA-IT-00-01	5.91E-04	1.26E-05	0.0%	100.0%
11	BT-T002	9.17E-07	1.03E-08	0.0%	100.0%
12	LA-TA-55-21	8.23E-07	1.73E-09	0.0%	100.0%
13	SA-W134	6.71E-07	8.71E-09	0.0%	100.0%
14	OR-W204	1.24E-07	9.41E-10	0.0%	100.0%
15	SA-W134M	8.70E-08	8.71E-09	0.0%	100.0%
16	LA-TA-55-30	6.42E-09	4.92E-13	0.0%	100.0%
17	IN-W216.98	0.00E+00	0.00E+00	0.0%	100.0%
18	WP-RF009.01	0.00E+00	0.00E+00	0.0%	100.0%
19	IN-ICP-002	0.00E+00	0.00E+00	0.0%	100.0%
20	RL-W513	0.00E+00	0.00E+00	0.0%	100.0%
21	WP-INW216.001-	0.00E+00	0.00E+00	0.0%	100.0%
22	IN-ICP-005	0.00E+00	0.00E+00	0.0%	100.0%
23	RL-W575	0.00E+00	0.00E+00	0.0%	100.0%
24	IN-ICP-003	0.00E+00	0.00E+00	0.0%	100.0%
25	WP-RF118.01	0.00E+00	0.00E+00	0.0%	100.0%
26	IN-BN-510	0.00E+00	0.00E+00	0.0%	100.0%
27	WP-INW216.001-	0.00E+00	0.00E+00	0.0%	100.0%
28	WP-RF005.02	0.00E+00	0.00E+00	0.0%	100.0%
29	IN-W220.114	0.00E+00	0.00E+00	0.0%	100.0%
30	WP-RF005.01	0.00E+00	0.00E+00	0.0%	100.0%
31	LL-T002	0.00E+00	0.00E+00	0.0%	100.0%
32	RF-MT-0299	0.00E+00	0.00E+00	0.0%	100.0%
33	LA-OS-00-01	0.00E+00	0.00E+00	0.0%	100.0%
34	IN-ICP-004	0.00E+00	0.00E+00	0.0%	100.0%
35	T001-221H-HET	0.00E+00	0.00E+00	0.0%	100.0%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	2.24E+00	N/A	100.0%	N/A

Table 4.6-5. WIPP CH-TRU Waste Streams by Curies (²⁴⁴Cm); Time 350
(Calendar Year = 2383)

Rank Order	Waste Stream ID	Curies (²⁴⁴ Cm)			
		²⁴⁴ Cm	²⁴⁴ Cm /drum	% of Total	Cum. %
1	LL-T005	1.52E-03	3.70E-07	54.9%	54.9%
2	OR-W202	1.06E-03	5.30E-07	38.6%	93.5%
3	OR-W201	5.10E-05	1.23E-07	1.8%	95.4%
4	LL-M001	4.22E-05	2.82E-07	1.5%	96.9%
5	OR-W203	3.70E-05	5.39E-08	1.3%	98.2%
6	LL-W034	3.39E-05	3.37E-07	1.2%	99.5%
7	LA-TA-48-01	1.17E-05	3.93E-06	0.4%	99.9%
8	SA-T001	2.14E-06	8.22E-08	0.1%	100.0%
9	NT-W001	1.03E-06	3.41E-10	0.0%	100.0%
10	LA-IT-00-01	7.29E-07	1.55E-08	0.0%	100.0%
11	BT-T002	1.13E-09	1.27E-11	0.0%	100.0%
12	LA-TA-55-21	1.02E-09	2.13E-12	0.0%	100.0%
13	SA-W134	8.27E-10	1.07E-11	0.0%	100.0%
14	OR-W204	1.53E-10	1.16E-12	0.0%	100.0%
15	SA-W134M	1.07E-10	1.07E-11	0.0%	100.0%
16	LA-TA-55-30	7.91E-12	6.07E-16	0.0%	100.0%
17	IN-W216.98	0.00E+00	0.00E+00	0.0%	100.0%
18	WP-RF009.01	0.00E+00	0.00E+00	0.0%	100.0%
19	IN-ICP-002	0.00E+00	0.00E+00	0.0%	100.0%
20	RL-W513	0.00E+00	0.00E+00	0.0%	100.0%
21	WP-INW216.001-	0.00E+00	0.00E+00	0.0%	100.0%
22	IN-ICP-005	0.00E+00	0.00E+00	0.0%	100.0%
23	RL-W575	0.00E+00	0.00E+00	0.0%	100.0%
24	IN-ICP-003	0.00E+00	0.00E+00	0.0%	100.0%
25	WP-RF118.01	0.00E+00	0.00E+00	0.0%	100.0%
26	IN-BN-510	0.00E+00	0.00E+00	0.0%	100.0%
27	WP-INW216.001-	0.00E+00	0.00E+00	0.0%	100.0%
28	WP-RF005.02	0.00E+00	0.00E+00	0.0%	100.0%
29	IN-W220.114	0.00E+00	0.00E+00	0.0%	100.0%
30	WP-RF005.01	0.00E+00	0.00E+00	0.0%	100.0%
31	LL-T002	0.00E+00	0.00E+00	0.0%	100.0%
32	RF-MT-0299	0.00E+00	0.00E+00	0.0%	100.0%
33	LA-OS-00-01	0.00E+00	0.00E+00	0.0%	100.0%
34	IN-ICP-004	0.00E+00	0.00E+00	0.0%	100.0%
35	T001-221H-HET	0.00E+00	0.00E+00	0.0%	100.0%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	2.76E-03	N/A	100.0%	N/A

Table 4.6-6. WIPP CH-TRU Waste Streams by Curies (²⁴⁴Cm); Time 1,000
(Calendar Year = 3033)

Rank Order	Waste Stream ID	Curies (²⁴⁴ Cm)			
		²⁴⁴ Cm	²⁴⁴ Cm /drum	% of Total	Cum. %
1	LL-T005	2.38E-14	5.81E-18	54.9%	54.9%
2	OR-W202	1.67E-14	8.32E-18	38.6%	93.5%
3	OR-W201	8.00E-16	1.93E-18	1.8%	95.3%
4	LL-M001	6.62E-16	4.43E-18	1.5%	96.9%
5	OR-W203	5.80E-16	8.46E-19	1.3%	98.2%
6	LL-W034	5.32E-16	5.28E-18	1.2%	99.4%
7	LA-TA-48-01	1.84E-16	6.17E-17	0.4%	99.9%
8	SA-T001	3.35E-17	1.29E-18	0.1%	99.9%
9	NT-W001	1.61E-17	5.36E-21	0.0%	100.0%
10	LA-IT-00-01	1.14E-17	2.43E-19	0.0%	100.0%
11	BT-T002	1.78E-20	1.99E-22	0.0%	100.0%
12	LA-TA-55-21	1.59E-20	3.35E-23	0.0%	100.0%
13	SA-W134	1.30E-20	1.69E-22	0.0%	100.0%
14	OR-W204	2.41E-21	1.82E-23	0.0%	100.0%
15	SA-W134M	1.68E-21	1.69E-22	0.0%	100.0%
16	LA-TA-55-30	1.24E-22	9.53E-27	0.0%	100.0%
17	IN-W216.98	0.00E+00	0.00E+00	0.0%	100.0%
18	WP-RF009.01	0.00E+00	0.00E+00	0.0%	100.0%
19	IN-ICP-002	0.00E+00	0.00E+00	0.0%	100.0%
20	RL-W513	0.00E+00	0.00E+00	0.0%	100.0%
21	WP-INW216.001-	0.00E+00	0.00E+00	0.0%	100.0%
22	IN-ICP-005	0.00E+00	0.00E+00	0.0%	100.0%
23	RL-W575	0.00E+00	0.00E+00	0.0%	100.0%
24	IN-ICP-003	0.00E+00	0.00E+00	0.0%	100.0%
25	WP-RF118.01	0.00E+00	0.00E+00	0.0%	100.0%
26	IN-BN-510	0.00E+00	0.00E+00	0.0%	100.0%
27	WP-INW216.001-	0.00E+00	0.00E+00	0.0%	100.0%
28	WP-RF005.02	0.00E+00	0.00E+00	0.0%	100.0%
29	IN-W220.114	0.00E+00	0.00E+00	0.0%	100.0%
30	WP-RF005.01	0.00E+00	0.00E+00	0.0%	100.0%
31	LL-T002	0.00E+00	0.00E+00	0.0%	100.0%
32	RF-MT-0299	0.00E+00	0.00E+00	0.0%	100.0%
33	LA-OS-00-01	0.00E+00	0.00E+00	0.0%	100.0%
34	IN-ICP-004	0.00E+00	0.00E+00	0.0%	100.0%
35	T001-221H-HET	0.00E+00	0.00E+00	0.0%	100.0%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	4.33E-14	N/A	100.0%	N/A

Table 4.6-7. WIPP CH-TRU Waste Streams by Curies (²⁴⁴Cm); Time 3,000
(Calendar Year = 5033)

Rank Order	Waste Stream ID	Curies (²⁴⁴ Cm)			
		²⁴⁴ Cm	²⁴⁴ Cm /drum	% of Total	Cum. %
1	LL-T005	1.36E-47	3.31E-51	54.9%	54.9%
2	OR-W202	9.52E-48	4.74E-51	38.6%	93.5%
3	OR-W201	4.56E-49	1.10E-51	1.8%	95.3%
4	LL-M001	3.77E-49	2.52E-51	1.5%	96.9%
5	OR-W203	3.31E-49	4.82E-52	1.3%	98.2%
6	LL-W034	3.03E-49	3.01E-51	1.2%	99.4%
7	LA-TA-48-01	1.05E-49	3.52E-50	0.4%	99.9%
8	SA-T001	1.91E-50	7.35E-52	0.1%	99.9%
9	NT-W001	9.20E-51	3.05E-54	0.0%	100.0%
10	LA-IT-00-01	6.52E-51	1.39E-52	0.0%	100.0%
11	BT-T002	1.01E-53	1.13E-55	0.0%	100.0%
12	LA-TA-55-21	9.08E-54	1.91E-56	0.0%	100.0%
13	SA-W134	7.40E-54	9.61E-56	0.0%	100.0%
14	OR-W204	1.37E-54	1.04E-56	0.0%	100.0%
15	SA-W134M	9.60E-55	9.60E-56	0.0%	100.0%
16	LA-TA-55-30	7.08E-56	5.43E-60	0.0%	100.0%
17	IN-W216.98	0.00E+00	0.00E+00	0.0%	100.0%
18	WP-RF009.01	0.00E+00	0.00E+00	0.0%	100.0%
19	IN-ICP-002	0.00E+00	0.00E+00	0.0%	100.0%
20	RL-W513	0.00E+00	0.00E+00	0.0%	100.0%
21	WP-INW216.001-	0.00E+00	0.00E+00	0.0%	100.0%
22	IN-ICP-005	0.00E+00	0.00E+00	0.0%	100.0%
23	RL-W575	0.00E+00	0.00E+00	0.0%	100.0%
24	IN-ICP-003	0.00E+00	0.00E+00	0.0%	100.0%
25	WP-RF118.01	0.00E+00	0.00E+00	0.0%	100.0%
26	IN-BN-510	0.00E+00	0.00E+00	0.0%	100.0%
27	WP-INW216.001-	0.00E+00	0.00E+00	0.0%	100.0%
28	WP-RF005.02	0.00E+00	0.00E+00	0.0%	100.0%
29	IN-W220.114	0.00E+00	0.00E+00	0.0%	100.0%
30	WP-RF005.01	0.00E+00	0.00E+00	0.0%	100.0%
31	LL-T002	0.00E+00	0.00E+00	0.0%	100.0%
32	RF-MT-0299	0.00E+00	0.00E+00	0.0%	100.0%
33	LA-OS-00-01	0.00E+00	0.00E+00	0.0%	100.0%
34	IN-ICP-004	0.00E+00	0.00E+00	0.0%	100.0%
35	T001-221H-HET	0.00E+00	0.00E+00	0.0%	100.0%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	2.47E-47	N/A	100.0%	N/A

Table 4.6-8. WIPP CH-TRU Waste Streams by Curies (²⁴⁴Cm); Time 5,000
(Calendar Year = 7033)

Rank Order	Waste Stream ID	Curies (²⁴⁴ Cm)			
		²⁴⁴ Cm	²⁴⁴ Cm /drum	% of Total	Cum. %
1	LL-T005	7.72E-81	2.13E-84	54.9%	54.9%
2	OR-W202	5.42E-81	2.70E-84	38.6%	93.5%
3	OR-W201	2.60E-82	6.27E-85	1.8%	95.4%
4	LL-M001	2.15E-82	1.44E-84	1.5%	96.9%
5	OR-W203	1.88E-82	2.75E-85	1.3%	98.2%
6	LL-W034	1.73E-82	1.72E-84	1.2%	99.5%
7	LA-TA-48-01	5.97E-83	2.00E-83	0.4%	99.9%
8	SA-T001	1.09E-83	4.19E-85	0.1%	100.0%
9	NT-W001	5.24E-84	1.74E-87	0.0%	100.0%
10	LA-IT-00-01	3.71E-84	7.91E-86	0.0%	100.0%
11	BT-T002	5.77E-87	6.45E-89	0.0%	100.0%
12	LA-TA-55-21	5.17E-87	1.09E-89	0.0%	100.0%
13	SA-W134	4.22E-87	5.48E-89	0.0%	100.0%
14	OR-W204	7.82E-88	5.92E-90	0.0%	100.0%
15	SA-W134M	5.47E-88	5.47E-89	0.0%	100.0%
16	LA-TA-55-30	4.03E-89	3.09E-93	0.0%	100.0%
17	IN-W216.98	0.00E+00	0.00E+00	0.0%	100.0%
18	WP-RF009.01	0.00E+00	0.00E+00	0.0%	100.0%
19	IN-ICP-002	0.00E+00	0.00E+00	0.0%	100.0%
20	RL-W513	0.00E+00	0.00E+00	0.0%	100.0%
21	WP-INW216.001-	0.00E+00	0.00E+00	0.0%	100.0%
22	IN-ICP-005	0.00E+00	0.00E+00	0.0%	100.0%
23	RL-W575	0.00E+00	0.00E+00	0.0%	100.0%
24	IN-ICP-003	0.00E+00	0.00E+00	0.0%	100.0%
25	WP-RF118.01	0.00E+00	0.00E+00	0.0%	100.0%
26	IN-BN-510	0.00E+00	0.00E+00	0.0%	100.0%
27	WP-INW216.001-	0.00E+00	0.00E+00	0.0%	100.0%
28	WP-RF005.02	0.00E+00	0.00E+00	0.0%	100.0%
29	IN-W220.114	0.00E+00	0.00E+00	0.0%	100.0%
30	WP-RF005.01	0.00E+00	0.00E+00	0.0%	100.0%
31	LL-T002	0.00E+00	0.00E+00	0.0%	100.0%
32	RF-MT-0299	0.00E+00	0.00E+00	0.0%	100.0%
33	LA-OS-00-01	0.00E+00	0.00E+00	0.0%	100.0%
34	IN-ICP-004	0.00E+00	0.00E+00	0.0%	100.0%
35	T001-221H-HET	0.00E+00	0.00E+00	0.0%	100.0%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	1.41E-80	N/A	100.0%	N/A

Table 4.6-9. WIPP CH-TRU Waste Streams by Curies (²⁴⁴Cm); Time 7,500
(Calendar Year = 9533)

Rank Order	Waste Stream ID	Curies (²⁴⁴ Cm)			
		²⁴⁴ Cm	²⁴⁴ Cm /drum	% of Total	Cum. %
1	LL-T005	0.00E+00	0.00E+00	0.0%	0.0%
2	OR-W202	0.00E+00	0.00E+00	0.0%	0.0%
3	OR-W201	0.00E+00	0.00E+00	0.0%	0.0%
4	LL-M001	0.00E+00	0.00E+00	0.0%	0.0%
5	OR-W203	0.00E+00	0.00E+00	0.0%	0.0%
6	LL-W034	0.00E+00	0.00E+00	0.0%	0.0%
7	LA-TA-48-01	0.00E+00	0.00E+00	0.0%	0.0%
8	SA-T001	0.00E+00	0.00E+00	0.0%	0.0%
9	NT-W001	0.00E+00	0.00E+00	0.0%	0.0%
10	LA-IT-00-01	0.00E+00	0.00E+00	0.0%	0.0%
11	BT-T002	0.00E+00	0.00E+00	0.0%	0.0%
12	LA-TA-55-21	0.00E+00	0.00E+00	0.0%	0.0%
13	SA-W134	0.00E+00	0.00E+00	0.0%	0.0%
14	OR-W204	0.00E+00	0.00E+00	0.0%	0.0%
15	SA-W134M	0.00E+00	0.00E+00	0.0%	0.0%
16	LA-TA-55-30	0.00E+00	0.00E+00	0.0%	0.0%
17	IN-W216.98	0.00E+00	0.00E+00	0.0%	0.0%
18	WP-RF009.01	0.00E+00	0.00E+00	0.0%	0.0%
19	IN-ICP-002	0.00E+00	0.00E+00	0.0%	0.0%
20	RL-W513	0.00E+00	0.00E+00	0.0%	0.0%
21	WP-INW216.001-	0.00E+00	0.00E+00	0.0%	0.0%
22	IN-ICP-005	0.00E+00	0.00E+00	0.0%	0.0%
23	RL-W575	0.00E+00	0.00E+00	0.0%	0.0%
24	IN-ICP-003	0.00E+00	0.00E+00	0.0%	0.0%
25	WP-RF118.01	0.00E+00	0.00E+00	0.0%	0.0%
26	IN-BN-510	0.00E+00	0.00E+00	0.0%	0.0%
27	WP-INW216.001-	0.00E+00	0.00E+00	0.0%	0.0%
28	WP-RF005.02	0.00E+00	0.00E+00	0.0%	0.0%
29	IN-W220.114	0.00E+00	0.00E+00	0.0%	0.0%
30	WP-RF005.01	0.00E+00	0.00E+00	0.0%	0.0%
31	LL-T002	0.00E+00	0.00E+00	0.0%	0.0%
32	RF-MT-0299	0.00E+00	0.00E+00	0.0%	0.0%
33	LA-OS-00-01	0.00E+00	0.00E+00	0.0%	0.0%
34	IN-ICP-004	0.00E+00	0.00E+00	0.0%	0.0%
35	T001-221H-HET	0.00E+00	0.00E+00	0.0%	0.0%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	0.0%
	Sum =	0.00E+00	N/A	0.0%	N/A

Table 4.6-10. WIPP CH-TRU Waste Streams by Curies (²⁴⁴Cm); Time 10,000
(Calendar Year = 12033)

Rank Order	Waste Stream ID	Curies (²⁴⁴ Cm)			
		²⁴⁴ Cm	²⁴⁴ Cm /drum	% of Total	Cum. %
1	LL-T005	0.00E+00	0.00E+00	0.0%	0.0%
2	OR-W202	0.00E+00	0.00E+00	0.0%	0.0%
3	OR-W201	0.00E+00	0.00E+00	0.0%	0.0%
4	LL-M001	0.00E+00	0.00E+00	0.0%	0.0%
5	OR-W203	0.00E+00	0.00E+00	0.0%	0.0%
6	LL-W034	0.00E+00	0.00E+00	0.0%	0.0%
7	LA-TA-48-01	0.00E+00	0.00E+00	0.0%	0.0%
8	SA-T001	0.00E+00	0.00E+00	0.0%	0.0%
9	NT-W001	0.00E+00	0.00E+00	0.0%	0.0%
10	LA-IT-00-01	0.00E+00	0.00E+00	0.0%	0.0%
11	BT-T002	0.00E+00	0.00E+00	0.0%	0.0%
12	LA-TA-55-21	0.00E+00	0.00E+00	0.0%	0.0%
13	SA-W134	0.00E+00	0.00E+00	0.0%	0.0%
14	OR-W204	0.00E+00	0.00E+00	0.0%	0.0%
15	SA-W134M	0.00E+00	0.00E+00	0.0%	0.0%
16	LA-TA-55-30	0.00E+00	0.00E+00	0.0%	0.0%
17	IN-W216.98	0.00E+00	0.00E+00	0.0%	0.0%
18	WP-RF009.01	0.00E+00	0.00E+00	0.0%	0.0%
19	IN-ICP-002	0.00E+00	0.00E+00	0.0%	0.0%
20	RL-W513	0.00E+00	0.00E+00	0.0%	0.0%
21	WP-INW216.001-	0.00E+00	0.00E+00	0.0%	0.0%
22	IN-ICP-005	0.00E+00	0.00E+00	0.0%	0.0%
23	RL-W575	0.00E+00	0.00E+00	0.0%	0.0%
24	IN-ICP-003	0.00E+00	0.00E+00	0.0%	0.0%
25	WP-RF118.01	0.00E+00	0.00E+00	0.0%	0.0%
26	IN-BN-510	0.00E+00	0.00E+00	0.0%	0.0%
27	WP-INW216.001-	0.00E+00	0.00E+00	0.0%	0.0%
28	WP-RF005.02	0.00E+00	0.00E+00	0.0%	0.0%
29	IN-W220.114	0.00E+00	0.00E+00	0.0%	0.0%
30	WP-RF005.01	0.00E+00	0.00E+00	0.0%	0.0%
31	LL-T002	0.00E+00	0.00E+00	0.0%	0.0%
32	RF-MT-0299	0.00E+00	0.00E+00	0.0%	0.0%
33	LA-OS-00-01	0.00E+00	0.00E+00	0.0%	0.0%
34	IN-ICP-004	0.00E+00	0.00E+00	0.0%	0.0%
35	T001-221H-HET	0.00E+00	0.00E+00	0.0%	0.0%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	0.0%
	Sum =	0.00E+00	N/A	0.0%	N/A

4.7 CURIES ²³⁸Pu

²³⁸Pu, a radioactive isotope of Plutonium with a half-life of 87.1 years, is one of the key radionuclides that together contribute more than 99% of all radioactivity in the repository. ²³⁸Pu contributes both directly and indirectly through alpha decay by creating ²³⁴U (see Section 4.11). The isotope is abundant in the repository at closure (year 2033) as shown in Table 4.7-1 and although it diminishes over time, it remains relatively dominant 10,000 years (calendar year 12033) after closure (see Table 4.7-10).

The ²³⁸Pu curie values in Table 4.7-1 through Table 4.7-10 were sorted to illustrate the primary waste stream contributors to ²³⁸Pu activity over the entire population of waste. Each table identifies the 35 waste streams that offer the greatest contribution during each of the ten time intervals output by the code EPAUNI. All 690 waste streams and their total ²³⁸Pu curies can be found in the file EPU_CRA1BC_CH_ACTIVITY.DIA in the CRA library CRA1BC_EPU.

Over 75% of all contributing waste streams to ²³⁸Pu activity are SRS waste streams. Four of the top five contributing waste streams at closure are the SRS waste streams T001-221H-HET, W027-221F-HET, T001-221F-HET (heterogeneous debris including sludges, resins and large metal equipment) and T001-772F-HET (debris including booties, lab coats, and floor sweepings contaminated with solvents) (see Table 4.7-1). Over time, these waste streams continue to dominate the ²³⁸Pu contribution to radioactivity in the repository through time interval 10,000 years (year 12033) as shown in Table 4.7-10.

Table 4.7-1. WIPP CH-TRU Waste Streams by Curies (²³⁸Pu); Time 0
(Calendar Year = 2033)

Rank Order	Waste Stream ID	Curies (²³⁸ Pu)			
		²³⁸ Pu	²³⁸ Pu /drum	% of Total	Cum. %
1	T001-221H-HET	2.12E+05	1.13E+01	18.8%	18.8%
2	W027-221F-HET	1.45E+05	9.86E+00	12.8%	31.7%
3	T001-221F-HET	1.07E+05	1.14E+01	9.5%	41.2%
4	LA-OS-00-01	1.04E+05	4.32E+02	9.2%	50.4%
5	T001-772F-HET	8.00E+04	1.13E+01	7.1%	57.5%
6	RL-T107	7.57E+04	2.56E+00	6.7%	64.3%
7	W027-221H-HET	6.31E+04	9.83E+00	5.6%	69.9%
8	W027-773A-HET	5.14E+04	9.83E+00	4.6%	74.4%
9	W026-221F-HET	4.28E+04	1.13E+01	3.8%	78.2%
10	IN-BN-510	4.23E+04	4.43E-01	3.8%	82.0%
11	W027-999-HET	4.19E+04	9.83E+00	3.7%	85.7%
12	W027-772F-HET	3.45E+04	9.84E+00	3.1%	88.8%
13	W026-221H-HET	3.20E+04	1.13E+01	2.8%	91.6%
14	W027-235F-HET	1.90E+04	9.82E+00	1.7%	93.3%
15	T001-773A-HET	1.11E+04	1.14E+01	1.0%	94.3%
16	T001-235F-HET	1.01E+04	1.14E+01	0.9%	95.2%
17	RL-W513	8.62E+03	2.86E-01	0.8%	95.9%
18	OR-W202	4.60E+03	2.29E+00	0.4%	96.3%
19	IN-W177.156	4.09E+03	1.06E+00	0.4%	96.7%
20	IN-W179.158	4.05E+03	4.23E-01	0.4%	97.1%
21	LA-TA-55-49	2.59E+03	2.95E+01	0.2%	97.3%
22	IN-ICP-002	2.31E+03	3.85E-02	0.2%	97.5%
23	W026-773A-HET	2.21E+03	1.13E+01	0.2%	97.7%
24	IN-W174.154	1.91E+03	9.23E-01	0.2%	97.9%
25	WP-RF118.01	1.90E+03	3.11E-01	0.2%	98.0%
26	IN-W358.855	1.62E+03	1.01E+02	0.1%	98.2%
27	OR-W201	1.59E+03	3.84E+00	0.1%	98.3%
28	BCLCH-MT01	1.38E+03	5.49E+01	0.1%	98.4%
29	IN-ICP-005	1.34E+03	3.84E-02	0.1%	98.6%
30	T001-773A-CLAS	1.24E+03	1.14E+01	0.1%	98.7%
31	IN-W249.527	1.14E+03	3.56E+01	0.1%	98.8%
32	WP-RF009.01	1.00E+03	1.61E-01	0.1%	98.9%
33	IN-ICP-003	9.71E+02	3.84E-02	0.1%	98.9%
34	RL-W575	7.22E+02	5.29E-01	0.1%	99.0%
35	LA-TA-55-44	4.99E+02	4.51E-01	0.0%	99.1%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	1.13E+06	N/A	100.0%	N/A

Table 4.7-2. WIPP CH-TRU Waste Streams by Curies (²³⁸Pu); Time 100
(Calendar Year = 2133)

Rank Order	Waste Stream ID	Curies (²³⁸ Pu)			
		²³⁸ Pu	²³⁸ Pu /drum	% of Total	Cum. %
1	T001-221H-HET	9.62E+04	5.14E+00	18.8%	18.8%
2	W027-221F-HET	6.56E+04	4.47E+00	12.8%	31.7%
3	T001-221F-HET	4.86E+04	5.16E+00	9.5%	41.2%
4	LA-OS-00-01	4.72E+04	1.96E+02	9.2%	50.4%
5	T001-772F-HET	3.63E+04	5.15E+00	7.1%	57.6%
6	RL-T107	3.44E+04	1.16E+00	6.7%	64.3%
7	W027-221H-HET	2.86E+04	4.46E+00	5.6%	69.9%
8	W027-773A-HET	2.33E+04	4.46E+00	4.6%	74.5%
9	W026-221F-HET	1.94E+04	5.14E+00	3.8%	78.3%
10	IN-BN-510	1.92E+04	2.01E-01	3.8%	82.0%
11	W027-999-HET	1.90E+04	4.46E+00	3.7%	85.7%
12	W027-772F-HET	1.57E+04	4.47E+00	3.1%	88.8%
13	W026-221H-HET	1.45E+04	5.14E+00	2.8%	91.6%
14	W027-235F-HET	8.60E+03	4.46E+00	1.7%	93.3%
15	T001-773A-HET	5.04E+03	5.17E+00	1.0%	94.3%
16	T001-235F-HET	4.58E+03	5.16E+00	0.9%	95.2%
17	RL-W513	3.91E+03	1.30E-01	0.8%	96.0%
18	OR-W202	2.09E+03	1.04E+00	0.4%	96.4%
19	IN-W177.156	1.85E+03	4.81E-01	0.4%	96.7%
20	IN-W179.158	1.84E+03	1.92E-01	0.4%	97.1%
21	LA-TA-55-49	1.18E+03	1.34E+01	0.2%	97.3%
22	IN-ICP-002	1.05E+03	1.75E-02	0.2%	97.5%
23	W026-773A-HET	1.01E+03	5.15E+00	0.2%	97.7%
24	IN-W174.154	8.67E+02	4.19E-01	0.2%	97.9%
25	WP-RF118.01	8.64E+02	1.41E-01	0.2%	98.1%
26	IN-W358.855	7.37E+02	4.61E+01	0.1%	98.2%
27	OR-W201	7.23E+02	1.74E+00	0.1%	98.4%
28	BCLCH-MT01	6.27E+02	2.49E+01	0.1%	98.5%
29	IN-ICP-005	6.06E+02	1.74E-02	0.1%	98.6%
30	T001-773A-CLAS	5.61E+02	5.15E+00	0.1%	98.7%
31	IN-W249.527	5.18E+02	1.62E+01	0.1%	98.8%
32	WP-RF009.01	4.55E+02	7.29E-02	0.1%	98.9%
33	IN-ICP-003	4.41E+02	1.74E-02	0.1%	99.0%
34	RL-W575	3.28E+02	2.40E-01	0.1%	99.1%
35	LA-TA-55-44	2.27E+02	2.05E-01	0.0%	99.1%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	5.11E+05	N/A	100.0%	N/A

Table 4.7-3. WIPP CH-TRU Waste Streams by Curies (²³⁸Pu); Time 125
(Calendar Year = 2158)

Rank Order	Waste Stream ID	Curies (²³⁸ Pu)			
		²³⁸ Pu	²³⁸ Pu /drum	% of Total	Cum. %
1	T001-221H-HET	7.90E+04	4.22E+00	18.8%	18.8%
2	W027-221F-HET	5.38E+04	3.67E+00	12.8%	31.7%
3	T001-221F-HET	3.99E+04	4.23E+00	9.5%	41.2%
4	LA-OS-00-01	3.88E+04	1.61E+02	9.2%	50.4%
5	T001-772F-HET	2.98E+04	4.23E+00	7.1%	57.5%
6	RL-T107	2.82E+04	9.54E-01	6.7%	64.3%
7	W027-221H-HET	2.35E+04	3.66E+00	5.6%	69.9%
8	W027-773A-HET	1.92E+04	3.66E+00	4.6%	74.4%
9	W026-221F-HET	1.59E+04	4.22E+00	3.8%	78.2%
10	IN-BN-510	1.58E+04	1.65E-01	3.8%	82.0%
11	W027-999-HET	1.56E+04	3.66E+00	3.7%	85.7%
12	W027-772F-HET	1.29E+04	3.67E+00	3.1%	88.8%
13	W026-221H-HET	1.19E+04	4.22E+00	2.8%	91.6%
14	W027-235F-HET	7.06E+03	3.66E+00	1.7%	93.3%
15	T001-773A-HET	4.14E+03	4.24E+00	1.0%	94.3%
16	T001-235F-HET	3.76E+03	4.23E+00	0.9%	95.2%
17	RL-W513	3.21E+03	1.07E-01	0.8%	96.0%
18	OR-W202	1.71E+03	8.54E-01	0.4%	96.4%
19	IN-W177.156	1.52E+03	3.95E-01	0.4%	96.7%
20	IN-W179.158	1.51E+03	1.58E-01	0.4%	97.1%
21	LA-TA-55-49	9.66E+02	1.10E+01	0.2%	97.3%
22	IN-ICP-002	8.59E+02	1.43E-02	0.2%	97.5%
23	W026-773A-HET	8.25E+02	4.22E+00	0.2%	97.7%
24	IN-W174.154	7.12E+02	3.44E-01	0.2%	97.9%
25	WP-RF118.01	7.09E+02	1.16E-01	0.2%	98.1%
26	IN-W358.855	6.05E+02	3.78E+01	0.1%	98.2%
27	OR-W201	5.93E+02	1.43E+00	0.1%	98.4%
28	BCLCH-MT01	5.15E+02	2.05E+01	0.1%	98.5%
29	IN-ICP-005	4.98E+02	1.43E-02	0.1%	98.6%
30	T001-773A-CLAS	4.60E+02	4.23E+00	0.1%	98.7%
31	IN-W249.527	4.25E+02	1.33E+01	0.1%	98.8%
32	WP-RF009.01	3.73E+02	5.98E-02	0.1%	98.9%
33	IN-ICP-003	3.62E+02	1.43E-02	0.1%	99.0%
34	RL-W575	2.69E+02	1.97E-01	0.1%	99.0%
35	LA-TA-55-44	1.86E+02	1.68E-01	0.0%	99.1%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	4.19E+05	N/A	100.0%	N/A

Table 4.7-4. WIPP CH-TRU Waste Streams by Curies (²³⁸Pu); Time 175
(Calendar Year = 2208)

Rank Order	Waste Stream ID	Curies (²³⁸ Pu)			
		²³⁸ Pu	²³⁸ Pu /drum	% of Total	Cum. %
1	T001-221H-HET	5.32E+04	2.84E+00	18.8%	18.8%
2	W027-221F-HET	3.63E+04	2.47E+00	12.8%	31.7%
3	T001-221F-HET	2.69E+04	2.85E+00	9.5%	41.2%
4	LA-OS-00-01	2.61E+04	1.08E+02	9.2%	50.4%
5	T001-772F-HET	2.01E+04	2.85E+00	7.1%	57.5%
6	RL-T107	1.90E+04	6.43E-01	6.7%	64.3%
7	W027-221H-HET	1.58E+04	2.47E+00	5.6%	69.9%
8	W027-773A-HET	1.29E+04	2.47E+00	4.6%	74.4%
9	W026-221F-HET	1.07E+04	2.85E+00	3.8%	78.2%
10	IN-BN-510	1.06E+04	1.11E-01	3.8%	82.0%
11	W027-999-HET	1.05E+04	2.47E+00	3.7%	85.7%
12	W027-772F-HET	8.65E+03	2.47E+00	3.1%	88.8%
13	W026-221H-HET	8.03E+03	2.85E+00	2.8%	91.6%
14	W027-235F-HET	4.76E+03	2.46E+00	1.7%	93.3%
15	T001-773A-HET	2.79E+03	2.86E+00	1.0%	94.3%
16	T001-235F-HET	2.53E+03	2.85E+00	0.9%	95.2%
17	RL-W513	2.16E+03	7.19E-02	0.8%	96.0%
18	OR-W202	1.15E+03	5.75E-01	0.4%	96.4%
19	IN-W177.156	1.03E+03	2.66E-01	0.4%	96.7%
20	IN-W179.158	1.02E+03	1.06E-01	0.4%	97.1%
21	LA-TA-55-49	6.51E+02	7.41E+00	0.2%	97.3%
22	IN-ICP-002	5.79E+02	9.66E-03	0.2%	97.5%
23	W026-773A-HET	5.56E+02	2.84E+00	0.2%	97.7%
24	IN-W174.154	4.80E+02	2.32E-01	0.2%	97.9%
25	WP-RF118.01	4.78E+02	7.81E-02	0.2%	98.1%
26	IN-W358.855	4.07E+02	2.55E+01	0.1%	98.2%
27	OR-W201	4.00E+02	9.65E-01	0.1%	98.3%
28	BCLCH-MT01	3.47E+02	1.38E+01	0.1%	98.5%
29	IN-ICP-005	3.35E+02	9.64E-03	0.1%	98.6%
30	T001-773A-CLAS	3.10E+02	2.85E+00	0.1%	98.7%
31	IN-W249.527	2.87E+02	8.93E+00	0.1%	98.8%
32	WP-RF009.01	2.51E+02	4.03E-02	0.1%	98.9%
33	IN-ICP-003	2.44E+02	9.64E-03	0.1%	99.0%
34	RL-W575	1.81E+02	1.33E-01	0.1%	99.0%
35	LA-TA-55-44	1.25E+02	1.13E-01	0.0%	99.1%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	2.83E+05	N/A	100.0%	N/A

Table 4.7-5. WIPP CH-TRU Waste Streams by Curies (²³⁸Pu); Time 350
(Calendar Year = 2383)

Rank Order	Waste Stream ID	Curies (²³⁸ Pu)			
		²³⁸ Pu	²³⁸ Pu /drum	% of Total	Cum. %
1	T001-221H-HET	1.34E+04	7.14E-01	18.8%	18.8%
2	W027-221F-HET	9.10E+03	6.21E-01	12.8%	31.7%
3	T001-221F-HET	6.75E+03	7.16E-01	9.5%	41.2%
4	LA-OS-00-01	6.56E+03	2.72E+01	9.2%	50.4%
5	T001-772F-HET	5.04E+03	7.14E-01	7.1%	57.6%
6	RL-T107	4.77E+03	1.61E-01	6.7%	64.3%
7	W027-221H-HET	3.97E+03	6.19E-01	5.6%	69.9%
8	W027-773A-HET	3.24E+03	6.19E-01	4.6%	74.4%
9	W026-221F-HET	2.70E+03	7.14E-01	3.8%	78.2%
10	IN-BN-510	2.67E+03	2.79E-02	3.8%	82.0%
11	W027-999-HET	2.64E+03	6.19E-01	3.7%	85.7%
12	W027-772F-HET	2.17E+03	6.20E-01	3.1%	88.8%
13	W026-221H-HET	2.02E+03	7.14E-01	2.8%	91.6%
14	W027-235F-HET	1.19E+03	6.19E-01	1.7%	93.3%
15	T001-773A-HET	7.00E+02	7.17E-01	1.0%	94.3%
16	T001-235F-HET	6.36E+02	7.16E-01	0.9%	95.2%
17	RL-W513	5.43E+02	1.80E-02	0.8%	96.0%
18	OR-W202	2.90E+02	1.44E-01	0.4%	96.4%
19	IN-W177.156	2.57E+02	6.67E-02	0.4%	96.7%
20	IN-W179.158	2.55E+02	2.66E-02	0.4%	97.1%
21	LA-TA-55-49	1.63E+02	1.86E+00	0.2%	97.3%
22	IN-ICP-002	1.45E+02	2.42E-03	0.2%	97.5%
23	W026-773A-HET	1.39E+02	7.14E-01	0.2%	97.7%
24	IN-W174.154	1.20E+02	5.81E-02	0.2%	97.9%
25	WP-RF118.01	1.20E+02	1.96E-02	0.2%	98.1%
26	IN-W358.855	1.02E+02	6.39E+00	0.1%	98.2%
27	OR-W201	1.00E+02	2.42E-01	0.1%	98.4%
28	BCLCH-MT01	8.71E+01	3.46E+00	0.1%	98.5%
29	IN-ICP-005	8.41E+01	2.42E-03	0.1%	98.6%
30	T001-773A-CLAS	7.78E+01	7.15E-01	0.1%	98.7%
31	IN-W249.527	7.19E+01	2.24E+00	0.1%	98.8%
32	WP-RF009.01	6.31E+01	1.01E-02	0.1%	98.9%
33	IN-ICP-003	6.12E+01	2.42E-03	0.1%	99.0%
34	RL-W575	4.55E+01	3.33E-02	0.1%	99.0%
35	LA-TA-55-44	3.15E+01	2.84E-02	0.0%	99.1%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	7.09E+04	N/A	100.0%	N/A

Table 4.7-6. WIPP CH-TRU Waste Streams by Curies (²³⁸Pu); Time 1,000
(Calendar Year = 3033)

Rank Order	Waste Stream ID	Curies (²³⁸ Pu)			
		²³⁸ Pu	²³⁸ Pu /drum	% of Total	Cum. %
1	T001-221H-HET	7.87E+01	4.20E-03	18.8%	18.8%
2	W027-221F-HET	5.36E+01	3.66E-03	12.8%	31.7%
3	T001-221F-HET	3.98E+01	4.22E-03	9.5%	41.2%
4	LA-OS-00-01	3.86E+01	1.60E-01	9.2%	50.4%
5	T001-772F-HET	2.97E+01	4.21E-03	7.1%	57.6%
6	RL-T107	2.81E+01	9.50E-04	6.7%	64.3%
7	W027-221H-HET	2.34E+01	3.65E-03	5.6%	69.9%
8	W027-773A-HET	1.91E+01	3.65E-03	4.6%	74.5%
9	W026-221F-HET	1.59E+01	4.20E-03	3.8%	78.3%
10	IN-BN-510	1.57E+01	1.64E-04	3.8%	82.0%
11	W027-999-HET	1.55E+01	3.65E-03	3.7%	85.7%
12	W027-772F-HET	1.28E+01	3.65E-03	3.1%	88.8%
13	W026-221H-HET	1.19E+01	4.21E-03	2.8%	91.6%
14	W027-235F-HET	7.03E+00	3.64E-03	1.7%	93.3%
15	T001-773A-HET	4.12E+00	4.22E-03	1.0%	94.3%
16	T001-235F-HET	3.75E+00	4.22E-03	0.9%	95.2%
17	RL-W513	3.20E+00	1.06E-04	0.8%	96.0%
18	OR-W202	1.71E+00	8.50E-04	0.4%	96.4%
19	IN-W177.156	1.52E+00	3.93E-04	0.4%	96.7%
20	IN-W179.158	1.50E+00	1.57E-04	0.4%	97.1%
21	LA-TA-55-49	9.62E-01	1.09E-02	0.2%	97.3%
22	IN-ICP-002	8.56E-01	1.43E-05	0.2%	97.5%
23	W026-773A-HET	8.21E-01	4.20E-03	0.2%	97.7%
24	IN-W174.154	7.09E-01	3.42E-04	0.2%	97.9%
25	WP-RF118.01	7.06E-01	1.15E-04	0.2%	98.1%
26	IN-W358.855	6.02E-01	3.76E-02	0.1%	98.2%
27	OR-W201	5.91E-01	1.43E-03	0.1%	98.4%
28	BCLCH-MT01	5.13E-01	2.04E-02	0.1%	98.5%
29	IN-ICP-005	4.96E-01	1.43E-05	0.1%	98.6%
30	T001-773A-CLAS	4.58E-01	4.21E-03	0.1%	98.7%
31	IN-W249.527	4.24E-01	1.32E-02	0.1%	98.8%
32	WP-RF009.01	3.72E-01	5.96E-05	0.1%	98.9%
33	IN-ICP-003	3.60E-01	1.42E-05	0.1%	99.0%
34	RL-W575	2.68E-01	1.96E-04	0.1%	99.1%
35	LA-TA-55-44	1.85E-01	1.67E-04	0.0%	99.1%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	4.18E+02	N/A	100.0%	N/A

Table 4.7-7. WIPP CH-TRU Waste Streams by Curies (²³⁸Pu); Time 3,000
(Calendar Year = 5033)

Rank Order	Waste Stream ID	Curies (²³⁸ Pu)			
		²³⁸ Pu	²³⁸ Pu /drum	% of Total	Cum. %
1	T001-221H-HET	1.08E-05	5.78E-10	18.8%	18.8%
2	W027-221F-HET	7.37E-06	5.03E-10	12.8%	31.7%
3	T001-221F-HET	5.47E-06	5.80E-10	9.5%	41.2%
4	LA-OS-00-01	5.31E-06	2.20E-08	9.2%	50.4%
5	T001-772F-HET	4.08E-06	5.79E-10	7.1%	57.5%
6	RL-T107	3.87E-06	1.31E-10	6.7%	64.3%
7	W027-221H-HET	3.22E-06	5.02E-10	5.6%	69.9%
8	W027-773A-HET	2.63E-06	5.02E-10	4.6%	74.4%
9	W026-221F-HET	2.19E-06	5.79E-10	3.8%	78.2%
10	IN-BN-510	2.16E-06	2.26E-11	3.8%	82.0%
11	W027-999-HET	2.14E-06	5.02E-10	3.7%	85.7%
12	W027-772F-HET	1.76E-06	5.02E-10	3.1%	88.8%
13	W026-221H-HET	1.63E-06	5.79E-10	2.8%	91.6%
14	W027-235F-HET	9.67E-07	5.01E-10	1.7%	93.3%
15	T001-773A-HET	5.67E-07	5.81E-10	1.0%	94.3%
16	T001-235F-HET	5.15E-07	5.80E-10	0.9%	95.2%
17	RL-W513	4.40E-07	1.46E-11	0.8%	96.0%
18	OR-W202	2.35E-07	1.17E-10	0.4%	96.4%
19	IN-W177.156	2.09E-07	5.41E-11	0.4%	96.7%
20	IN-W179.158	2.07E-07	2.16E-11	0.4%	97.1%
21	LA-TA-55-49	1.32E-07	1.51E-09	0.2%	97.3%
22	IN-ICP-002	1.18E-07	1.97E-12	0.2%	97.5%
23	W026-773A-HET	1.13E-07	5.79E-10	0.2%	97.7%
24	IN-W174.154	9.75E-08	4.71E-11	0.2%	97.9%
25	WP-RF118.01	9.71E-08	1.59E-11	0.2%	98.1%
26	IN-W358.855	8.29E-08	5.18E-09	0.1%	98.2%
27	OR-W201	8.13E-08	1.96E-10	0.1%	98.3%
28	BCLCH-MT01	7.06E-08	2.80E-09	0.1%	98.5%
29	IN-ICP-005	6.82E-08	1.96E-12	0.1%	98.6%
30	T001-773A-CLAS	6.30E-08	5.80E-10	0.1%	98.7%
31	IN-W249.527	5.83E-08	1.82E-09	0.1%	98.8%
32	WP-RF009.01	5.11E-08	8.20E-12	0.1%	98.9%
33	IN-ICP-003	4.96E-08	1.96E-12	0.1%	99.0%
34	RL-W575	3.68E-08	2.70E-11	0.1%	99.0%
35	LA-TA-55-44	2.55E-08	2.30E-11	0.0%	99.1%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	5.75E-05	N/A	100.0%	N/A

Table 4.7-8. WIPP CH-TRU Waste Streams by Curies (²³⁸Pu); Time 5,000
(Calendar Year = 7033)

Rank Order	Waste Stream ID	Curies (²³⁸ Pu)			
		²³⁸ Pu	²³⁸ Pu /drum	% of Total	Cum. %
1	T001-221H-HET	1.49E-12	7.95E-17	18.8%	18.8%
2	W027-221F-HET	1.02E-12	6.93E-17	12.8%	31.7%
3	T001-221F-HET	7.53E-13	7.98E-17	9.5%	41.2%
4	LA-OS-00-01	7.31E-13	3.03E-15	9.2%	50.4%
5	T001-772F-HET	5.62E-13	7.97E-17	7.1%	57.5%
6	RL-T107	5.32E-13	1.80E-17	6.7%	64.3%
7	W027-221H-HET	4.43E-13	6.91E-17	5.6%	69.9%
8	W027-773A-HET	3.61E-13	6.91E-17	4.6%	74.4%
9	W026-221F-HET	3.01E-13	7.96E-17	3.8%	78.2%
10	IN-BN-510	2.97E-13	3.11E-18	3.8%	82.0%
11	W027-999-HET	2.94E-13	6.90E-17	3.7%	85.7%
12	W027-772F-HET	2.42E-13	6.91E-17	3.1%	88.8%
13	W026-221H-HET	2.25E-13	7.96E-17	2.8%	91.6%
14	W027-235F-HET	1.33E-13	6.90E-17	1.7%	93.3%
15	T001-773A-HET	7.80E-14	7.99E-17	1.0%	94.3%
16	T001-235F-HET	7.09E-14	7.99E-17	0.9%	95.2%
17	RL-W513	6.06E-14	2.01E-18	0.8%	96.0%
18	OR-W202	3.23E-14	1.61E-17	0.4%	96.4%
19	IN-W177.156	2.87E-14	7.44E-18	0.4%	96.7%
20	IN-W179.158	2.85E-14	2.97E-18	0.4%	97.1%
21	LA-TA-55-49	1.82E-14	2.07E-16	0.2%	97.3%
22	IN-ICP-002	1.62E-14	2.70E-19	0.2%	97.5%
23	W026-773A-HET	1.56E-14	7.96E-17	0.2%	97.7%
24	IN-W174.154	1.34E-14	6.48E-18	0.2%	97.9%
25	WP-RF118.01	1.34E-14	2.19E-18	0.2%	98.1%
26	IN-W358.855	1.14E-14	7.13E-16	0.1%	98.2%
27	OR-W201	1.12E-14	2.70E-17	0.1%	98.4%
28	BCLCH-MT01	9.71E-15	3.86E-16	0.1%	98.5%
29	IN-ICP-005	9.38E-15	2.70E-19	0.1%	98.6%
30	T001-773A-CLAS	8.68E-15	7.98E-17	0.1%	98.7%
31	IN-W249.527	8.02E-15	2.50E-16	0.1%	98.8%
32	WP-RF009.01	7.04E-15	1.13E-18	0.1%	98.9%
33	IN-ICP-003	6.82E-15	2.70E-19	0.1%	99.0%
34	RL-W575	5.07E-15	3.71E-18	0.1%	99.0%
35	LA-TA-55-44	3.51E-15	3.17E-18	0.0%	99.1%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	7.91E-12	N/A	100.0%	N/A

Table 4.7-9. WIPP CH-TRU Waste Streams by Curies (²³⁸Pu); Time 7,500
(Calendar Year = 9533)

Rank Order	Waste Stream ID	Curies (²³⁸ Pu)			
		²³⁸ Pu	²³⁸ Pu /drum	% of Total	Cum. %
1	T001-221H-HET	3.95E-21	2.11E-25	18.8%	18.8%
2	W027-221F-HET	2.69E-21	1.84E-25	12.8%	31.7%
3	T001-221F-HET	2.00E-21	2.12E-25	9.5%	41.2%
4	LA-OS-00-01	1.94E-21	8.04E-24	9.2%	50.4%
5	T001-772F-HET	1.49E-21	2.11E-25	7.1%	57.5%
6	RL-T107	1.41E-21	4.77E-26	6.7%	64.3%
7	W027-221H-HET	1.17E-21	1.83E-25	5.6%	69.9%
8	W027-773A-HET	9.57E-22	1.83E-25	4.6%	74.4%
9	W026-221F-HET	7.97E-22	2.11E-25	3.8%	78.2%
10	IN-BN-510	7.88E-22	8.26E-27	3.8%	82.0%
11	W027-999-HET	7.79E-22	1.83E-25	3.7%	85.7%
12	W027-772F-HET	6.42E-22	1.83E-25	3.1%	88.8%
13	W026-221H-HET	5.96E-22	2.11E-25	2.8%	91.6%
14	W027-235F-HET	3.53E-22	1.83E-25	1.7%	93.3%
15	T001-773A-HET	2.07E-22	2.12E-25	1.0%	94.3%
16	T001-235F-HET	1.88E-22	2.12E-25	0.9%	95.2%
17	RL-W513	1.61E-22	5.33E-27	0.8%	96.0%
18	OR-W202	8.56E-23	4.27E-26	0.4%	96.4%
19	IN-W177.156	7.61E-23	1.97E-26	0.4%	96.7%
20	IN-W179.158	7.55E-23	7.88E-27	0.4%	97.1%
21	LA-TA-55-49	4.83E-23	5.50E-25	0.2%	97.3%
22	IN-ICP-002	4.30E-23	7.16E-28	0.2%	97.5%
23	W026-773A-HET	4.12E-23	2.11E-25	0.2%	97.7%
24	IN-W174.154	3.56E-23	1.72E-26	0.2%	97.9%
25	WP-RF118.01	3.54E-23	5.79E-27	0.2%	98.1%
26	IN-W358.855	3.02E-23	1.89E-24	0.1%	98.2%
27	OR-W201	2.96E-23	7.16E-26	0.1%	98.3%
28	BCLCH-MT01	2.57E-23	1.02E-24	0.1%	98.5%
29	IN-ICP-005	2.49E-23	7.15E-28	0.1%	98.6%
30	T001-773A-CLAS	2.30E-23	3.83E-25	0.1%	98.7%
31	IN-W249.527	2.13E-23	6.63E-25	0.1%	98.8%
32	WP-RF009.01	1.87E-23	2.99E-27	0.1%	98.9%
33	IN-ICP-003	1.81E-23	7.15E-28	0.1%	99.0%
34	RL-W575	1.34E-23	9.84E-27	0.1%	99.0%
35	LA-TA-55-44	9.30E-24	8.39E-27	0.0%	99.1%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	2.10E-20	N/A	100.0%	N/A

Table 4.7-10. WIPP CH-TRU Waste Streams by Curies (²³⁸Pu); Time 10,000
(Calendar Year = 12033)

Rank Order	Waste Stream ID	Curies (²³⁸ Pu)			
		²³⁸ Pu	²³⁸ Pu /drum	% of Total	Cum. %
1	T001-221H-HET	1.05E-29	5.59E-34	18.8%	18.8%
2	W027-221F-HET	7.13E-30	4.86E-34	12.8%	31.7%
3	T001-221F-HET	5.29E-30	5.61E-34	9.5%	41.2%
4	LA-OS-00-01	5.14E-30	2.13E-32	9.2%	50.4%
5	T001-772F-HET	3.95E-30	5.60E-34	7.1%	57.5%
6	RL-T107	3.74E-30	1.26E-34	6.7%	64.3%
7	W027-221H-HET	3.11E-30	4.85E-34	5.6%	69.9%
8	W027-773A-HET	2.54E-30	4.85E-34	4.6%	74.4%
9	W026-221F-HET	2.11E-30	5.59E-34	3.8%	78.2%
10	IN-BN-510	2.09E-30	2.19E-35	3.8%	82.0%
11	W027-999-HET	2.07E-30	4.85E-34	3.7%	85.7%
12	W027-772F-HET	1.70E-30	4.86E-34	3.1%	88.8%
13	W026-221H-HET	1.58E-30	5.59E-34	2.8%	91.6%
14	W027-235F-HET	9.35E-31	4.85E-34	1.7%	93.3%
15	T001-773A-HET	5.48E-31	5.62E-34	1.0%	94.3%
16	T001-235F-HET	4.98E-31	5.61E-34	0.9%	95.2%
17	RL-W513	4.25E-31	1.41E-35	0.8%	96.0%
18	OR-W202	2.27E-31	1.13E-34	0.4%	96.4%
19	IN-W177.156	2.02E-31	4.52E-33	0.4%	96.7%
20	IN-W179.158	2.00E-31	2.09E-35	0.4%	97.1%
21	LA-TA-55-49	1.28E-31	1.46E-33	0.2%	97.3%
22	IN-ICP-002	1.14E-31	1.90E-36	0.2%	97.5%
23	W026-773A-HET	1.09E-31	5.59E-34	0.2%	97.7%
24	IN-W174.154	9.43E-32	4.55E-35	0.2%	97.9%
25	WP-RF118.01	9.39E-32	1.54E-35	0.2%	98.1%
26	IN-W358.855	8.01E-32	5.01E-33	0.1%	98.2%
27	OR-W201	7.86E-32	1.90E-34	0.1%	98.3%
28	BCLCH-MT01	6.82E-32	2.71E-33	0.1%	98.5%
29	IN-ICP-005	6.59E-32	1.90E-36	0.1%	98.6%
30	T001-773A-CLAS	6.09E-32	5.60E-34	0.1%	98.7%
31	IN-W249.527	5.63E-32	1.76E-33	0.1%	98.8%
32	WP-RF009.01	4.94E-32	7.92E-36	0.1%	98.9%
33	IN-ICP-003	4.79E-32	1.90E-36	0.1%	99.0%
34	RL-W575	3.56E-32	2.61E-35	0.1%	99.0%
35	LA-TA-55-44	2.47E-32	2.22E-35	0.0%	99.1%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	5.56E-29	N/A	100.0%	N/A

4.8 CURIES ²³⁹Pu

²³⁹Pu, a radioactive isotope of Plutonium with a half-life of 24,110 years, is one of the key radionuclides that together contribute more than 99% of all radioactivity in the repository. ²³⁹Pu is abundant in the repository at closure (year 2033) as shown in Table 4.8-1 and does not diminish much over time as it remains dominant 10,000 years (calendar year 12033) after closure (see Table 4.8-10).

The ²³⁹Pu curie values in Table 4.8-1 through Table 4.8-10 were sorted to illustrate the primary waste stream contributors to ²³⁹Pu activity over the entire population of waste. Each table identifies the 35 waste streams that offer the greatest contribution during each of the ten time intervals output by the code EPAUNI. All 690 waste streams and their total ²³⁹Pu curies can be found in the file EPU_CRA1BC_CH_ACTIVITY.DIA in the CRA library CRA1BC_EPU.

At closure, 35 of 690 waste streams contribute over 82% of all ²³⁹Pu activity (see Table 4.8-1). Since the isotope has no significant parent nuclide(s) that produce it in the repository, its waste stream contributions remain relatively constant through time interval 10,000 years (see Table 4.8-10).

Table 4.8-1. WIPP CH-TRU Waste Streams by Curies (²³⁹Pu); Time 0
(Calendar Year = 2033)

Rank Order	Waste Stream ID	Curies (²³⁹ Pu)			
		²³⁹ Pu	²³⁹ Pu /drum	% of Total	Cum. %
1	WP-RF118.01	5.14E+04	8.40E+00	8.9%	8.9%
2	WP-RF009.01	5.09E+04	8.15E+00	8.8%	17.7%
3	T001-221H-HET	4.99E+04	2.66E+00	8.6%	26.3%
4	W027-221F-HET	3.90E+04	2.66E+00	6.7%	33.1%
5	IN-BN-510	2.94E+04	3.08E-01	5.1%	38.2%
6	T001-221F-HET	2.51E+04	2.66E+00	4.3%	42.5%
7	T001-772F-HET	1.88E+04	2.66E+00	3.3%	45.8%
8	W027-221H-HET	1.71E+04	2.66E+00	3.0%	48.7%
9	RL-T107	1.63E+04	5.51E-01	2.8%	51.6%
10	IN-ICP-002	1.45E+04	2.42E-01	2.5%	54.1%
11	W027-773A-HET	1.39E+04	2.66E+00	2.4%	56.5%
12	RL-W513	1.36E+04	4.52E-01	2.4%	58.8%
13	W027-999-HET	1.13E+04	2.65E+00	2.0%	60.8%
14	W026-221F-HET	1.01E+04	2.67E+00	1.7%	62.5%
15	W027-772F-HET	9.32E+03	2.66E+00	1.6%	64.1%
16	WP-RF003.01	8.82E+03	7.91E+00	1.5%	65.7%
17	IN-ICP-005	8.38E+03	2.41E-01	1.5%	67.1%
18	WP-RF006.01	7.93E+03	7.48E+00	1.4%	68.5%
19	W026-221H-HET	7.51E+03	2.66E+00	1.3%	69.8%
20	RF-MT420P	6.34E+03	8.21E+00	1.1%	70.9%
21	IN-ICP-003	6.09E+03	2.41E-01	1.1%	71.9%
22	IN-W216.98	5.99E+03	9.79E-02	1.0%	73.0%
23	RF-MT0091	5.92E+03	8.27E+00	1.0%	74.0%
24	W027-235F-HET	5.14E+03	2.66E+00	0.9%	74.9%
25	WP-RF005.01	4.67E+03	8.06E+00	0.8%	75.7%
26	RF-TT0802	4.41E+03	1.63E+01	0.8%	76.5%
27	RL-T137	4.31E+03	5.91E+00	0.7%	77.2%
28	RL-T140	4.17E+03	6.28E+00	0.7%	77.9%
29	RF-MT-0299	4.15E+03	2.78E+01	0.7%	78.7%
30	LL-T002	3.75E+03	5.17E-01	0.6%	79.3%
31	RF-MT532C	3.63E+03	3.05E+00	0.6%	79.9%
32	RF-TT0338	3.45E+03	5.02E+00	0.6%	80.5%
33	NT-W001	2.84E+03	9.42E-01	0.5%	81.0%
34	RL-T132	2.81E+03	2.04E+01	0.5%	81.5%
35	WP-RF005.02	2.79E+03	7.41E+00	0.5%	82.0%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	5.77E+05	N/A	100.0%	N/A

Table 4.8-2. WIPP CH-TRU Waste Streams by Curies (²³⁹Pu); Time 100
(Calendar Year = 2133)

Rank Order	Waste Stream ID	Curies (²³⁹ Pu)			
		²³⁹ Pu	²³⁹ Pu /drum	% of Total	Cum. %
1	WP-RF118.01	5.12E+04	8.37E+00	8.9%	8.9%
2	WP-RF009.01	5.07E+04	8.13E+00	8.8%	17.7%
3	T001-221H-HET	4.97E+04	2.65E+00	8.6%	26.3%
4	W027-221F-HET	3.89E+04	2.65E+00	6.7%	33.1%
5	IN-BN-510	2.93E+04	3.07E-01	5.1%	38.2%
6	T001-221F-HET	2.50E+04	2.65E+00	4.3%	42.5%
7	T001-772F-HET	1.87E+04	2.66E+00	3.3%	45.8%
8	W027-221H-HET	1.70E+04	2.66E+00	3.0%	48.7%
9	RL-T107	1.62E+04	5.49E-01	2.8%	51.6%
10	IN-ICP-002	1.44E+04	2.41E-01	2.5%	54.1%
11	W027-773A-HET	1.39E+04	2.65E+00	2.4%	56.5%
12	RL-W513	1.36E+04	4.50E-01	2.4%	58.8%
13	W027-999-HET	1.13E+04	2.64E+00	2.0%	60.8%
14	W026-221F-HET	1.01E+04	2.66E+00	1.7%	62.5%
15	W027-772F-HET	9.30E+03	2.65E+00	1.6%	64.1%
16	WP-RF003.01	8.80E+03	7.88E+00	1.5%	65.7%
17	IN-ICP-005	8.36E+03	2.40E-01	1.5%	67.1%
18	WP-RF006.01	7.91E+03	7.45E+00	1.4%	68.5%
19	W026-221H-HET	7.49E+03	2.65E+00	1.3%	69.8%
20	RF-MT420P	6.33E+03	8.18E+00	1.1%	70.9%
21	IN-ICP-003	6.08E+03	2.40E-01	1.1%	72.0%
22	IN-W216.98	5.98E+03	9.77E-02	1.0%	73.0%
23	RF-MT0091	5.90E+03	8.25E+00	1.0%	74.0%
24	W027-235F-HET	5.12E+03	2.65E+00	0.9%	74.9%
25	WP-RF005.01	4.65E+03	8.04E+00	0.8%	75.7%
26	RF-TT0802	4.39E+03	1.62E+01	0.8%	76.5%
27	RL-T137	4.29E+03	5.90E+00	0.7%	77.2%
28	RL-T140	4.15E+03	6.26E+00	0.7%	77.9%
29	RF-MT-0299	4.13E+03	2.77E+01	0.7%	78.7%
30	LL-T002	3.74E+03	5.16E-01	0.6%	79.3%
31	RF-MT532C	3.62E+03	3.04E+00	0.6%	79.9%
32	RF-TT0338	3.44E+03	5.01E+00	0.6%	80.5%
33	NT-W001	2.83E+03	9.40E-01	0.5%	81.0%
34	RL-T132	2.80E+03	2.03E+01	0.5%	81.5%
35	WP-RF005.02	2.78E+03	7.39E+00	0.5%	82.0%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	5.76E+05	N/A	100.0%	N/A

Table 4.8-3. WIPP CH-TRU Waste Streams by Curies (²³⁹Pu); Time 125
(Calendar Year = 2158)

Rank Order	Waste Stream ID	Curies (²³⁹ Pu)			
		²³⁹ Pu	²³⁹ Pu /drum	% of Total	Cum. %
1	WP-RF118.01	7.09E+02	8.37E+00	8.9%	8.9%
2	WP-RF009.01	3.73E+02	8.12E+00	8.8%	17.7%
3	T001-221H-HET	7.90E+04	2.65E+00	8.6%	26.3%
4	W027-221F-HET	5.38E+04	2.65E+00	6.7%	33.1%
5	IN-BN-510	1.58E+04	3.07E-01	5.1%	38.2%
6	T001-221F-HET	3.99E+04	2.65E+00	4.3%	42.5%
7	T001-772F-HET	2.98E+04	2.65E+00	3.3%	45.8%
8	W027-221H-HET	2.35E+04	2.65E+00	3.0%	48.7%
9	RL-T107	2.82E+04	5.49E-01	2.8%	51.6%
10	IN-ICP-002	8.59E+02	2.41E-01	2.5%	54.1%
11	W027-773A-HET	1.92E+04	2.65E+00	2.4%	56.5%
12	RL-W513	3.21E+03	4.50E-01	2.4%	58.8%
13	W027-999-HET	1.56E+04	2.64E+00	2.0%	60.8%
14	W026-221F-HET	1.59E+04	2.66E+00	1.7%	62.5%
15	W027-772F-HET	1.29E+04	2.65E+00	1.6%	64.1%
16	WP-RF003.01	8.94E+01	7.88E+00	1.5%	65.7%
17	IN-ICP-005	4.98E+02	2.40E-01	1.5%	67.1%
18	WP-RF006.01	8.54E+01	7.45E+00	1.4%	68.5%
19	W026-221H-HET	1.19E+04	2.65E+00	1.3%	69.8%
20	RF-MT420P	4.83E+01	8.18E+00	1.1%	70.9%
21	IN-ICP-003	3.62E+02	2.40E-01	1.1%	72.0%
22	IN-W216.98	5.64E+01	9.76E-02	1.0%	73.0%
23	RF-MT0091	6.11E+01	8.24E+00	1.0%	74.0%
24	W027-235F-HET	7.06E+03	2.65E+00	0.9%	74.9%
25	WP-RF005.01	4.54E+01	8.03E+00	0.8%	75.7%
26	RF-TT0802	5.41E+01	1.62E+01	0.8%	76.5%
27	RL-T137	1.00E+02	5.89E+00	0.7%	77.2%
28	RL-T140	9.55E+01	6.26E+00	0.7%	77.9%
29	RF-MT-0299	5.12E+01	2.77E+01	0.7%	78.7%
30	LL-T002	1.40E+02	5.15E-01	0.6%	79.3%
31	RF-MT532C	4.40E+01	3.04E+00	0.6%	79.9%
32	RF-TT0338	2.98E+01	5.00E+00	0.6%	80.5%
33	NT-W001	3.85E+01	9.39E-01	0.5%	81.0%
34	RL-T132	2.27E+01	2.03E+01	0.5%	81.5%
35	WP-RF005.02	2.35E+01	7.38E+00	0.5%	82.0%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	5.75E+05	N/A	100.0%	N/A

Table 4.8-4. WIPP CH-TRU Waste Streams by Curies (²³⁹Pu); Time 175
(Calendar Year = 2208)

Rank Order	Waste Stream ID	Curies (²³⁹ Pu)			
		²³⁹ Pu	²³⁹ Pu /drum	% of Total	Cum. %
1	WP-RF118.01	5.11E+04	8.35E+00	8.9%	8.9%
2	WP-RF009.01	5.06E+04	8.11E+00	8.8%	17.7%
3	T001-221H-HET	4.96E+04	2.65E+00	8.6%	26.3%
4	W027-221F-HET	3.88E+04	2.65E+00	6.7%	33.1%
5	IN-BN-510	2.92E+04	3.06E-01	5.1%	38.2%
6	T001-221F-HET	2.50E+04	2.65E+00	4.3%	42.5%
7	T001-772F-HET	1.87E+04	2.65E+00	3.3%	45.8%
8	W027-221H-HET	1.70E+04	2.65E+00	3.0%	48.7%
9	RL-T107	1.62E+04	5.48E-01	2.8%	51.6%
10	IN-ICP-002	1.44E+04	2.40E-01	2.5%	54.1%
11	W027-773A-HET	1.38E+04	2.64E+00	2.4%	56.5%
12	RL-W513	1.35E+04	4.49E-01	2.4%	58.8%
13	W027-999-HET	1.12E+04	2.64E+00	2.0%	60.8%
14	W026-221F-HET	1.00E+04	2.66E+00	1.7%	62.5%
15	W027-772F-HET	9.28E+03	2.65E+00	1.6%	64.1%
16	WP-RF003.01	8.78E+03	7.87E+00	1.5%	65.7%
17	IN-ICP-005	8.34E+03	2.40E-01	1.5%	67.1%
18	WP-RF006.01	7.89E+03	7.44E+00	1.4%	68.5%
19	W026-221H-HET	7.48E+03	2.65E+00	1.3%	69.8%
20	RF-MT420P	6.31E+03	8.17E+00	1.1%	70.9%
21	IN-ICP-003	6.06E+03	2.40E-01	1.1%	72.0%
22	IN-W216.98	5.96E+03	9.74E-02	1.0%	73.0%
23	RF-MT0091	5.89E+03	8.23E+00	1.0%	74.0%
24	W027-235F-HET	5.11E+03	2.65E+00	0.9%	74.9%
25	WP-RF005.01	4.64E+03	8.02E+00	0.8%	75.7%
26	RF-TT0802	4.38E+03	1.62E+01	0.8%	76.5%
27	RL-T137	4.28E+03	5.88E+00	0.7%	77.2%
28	RL-T140	4.15E+03	6.25E+00	0.7%	77.9%
29	RF-MT-0299	4.13E+03	2.77E+01	0.7%	78.7%
30	LL-T002	3.73E+03	5.15E-01	0.6%	79.3%
31	RF-MT532C	3.61E+03	3.04E+00	0.6%	79.9%
32	RF-TT0338	3.43E+03	4.99E+00	0.6%	80.5%
33	NT-W001	2.82E+03	9.38E-01	0.5%	81.0%
34	RL-T132	2.79E+03	2.03E+01	0.5%	81.5%
35	WP-RF005.02	2.77E+03	7.37E+00	0.5%	82.0%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	5.74E+05	N/A	100.0%	N/A

Table 4.8-5. WIPP CH-TRU Waste Streams by Curies (²³⁹Pu); Time 350
(Calendar Year = 2383)

Rank Order	Waste Stream ID	Curies (²³⁹ Pu)			
		²³⁹ Pu	²³⁹ Pu /drum	% of Total	Cum. %
1	WP-RF118.01	5.08E+04	8.31E+00	8.9%	8.9%
2	WP-RF009.01	5.03E+04	8.07E+00	8.8%	17.7%
3	T001-221H-HET	4.94E+04	2.64E+00	8.6%	26.3%
4	W027-221F-HET	3.86E+04	2.63E+00	6.7%	33.1%
5	IN-BN-510	2.91E+04	3.05E-01	5.1%	38.2%
6	T001-221F-HET	2.48E+04	2.63E+00	4.3%	42.5%
7	T001-772F-HET	1.86E+04	2.64E+00	3.3%	45.8%
8	W027-221H-HET	1.69E+04	2.64E+00	3.0%	48.7%
9	RL-T107	1.61E+04	5.45E-01	2.8%	51.6%
10	IN-ICP-002	1.43E+04	2.39E-01	2.5%	54.1%
11	W027-773A-HET	1.38E+04	2.63E+00	2.4%	56.5%
12	RL-W513	1.35E+04	4.47E-01	2.4%	58.8%
13	W027-999-HET	1.12E+04	2.62E+00	2.0%	60.8%
14	W026-221F-HET	9.99E+03	2.65E+00	1.7%	62.5%
15	W027-772F-HET	9.23E+03	2.63E+00	1.6%	64.1%
16	WP-RF003.01	8.73E+03	7.83E+00	1.5%	65.7%
17	IN-ICP-005	8.30E+03	2.39E-01	1.5%	67.1%
18	WP-RF006.01	7.85E+03	7.40E+00	1.4%	68.5%
19	W026-221H-HET	7.44E+03	2.64E+00	1.3%	69.8%
20	RF-MT420P	6.28E+03	8.13E+00	1.1%	70.9%
21	IN-ICP-003	6.03E+03	2.39E-01	1.1%	72.0%
22	IN-W216.98	5.93E+03	9.70E-02	1.0%	73.0%
23	RF-MT0091	5.86E+03	8.19E+00	1.0%	74.0%
24	W027-235F-HET	5.08E+03	2.63E+00	0.9%	74.9%
25	WP-RF005.01	4.62E+03	7.98E+00	0.8%	75.7%
26	RF-TT0802	4.36E+03	1.61E+01	0.8%	76.5%
27	RL-T137	4.26E+03	5.85E+00	0.7%	77.2%
28	RL-T140	4.12E+03	6.22E+00	0.7%	77.9%
29	RF-MT-0299	4.11E+03	2.75E+01	0.7%	78.7%
30	LL-T002	3.71E+03	5.12E-01	0.6%	79.3%
31	RF-MT532C	3.59E+03	3.02E+00	0.6%	79.9%
32	RF-TT0338	3.41E+03	4.97E+00	0.6%	80.5%
33	NT-W001	2.81E+03	9.33E-01	0.5%	81.0%
34	RL-T132	2.78E+03	2.02E+01	0.5%	81.5%
35	WP-RF005.02	2.76E+03	7.33E+00	0.5%	82.0%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	5.72E+05	N/A	100.0%	N/A

Table 4.8-6. WIPP CH-TRU Waste Streams by Curies (²³⁹Pu); Time 1,000
(Calendar Year = 3033)

Rank Order	Waste Stream ID	Curies (²³⁹ Pu)			
		²³⁹ Pu	²³⁹ Pu /drum	% of Total	Cum. %
1	WP-RF118.01	4.99E+04	8.16E+00	8.9%	8.9%
2	WP-RF009.01	4.94E+04	7.92E+00	8.8%	17.7%
3	T001-221H-HET	4.84E+04	2.59E+00	8.6%	26.3%
4	W027-221F-HET	3.79E+04	2.58E+00	6.7%	33.1%
5	IN-BN-510	2.85E+04	2.99E-01	5.1%	38.2%
6	T001-221F-HET	2.44E+04	2.58E+00	4.3%	42.5%
7	T001-772F-HET	1.83E+04	2.59E+00	3.3%	45.8%
8	W027-221H-HET	1.66E+04	2.59E+00	3.0%	48.7%
9	RL-T107	1.58E+04	5.35E-01	2.8%	51.6%
10	IN-ICP-002	1.41E+04	2.35E-01	2.5%	54.1%
11	W027-773A-HET	1.35E+04	2.58E+00	2.4%	56.5%
12	RL-W513	1.32E+04	4.39E-01	2.4%	58.8%
13	W027-999-HET	1.10E+04	2.58E+00	2.0%	60.8%
14	W026-221F-HET	9.80E+03	2.60E+00	1.7%	62.5%
15	W027-772F-HET	9.06E+03	2.58E+00	1.6%	64.1%
16	WP-RF003.01	8.57E+03	7.68E+00	1.5%	65.7%
17	IN-ICP-005	8.14E+03	2.34E-01	1.5%	67.1%
18	WP-RF006.01	7.71E+03	7.26E+00	1.4%	68.5%
19	W026-221H-HET	7.30E+03	2.59E+00	1.3%	69.8%
20	RF-MT420P	6.16E+03	7.97E+00	1.1%	70.9%
21	IN-ICP-003	5.92E+03	2.34E-01	1.1%	72.0%
22	IN-W216.98	5.82E+03	9.52E-02	1.0%	73.0%
23	RF-MT0091	5.75E+03	8.04E+00	1.0%	74.0%
24	W027-235F-HET	4.99E+03	2.59E+00	0.9%	74.9%
25	WP-RF005.01	4.53E+03	7.83E+00	0.8%	75.7%
26	RF-TT0802	4.28E+03	1.58E+01	0.8%	76.5%
27	RL-T137	4.18E+03	5.74E+00	0.7%	77.2%
28	RL-T140	4.05E+03	6.10E+00	0.7%	77.9%
29	RF-MT-0299	4.03E+03	2.70E+01	0.7%	78.7%
30	LL-T002	3.64E+03	5.03E-01	0.6%	79.3%
31	RF-MT532C	3.52E+03	2.96E+00	0.6%	79.9%
32	RF-TT0338	3.35E+03	4.88E+00	0.6%	80.5%
33	NT-W001	2.76E+03	9.16E-01	0.5%	81.0%
34	RL-T132	2.73E+03	1.98E+01	0.5%	81.5%
35	WP-RF005.02	2.71E+03	7.20E+00	0.5%	82.0%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	5.61E+05	N/A	100.0%	N/A

Table 4.8-7. WIPP CH-TRU Waste Streams by Curies (²³⁹Pu); Time 3,000
(Calendar Year = 5033)

Rank Order	Waste Stream ID	Curies (²³⁹ Pu)			
		²³⁹ Pu	²³⁹ Pu /drum	% of Total	Cum. %
1	WP-RF118.01	4.71E+04	7.70E+00	8.9%	8.9%
2	WP-RF009.01	4.66E+04	7.47E+00	8.8%	17.7%
3	T001-221H-HET	4.57E+04	2.44E+00	8.6%	26.3%
4	W027-221F-HET	3.57E+04	2.44E+00	6.7%	33.1%
5	IN-BN-510	2.69E+04	2.82E-01	5.1%	38.2%
6	T001-221F-HET	2.30E+04	2.44E+00	4.3%	42.5%
7	T001-772F-HET	1.72E+04	2.44E+00	3.3%	45.8%
8	W027-221H-HET	1.57E+04	2.44E+00	3.0%	48.7%
9	RL-T107	1.49E+04	5.05E-01	2.8%	51.6%
10	IN-ICP-002	1.33E+04	2.22E-01	2.5%	54.1%
11	W027-773A-HET	1.27E+04	2.44E+00	2.4%	56.5%
12	RL-W513	1.25E+04	4.14E-01	2.4%	58.8%
13	W027-999-HET	1.04E+04	2.43E+00	2.0%	60.8%
14	W026-221F-HET	9.26E+03	2.45E+00	1.7%	62.5%
15	W027-772F-HET	8.55E+03	2.44E+00	1.6%	64.1%
16	WP-RF003.01	8.09E+03	7.25E+00	1.5%	65.7%
17	IN-ICP-005	7.69E+03	2.21E-01	1.5%	67.1%
18	WP-RF006.01	7.28E+03	6.86E+00	1.4%	68.5%
19	W026-221H-HET	6.89E+03	2.44E+00	1.3%	69.8%
20	RF-MT420P	5.82E+03	7.53E+00	1.1%	70.9%
21	IN-ICP-003	5.59E+03	2.21E-01	1.1%	72.0%
22	IN-W216.98	5.50E+03	8.98E-02	1.0%	73.0%
23	RF-MT0091	5.43E+03	7.59E+00	1.0%	74.0%
24	W027-235F-HET	4.71E+03	2.44E+00	0.9%	74.9%
25	WP-RF005.01	4.28E+03	7.39E+00	0.8%	75.7%
26	RF-TT0802	4.04E+03	1.49E+01	0.8%	76.5%
27	RL-T137	3.95E+03	5.42E+00	0.7%	77.2%
28	RL-T140	3.82E+03	5.76E+00	0.7%	77.9%
29	RF-MT-0299	3.80E+03	2.55E+01	0.7%	78.7%
30	LL-T002	3.44E+03	4.74E-01	0.6%	79.3%
31	RF-MT532C	3.33E+03	2.80E+00	0.6%	79.9%
32	RF-TT0338	3.16E+03	4.60E+00	0.6%	80.5%
33	NT-W001	2.60E+03	8.64E-01	0.5%	81.0%
34	RL-T132	2.58E+03	1.87E+01	0.5%	81.5%
35	WP-RF005.02	2.56E+03	6.80E+00	0.5%	82.0%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	5.30E+05	N/A	100.0%	N/A

Table 4.8-8. WIPP CH-TRU Waste Streams by Curies (²³⁹Pu); Time 5,000
(Calendar Year = 7033)

Rank Order	Waste Stream ID	Curies (²³⁹ Pu)			
		²³⁹ Pu	²³⁹ Pu /drum	% of Total	Cum. %
1	WP-RF118.01	4.45E+04	7.27E+00	8.9%	8.9%
2	WP-RF009.01	4.40E+04	7.06E+00	8.8%	17.7%
3	T001-221H-HET	4.32E+04	2.31E+00	8.6%	26.3%
4	W027-221F-HET	3.37E+04	2.30E+00	6.7%	33.1%
5	IN-BN-510	2.54E+04	2.66E-01	5.1%	38.2%
6	T001-221F-HET	2.17E+04	2.30E+00	4.3%	42.5%
7	T001-772F-HET	1.63E+04	2.31E+00	3.3%	45.8%
8	W027-221H-HET	1.48E+04	2.31E+00	3.0%	48.7%
9	RL-T107	1.41E+04	4.77E-01	2.8%	51.5%
10	IN-ICP-002	1.25E+04	2.09E-01	2.5%	54.1%
11	W027-773A-HET	1.20E+04	2.30E+00	2.4%	56.5%
12	RL-W513	1.18E+04	3.91E-01	2.4%	58.8%
13	W027-999-HET	9.78E+03	2.29E+00	2.0%	60.8%
14	W026-221F-HET	8.74E+03	2.31E+00	1.7%	62.5%
15	W027-772F-HET	8.07E+03	2.30E+00	1.6%	64.1%
16	WP-RF003.01	7.64E+03	6.85E+00	1.5%	65.7%
17	IN-ICP-005	7.26E+03	2.09E-01	1.5%	67.1%
18	WP-RF006.01	6.87E+03	6.47E+00	1.4%	68.5%
19	W026-221H-HET	6.51E+03	2.30E+00	1.3%	69.8%
20	RF-MT420P	5.49E+03	7.11E+00	1.1%	70.9%
21	IN-ICP-003	5.28E+03	2.09E-01	1.1%	71.9%
22	IN-W216.98	5.19E+03	8.48E-02	1.0%	73.0%
23	RF-MT0091	5.12E+03	7.16E+00	1.0%	74.0%
24	W027-235F-HET	4.45E+03	2.30E+00	0.9%	74.9%
25	WP-RF005.01	4.04E+03	6.98E+00	0.8%	75.7%
26	RF-TT0802	3.82E+03	1.41E+01	0.8%	76.5%
27	RL-T137	3.73E+03	5.12E+00	0.7%	77.2%
28	RL-T140	3.61E+03	5.44E+00	0.7%	77.9%
29	RF-MT-0299	3.59E+03	2.41E+01	0.7%	78.7%
30	LL-T002	3.24E+03	4.48E-01	0.6%	79.3%
31	RF-MT532C	3.14E+03	2.64E+00	0.6%	79.9%
32	RF-TT0338	2.99E+03	4.35E+00	0.6%	80.5%
33	NT-W001	2.46E+03	8.16E-01	0.5%	81.0%
34	RL-T132	2.43E+03	1.76E+01	0.5%	81.5%
35	WP-RF005.02	2.41E+03	6.42E+00	0.5%	82.0%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	5.00E+05	N/A	100.0%	N/A

Table 4.8-9. WIPP CH-TRU Waste Streams by Curies (²³⁹Pu); Time 7,500
(Calendar Year = 9533)

Rank Order	Waste Stream ID	Curies (²³⁹ Pu)			
		²³⁹ Pu	²³⁹ Pu /drum	% of Total	Cum. %
1	WP-RF118.01	4.14E+04	6.77E+00	8.9%	8.9%
2	WP-RF009.01	4.10E+04	6.57E+00	8.8%	17.7%
3	T001-221H-HET	4.02E+04	2.15E+00	8.6%	26.3%
4	W027-221F-HET	3.14E+04	2.14E+00	6.7%	33.1%
5	IN-BN-510	2.37E+04	2.48E-01	5.1%	38.2%
6	T001-221F-HET	2.02E+04	2.14E+00	4.3%	42.5%
7	T001-772F-HET	1.51E+04	2.15E+00	3.3%	45.8%
8	W027-221H-HET	1.38E+04	2.15E+00	3.0%	48.7%
9	RL-T107	1.31E+04	4.44E-01	2.8%	51.6%
10	IN-ICP-002	1.17E+04	1.95E-01	2.5%	54.1%
11	W027-773A-HET	1.12E+04	2.14E+00	2.4%	56.5%
12	RL-W513	1.10E+04	3.64E-01	2.4%	58.8%
13	W027-999-HET	9.10E+03	2.14E+00	2.0%	60.8%
14	W026-221F-HET	8.13E+03	2.15E+00	1.7%	62.5%
15	W027-772F-HET	7.51E+03	2.14E+00	1.6%	64.1%
16	WP-RF003.01	7.11E+03	6.37E+00	1.5%	65.7%
17	IN-ICP-005	6.75E+03	1.94E-01	1.5%	67.1%
18	WP-RF006.01	6.39E+03	6.02E+00	1.4%	68.5%
19	W026-221H-HET	6.05E+03	2.14E+00	1.3%	69.8%
20	RF-MT420P	5.11E+03	6.61E+00	1.1%	70.9%
21	IN-ICP-003	4.91E+03	1.94E-01	1.1%	72.0%
22	IN-W216.98	4.83E+03	7.89E-02	1.0%	73.0%
23	RF-MT0091	4.77E+03	6.67E+00	1.0%	74.0%
24	W027-235F-HET	4.14E+03	2.14E+00	0.9%	74.9%
25	WP-RF005.01	3.76E+03	6.49E+00	0.8%	75.7%
26	RF-TT0802	3.55E+03	1.31E+01	0.8%	76.5%
27	RL-T137	3.47E+03	4.76E+00	0.7%	77.2%
28	RL-T140	3.36E+03	5.06E+00	0.7%	77.9%
29	RF-MT-0299	3.34E+03	2.24E+01	0.7%	78.7%
30	LL-T002	3.02E+03	4.17E-01	0.6%	79.3%
31	RF-MT532C	2.92E+03	2.46E+00	0.6%	79.9%
32	RF-TT0338	2.78E+03	4.05E+00	0.6%	80.5%
33	NT-W001	2.29E+03	7.59E-01	0.5%	81.0%
34	RL-T132	2.26E+03	1.64E+01	0.5%	81.5%
35	WP-RF005.02	2.25E+03	5.97E+00	0.5%	82.0%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	4.65E+05	N/A	100.0%	N/A

Table 4.8-10. WIPP CH-TRU Waste Streams by Curies (²³⁹Pu); Time 10,000
(Calendar Year = 12033)

Rank Order	Waste Stream ID	Curies (²³⁹ Pu)			
		²³⁹ Pu	²³⁹ Pu /drum	% of Total	Cum. %
1	WP-RF118.01	3.85E+04	6.29E+00	8.9%	8.9%
2	WP-RF009.01	3.81E+04	6.11E+00	8.8%	17.7%
3	T001-221H-HET	3.74E+04	2.00E+00	8.6%	26.3%
4	W027-221F-HET	2.92E+04	1.99E+00	6.7%	33.1%
5	IN-BN-510	2.20E+04	2.31E-01	5.1%	38.2%
6	T001-221F-HET	1.88E+04	1.99E+00	4.3%	42.5%
7	T001-772F-HET	1.41E+04	2.00E+00	3.3%	45.8%
8	W027-221H-HET	1.28E+04	2.00E+00	3.0%	48.7%
9	RL-T107	1.22E+04	4.13E-01	2.8%	51.6%
10	IN-ICP-002	1.09E+04	1.81E-01	2.5%	54.1%
11	W027-773A-HET	1.04E+04	1.99E+00	2.4%	56.5%
12	RL-W513	1.02E+04	3.39E-01	2.4%	58.8%
13	W027-999-HET	8.46E+03	1.99E+00	2.0%	60.8%
14	W026-221F-HET	7.57E+03	2.00E+00	1.7%	62.5%
15	W027-772F-HET	6.99E+03	1.99E+00	1.6%	64.1%
16	WP-RF003.01	6.61E+03	5.93E+00	1.5%	65.7%
17	IN-ICP-005	6.28E+03	1.81E-01	1.5%	67.1%
18	WP-RF006.01	5.95E+03	5.60E+00	1.4%	68.5%
19	W026-221H-HET	5.63E+03	2.00E+00	1.3%	69.8%
20	RF-MT420P	4.76E+03	6.15E+00	1.1%	70.9%
21	IN-ICP-003	4.57E+03	1.81E-01	1.1%	72.0%
22	IN-W216.98	4.49E+03	7.34E-02	1.0%	73.0%
23	RF-MT0091	4.43E+03	6.20E+00	1.0%	74.0%
24	W027-235F-HET	3.85E+03	2.00E+00	0.9%	74.9%
25	WP-RF005.01	3.50E+03	6.04E+00	0.8%	75.7%
26	RF-TT0802	3.30E+03	1.22E+01	0.8%	76.5%
27	RL-T137	3.23E+03	4.43E+00	0.7%	77.2%
28	RL-T140	3.12E+03	4.71E+00	0.7%	77.9%
29	RF-MT-0299	3.11E+03	2.08E+01	0.7%	78.7%
30	LL-T002	2.81E+03	3.88E-01	0.6%	79.3%
31	RF-MT532C	2.72E+03	2.29E+00	0.6%	79.9%
32	RF-TT0338	2.58E+03	3.76E+00	0.6%	80.5%
33	NT-W001	2.13E+03	7.07E-01	0.5%	81.0%
34	RL-T132	2.11E+03	1.53E+01	0.5%	81.5%
35	WP-RF005.02	2.09E+03	5.56E+00	0.5%	82.0%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	4.33E+05	N/A	100.0%	N/A

4.9 CURIES ²⁴⁰PU

²⁴⁰Pu, a radioactive isotope of Plutonium with a half-life of 6,564 years, is one of the key radionuclides that together contribute more than 99% of all radioactivity in the repository. ²⁴⁰Pu, which is found in waste streams both directly and as a result of the decay of ²⁴⁴Cm (see Section 4.6), diminishes little over 10,000 years (calendar year 12033) after closure (see Table 4.9-10).

The ²⁴⁰Pu curie values in Table 4.9-1 through Table 4.9-10 were sorted to illustrate the primary waste stream contributors to ²⁴⁰Pu activity over the entire population of waste. Each table identifies the 35 waste streams that offer the greatest contribution during each of the ten time intervals output by the code EPAUNI. All 690 waste streams and their total ²⁴⁰Pu curies can be found in the file EPU_CRA1BC_CH_ACTIVITY.DIA in the CRA library CRA1BC_EPU.

Almost 80% of all ²⁴⁰Pu activity is derived from 35 (of 690) waste streams at the time of closure (see Table 4.9-1). Although the parent nuclide ²⁴⁴Cm decays to ²⁴⁰Pu, waste stream contributions to ²⁴⁰Pu curies remain relatively constant through time interval 10,000 years (see Table 4.9-10). This is largely due to ²⁴⁴Cm being a minor contributor to the amount of ²⁴⁰Pu (see Section 4.6).

Table 4.9-1. WIPP CH-TRU Waste Streams by Curies (²⁴⁰Pu); Time 0
(Calendar Year = 2033)

Rank Order	Waste Stream ID	Curies (²⁴⁰ Pu)			
		²⁴⁰ Pu	²⁴⁰ Pu /drum	% of Total	Cum. %
1	WP-RF118.01	1.15E+04	1.87E+00	12.2%	12.2%
2	WP-RF009.01	1.14E+04	1.82E+00	12.1%	24.3%
3	IN-BN-510	7.18E+03	7.52E-02	7.7%	32.0%
4	RL-W513	6.77E+03	2.25E-01	7.2%	39.2%
5	IN-ICP-002	3.80E+03	6.33E-02	4.1%	43.3%
6	RL-T107	3.63E+03	1.23E-01	3.9%	47.1%
7	IN-ICP-005	2.20E+03	6.34E-02	2.3%	49.5%
8	WP-RF003.01	2.01E+03	1.80E+00	2.1%	51.6%
9	WP-RF006.01	1.81E+03	1.71E+00	1.9%	53.6%
10	IN-ICP-003	1.61E+03	6.35E-02	1.7%	55.3%
11	LL-T002	1.55E+03	2.13E-01	1.6%	56.9%
12	OR-W201	1.52E+03	3.66E+00	1.6%	58.5%
13	RF-MT420P	1.45E+03	1.87E+00	1.5%	60.1%
14	RF-MT0091	1.35E+03	1.88E+00	1.4%	61.5%
15	IN-W216.98	1.32E+03	2.15E-02	1.4%	62.9%
16	T001-221H-HET	1.23E+03	6.55E-02	1.3%	64.2%
17	WP-RF005.01	1.06E+03	1.82E+00	1.1%	65.4%
18	RL-T140	1.03E+03	1.55E+00	1.1%	66.5%
19	RF-TT0802	9.97E+02	3.68E+00	1.1%	67.5%
20	W027-221F-HET	9.61E+02	6.55E-02	1.0%	68.5%
21	RL-T137	9.57E+02	1.31E+00	1.0%	69.6%
22	RF-MT-0299	9.47E+02	6.35E+00	1.0%	70.6%
23	RF-MT532C	8.25E+02	6.94E-01	0.9%	71.4%
24	RF-TT0338	7.74E+02	1.13E+00	0.8%	72.3%
25	RL-T132	6.27E+02	4.55E+00	0.7%	72.9%
26	WP-RF005.02	6.27E+02	1.67E+00	0.7%	73.6%
27	RF-TT392P	6.27E+02	2.00E+00	0.7%	74.3%
28	RF-TT398R	6.24E+02	1.86E+00	0.7%	74.9%
29	T001-221F-HET	6.20E+02	6.57E-02	0.7%	75.6%
30	RF-TT3011	6.17E+02	7.28E-02	0.7%	76.3%
31	IN-W309.609	5.75E+02	1.55E-02	0.6%	76.9%
32	WP-INW211.001	5.66E+02	4.12E-01	0.6%	77.5%
33	RF-TT0824	5.50E+02	1.12E-01	0.6%	78.1%
34	WP-RF008.01	5.39E+02	1.40E+00	0.6%	78.6%
35	RF-TT0312	5.08E+02	1.83E+00	0.5%	79.2%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	9.38E+04	N/A	100.0%	N/A

Table 4.9-2. WIPP CH-TRU Waste Streams by Curies (²⁴⁰Pu); Time 100
(Calendar Year = 2133)

Rank Order	Waste Stream ID	Curies (²⁴⁰ Pu)			
		²⁴⁰ Pu	²⁴⁰ Pu /drum	% of Total	Cum. %
1	WP-RF118.01	1.13E+04	1.85E+00	12.2%	12.2%
2	WP-RF009.01	1.12E+04	1.80E+00	12.1%	24.3%
3	IN-BN-510	7.10E+03	7.44E-02	7.7%	32.0%
4	RL-W513	6.70E+03	2.22E-01	7.2%	39.2%
5	IN-ICP-002	3.76E+03	6.27E-02	4.0%	43.3%
6	RL-T107	3.59E+03	1.21E-01	3.9%	47.1%
7	IN-ICP-005	2.18E+03	6.27E-02	2.3%	49.5%
8	WP-RF003.01	1.99E+03	1.79E+00	2.1%	51.6%
9	WP-RF006.01	1.80E+03	1.69E+00	1.9%	53.6%
10	IN-ICP-003	1.59E+03	6.28E-02	1.7%	55.3%
11	LL-T002	1.53E+03	2.11E-01	1.6%	56.9%
12	OR-W201	1.50E+03	3.62E+00	1.6%	58.5%
13	RF-MT420P	1.43E+03	1.85E+00	1.5%	60.1%
14	RF-MT0091	1.33E+03	1.86E+00	1.4%	61.5%
15	IN-W216.98	1.30E+03	2.13E-02	1.4%	62.9%
16	T001-221H-HET	1.21E+03	6.48E-02	1.3%	64.2%
17	WP-RF005.01	1.05E+03	1.80E+00	1.1%	65.3%
18	RL-T140	1.02E+03	1.53E+00	1.1%	66.4%
19	RF-TT0802	9.86E+02	3.64E+00	1.1%	67.5%
20	W027-221F-HET	9.51E+02	6.49E-02	1.0%	68.5%
21	RL-T137	9.47E+02	1.30E+00	1.0%	69.6%
22	RF-MT-0299	9.37E+02	6.28E+00	1.0%	70.6%
23	RF-MT532C	8.17E+02	6.87E-01	0.9%	71.4%
24	RF-TT0338	7.66E+02	1.12E+00	0.8%	72.3%
25	RL-T132	6.20E+02	4.50E+00	0.7%	72.9%
26	WP-RF005.02	6.20E+02	1.65E+00	0.7%	73.6%
27	RF-TT392P	6.20E+02	1.98E+00	0.7%	74.3%
28	RF-TT398R	6.17E+02	1.84E+00	0.7%	74.9%
29	T001-221F-HET	6.13E+02	6.50E-02	0.7%	75.6%
30	RF-TT3011	6.10E+02	7.21E-02	0.7%	76.3%
31	IN-W309.609	5.69E+02	1.53E-02	0.6%	76.9%
32	WP-INW211.001	5.60E+02	4.07E-01	0.6%	77.5%
33	RF-TT0824	5.44E+02	1.11E-01	0.6%	78.1%
34	WP-RF008.01	5.34E+02	1.39E+00	0.6%	78.6%
35	RF-TT0312	5.03E+02	1.81E+00	0.5%	79.2%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	9.28E+04	N/A	100.0%	N/A

Table 4.9-3. WIPP CH-TRU Waste Streams by Curies (²⁴⁰Pu); Time 125
(Calendar Year = 2158)

Rank Order	Waste Stream ID	Curies (²⁴⁰ Pu)			
		²⁴⁰ Pu	²⁴⁰ Pu /drum	% of Total	Cum. %
1	WP-RF118.01	1.13E+04	1.85E+00	12.2%	12.2%
2	WP-RF009.01	1.12E+04	1.80E+00	12.1%	24.3%
3	IN-BN-510	7.08E+03	7.42E-02	7.7%	32.0%
4	RL-W513	6.68E+03	2.22E-01	7.2%	39.2%
5	IN-ICP-002	3.75E+03	6.25E-02	4.0%	43.3%
6	RL-T107	3.58E+03	1.21E-01	3.9%	47.1%
7	IN-ICP-005	2.17E+03	6.25E-02	2.3%	49.5%
8	WP-RF003.01	1.99E+03	1.78E+00	2.1%	51.6%
9	WP-RF006.01	1.79E+03	1.69E+00	1.9%	53.6%
10	IN-ICP-003	1.58E+03	6.26E-02	1.7%	55.3%
11	LL-T002	1.52E+03	2.10E-01	1.6%	56.9%
12	OR-W201	1.50E+03	3.61E+00	1.6%	58.5%
13	RF-MT420P	1.43E+03	1.84E+00	1.5%	60.1%
14	RF-MT0091	1.33E+03	1.86E+00	1.4%	61.5%
15	IN-W216.98	1.30E+03	2.12E-02	1.4%	62.9%
16	T001-221H-HET	1.21E+03	6.46E-02	1.3%	64.2%
17	WP-RF005.01	1.04E+03	1.80E+00	1.1%	65.4%
18	RL-T140	1.01E+03	1.53E+00	1.1%	66.4%
19	RF-TT0802	9.84E+02	3.63E+00	1.1%	67.5%
20	W027-221F-HET	9.48E+02	6.47E-02	1.0%	68.5%
21	RL-T137	9.44E+02	1.30E+00	1.0%	69.6%
22	RF-MT-0299	9.34E+02	6.26E+00	1.0%	70.6%
23	RF-MT532C	8.14E+02	6.85E-01	0.9%	71.4%
24	RF-TT0338	7.64E+02	1.11E+00	0.8%	72.3%
25	RL-T132	6.19E+02	4.49E+00	0.7%	72.9%
26	WP-RF005.02	6.19E+02	1.64E+00	0.7%	73.6%
27	RF-TT392P	6.19E+02	1.97E+00	0.7%	74.3%
28	RF-TT398R	6.16E+02	1.84E+00	0.7%	74.9%
29	T001-221F-HET	6.12E+02	6.49E-02	0.7%	75.6%
30	RF-TT3011	6.09E+02	7.19E-02	0.7%	76.3%
31	IN-W309.609	5.68E+02	1.53E-02	0.6%	76.9%
32	WP-INW211.001	5.59E+02	4.06E-01	0.6%	77.5%
33	RF-TT0824	5.43E+02	1.10E-01	0.6%	78.1%
34	WP-RF008.01	5.32E+02	1.38E+00	0.6%	78.6%
35	RF-TT0312	5.02E+02	1.80E+00	0.5%	79.2%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	9.25E+04	N/A	100.0%	N/A

Table 4.9-4. WIPP CH-TRU Waste Streams by Curies (²⁴⁰Pu); Time 175
(Calendar Year = 2208)

Rank Order	Waste Stream ID	Curies (²⁴⁰ Pu)			
		²⁴⁰ Pu	²⁴⁰ Pu /drum	% of Total	Cum. %
1	WP-RF118.01	1.13E+04	1.84E+00	12.2%	12.2%
2	WP-RF009.01	1.12E+04	1.79E+00	12.1%	24.3%
3	IN-BN-510	7.04E+03	7.38E-02	7.7%	32.0%
4	RL-W513	6.64E+03	2.21E-01	7.2%	39.2%
5	IN-ICP-002	3.73E+03	6.22E-02	4.0%	43.3%
6	RL-T107	3.56E+03	1.20E-01	3.9%	47.1%
7	IN-ICP-005	2.16E+03	6.22E-02	2.3%	49.5%
8	WP-RF003.01	1.98E+03	1.77E+00	2.1%	51.6%
9	WP-RF006.01	1.78E+03	1.68E+00	1.9%	53.6%
10	IN-ICP-003	1.58E+03	6.23E-02	1.7%	55.3%
11	LL-T002	1.52E+03	2.09E-01	1.6%	56.9%
12	OR-W201	1.49E+03	3.59E+00	1.6%	58.5%
13	RF-MT420P	1.42E+03	1.84E+00	1.5%	60.1%
14	RF-MT0091	1.32E+03	1.85E+00	1.4%	61.5%
15	IN-W216.98	1.29E+03	2.11E-02	1.4%	62.9%
16	T001-221H-HET	1.20E+03	6.42E-02	1.3%	64.2%
17	WP-RF005.01	1.04E+03	1.79E+00	1.1%	65.4%
18	RL-T140	1.01E+03	1.52E+00	1.1%	66.4%
19	RF-TT0802	9.78E+02	3.61E+00	1.1%	67.5%
20	W027-221F-HET	9.43E+02	6.43E-02	1.0%	68.5%
21	RL-T137	9.39E+02	1.29E+00	1.0%	69.6%
22	RF-MT-0299	9.29E+02	6.23E+00	1.0%	70.6%
23	RF-MT532C	8.10E+02	6.81E-01	0.9%	71.4%
24	RF-TT0338	7.60E+02	1.11E+00	0.8%	72.3%
25	RL-T132	6.15E+02	4.46E+00	0.7%	72.9%
26	WP-RF005.02	6.15E+02	1.64E+00	0.7%	73.6%
27	RF-TT392P	6.15E+02	1.96E+00	0.7%	74.3%
28	RF-TT398R	6.12E+02	1.83E+00	0.7%	74.9%
29	T001-221F-HET	6.09E+02	6.45E-02	0.7%	75.6%
30	RF-TT3011	6.06E+02	7.15E-02	0.7%	76.3%
31	IN-W309.609	5.65E+02	1.52E-02	0.6%	76.9%
32	WP-INW211.001	5.56E+02	4.04E-01	0.6%	77.5%
33	RF-TT0824	5.40E+02	1.10E-01	0.6%	78.1%
34	WP-RF008.01	5.29E+02	1.38E+00	0.6%	78.6%
35	RF-TT0312	4.99E+02	1.79E+00	0.5%	79.2%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	9.20E+04	N/A	100.0%	N/A

Table 4.9-5. WIPP CH-TRU Waste Streams by Curies (²⁴⁰Pu); Time 350
(Calendar Year = 2383)

Rank Order	Waste Stream ID	Curies (²⁴⁰ Pu)			
		²⁴⁰ Pu	²⁴⁰ Pu /drum	% of Total	Cum. %
1	WP-RF118.01	1.10E+04	1.80E+00	12.2%	12.2%
2	WP-RF009.01	1.10E+04	1.75E+00	12.1%	24.3%
3	IN-BN-510	6.91E+03	7.24E-02	7.7%	32.0%
4	RL-W513	6.52E+03	2.17E-01	7.2%	39.2%
5	IN-ICP-002	3.66E+03	6.10E-02	4.1%	43.3%
6	RL-T107	3.50E+03	1.18E-01	3.9%	47.1%
7	IN-ICP-005	2.12E+03	6.10E-02	2.3%	49.5%
8	WP-RF003.01	1.94E+03	1.74E+00	2.1%	51.6%
9	WP-RF006.01	1.75E+03	1.65E+00	1.9%	53.6%
10	IN-ICP-003	1.55E+03	6.12E-02	1.7%	55.3%
11	LL-T002	1.49E+03	2.05E-01	1.6%	56.9%
12	OR-W201	1.46E+03	3.52E+00	1.6%	58.5%
13	RF-MT420P	1.39E+03	1.80E+00	1.5%	60.1%
14	RF-MT0091	1.30E+03	1.81E+00	1.4%	61.5%
15	IN-W216.98	1.27E+03	2.07E-02	1.4%	62.9%
16	T001-221H-HET	1.18E+03	6.31E-02	1.3%	64.2%
17	WP-RF005.01	1.02E+03	1.76E+00	1.1%	65.4%
18	RL-T140	9.89E+02	1.49E+00	1.1%	66.4%
19	RF-TT0802	9.60E+02	3.54E+00	1.1%	67.5%
20	W027-221F-HET	9.26E+02	6.32E-02	1.0%	68.5%
21	RL-T137	9.22E+02	1.27E+00	1.0%	69.6%
22	RF-MT-0299	9.12E+02	6.12E+00	1.0%	70.6%
23	RF-MT532C	7.95E+02	6.69E-01	0.9%	71.4%
24	RF-TT0338	7.46E+02	1.09E+00	0.8%	72.3%
25	RL-T132	6.04E+02	4.38E+00	0.7%	72.9%
26	WP-RF005.02	6.04E+02	1.61E+00	0.7%	73.6%
27	RF-TT392P	6.04E+02	1.93E+00	0.7%	74.3%
28	RF-TT398R	6.01E+02	1.79E+00	0.7%	74.9%
29	T001-221F-HET	5.97E+02	6.33E-02	0.7%	75.6%
30	RF-TT3011	5.94E+02	7.02E-02	0.7%	76.3%
31	IN-W309.609	5.54E+02	1.49E-02	0.6%	76.9%
32	WP-INW211.001	5.46E+02	3.97E-01	0.6%	77.5%
33	RF-TT0824	5.30E+02	1.08E-01	0.6%	78.1%
34	WP-RF008.01	5.20E+02	1.35E+00	0.6%	78.6%
35	RF-TT0312	4.90E+02	1.76E+00	0.5%	79.2%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	9.03E+04	N/A	100.0%	N/A

Table 4.9-6. WIPP CH-TRU Waste Streams by Curies (²⁴⁰Pu); Time 1,000
(Calendar Year = 3033)

Rank Order	Waste Stream ID	Curies (²⁴⁰ Pu)			
		²⁴⁰ Pu	²⁴⁰ Pu /drum	% of Total	Cum. %
1	WP-RF118.01	1.03E+04	1.69E+00	12.2%	12.2%
2	WP-RF009.01	1.02E+04	1.64E+00	12.1%	24.3%
3	IN-BN-510	6.45E+03	6.76E-02	7.7%	32.0%
4	RL-W513	6.09E+03	2.02E-01	7.2%	39.2%
5	IN-ICP-002	3.42E+03	5.70E-02	4.1%	43.3%
6	RL-T107	3.26E+03	1.10E-01	3.9%	47.1%
7	IN-ICP-005	1.98E+03	5.70E-02	2.3%	49.5%
8	WP-RF003.01	1.81E+03	1.62E+00	2.1%	51.6%
9	WP-RF006.01	1.63E+03	1.54E+00	1.9%	53.6%
10	IN-ICP-003	1.44E+03	5.71E-02	1.7%	55.3%
11	LL-T002	1.39E+03	1.92E-01	1.6%	56.9%
12	OR-W201	1.36E+03	3.29E+00	1.6%	58.5%
13	RF-MT420P	1.30E+03	1.68E+00	1.5%	60.1%
14	RF-MT0091	1.21E+03	1.69E+00	1.4%	61.5%
15	IN-W216.98	1.18E+03	1.93E-02	1.4%	62.9%
16	T001-221H-HET	1.10E+03	5.89E-02	1.3%	64.2%
17	WP-RF005.01	9.50E+02	1.64E+00	1.1%	65.4%
18	RL-T140	9.23E+02	1.39E+00	1.1%	66.5%
19	RF-TT0802	8.96E+02	3.31E+00	1.1%	67.5%
20	W027-221F-HET	8.64E+02	5.90E-02	1.0%	68.5%
21	RL-T137	8.61E+02	1.18E+00	1.0%	69.6%
22	RF-MT-0299	8.52E+02	5.71E+00	1.0%	70.6%
23	RF-MT532C	7.42E+02	6.24E-01	0.9%	71.5%
24	RF-TT0338	6.97E+02	1.01E+00	0.8%	72.3%
25	RL-T132	5.64E+02	4.09E+00	0.7%	72.9%
26	WP-RF005.02	5.64E+02	1.50E+00	0.7%	73.6%
27	RF-TT392P	5.64E+02	1.80E+00	0.7%	74.3%
28	RF-TT398R	5.61E+02	1.67E+00	0.7%	75.0%
29	T001-221F-HET	5.58E+02	5.91E-02	0.7%	75.6%
30	RF-TT3011	5.55E+02	6.55E-02	0.7%	76.3%
31	IN-W309.609	5.17E+02	1.39E-02	0.6%	76.9%
32	WP-INW211.001	5.09E+02	3.70E-01	0.6%	77.5%
33	RF-TT0824	4.95E+02	1.00E-01	0.6%	78.1%
34	WP-RF008.01	4.85E+02	1.26E+00	0.6%	78.6%
35	RF-TT0312	4.57E+02	1.64E+00	0.5%	79.2%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	8.43E+04	N/A	100.0%	N/A

Table 4.9-7. WIPP CH-TRU Waste Streams by Curies (²⁴⁰Pu); Time 3,000
(Calendar Year = 5033)

Rank Order	Waste Stream ID	Curies (²⁴⁰ Pu)			
		²⁴⁰ Pu	²⁴⁰ Pu /drum	% of Total	Cum. %
1	WP-RF118.01	8.34E+03	1.36E+00	12.2%	12.2%
2	WP-RF009.01	8.27E+03	1.32E+00	12.1%	24.3%
3	IN-BN-510	5.22E+03	5.47E-02	7.7%	32.0%
4	RL-W513	4.92E+03	1.64E-01	7.2%	39.2%
5	IN-ICP-002	2.76E+03	4.61E-02	4.1%	43.3%
6	RL-T107	2.64E+03	8.93E-02	3.9%	47.1%
7	IN-ICP-005	1.60E+03	4.61E-02	2.3%	49.5%
8	WP-RF003.01	1.47E+03	1.31E+00	2.1%	51.6%
9	WP-RF006.01	1.32E+03	1.24E+00	1.9%	53.6%
10	IN-ICP-003	1.17E+03	4.62E-02	1.7%	55.3%
11	LL-T002	1.12E+03	1.55E-01	1.6%	56.9%
12	OR-W201	1.10E+03	2.66E+00	1.6%	58.5%
13	RF-MT420P	1.05E+03	1.36E+00	1.5%	60.1%
14	RF-MT0091	9.79E+02	1.37E+00	1.4%	61.5%
15	IN-W216.98	9.57E+02	1.56E-02	1.4%	62.9%
16	T001-221H-HET	8.92E+02	4.76E-02	1.3%	64.2%
17	WP-RF005.01	7.69E+02	1.33E+00	1.1%	65.4%
18	RL-T140	7.47E+02	1.13E+00	1.1%	66.4%
19	RF-TT0802	7.25E+02	2.68E+00	1.1%	67.5%
20	W027-221F-HET	6.99E+02	4.77E-02	1.0%	68.5%
21	RL-T137	6.96E+02	9.56E-01	1.0%	69.6%
22	RF-MT-0299	6.89E+02	4.62E+00	1.0%	70.6%
23	RF-MT532C	6.00E+02	5.05E-01	0.9%	71.4%
24	RF-TT0338	5.63E+02	8.21E-01	0.8%	72.3%
25	RL-T132	4.56E+02	3.31E+00	0.7%	72.9%
26	WP-RF005.02	4.56E+02	1.21E+00	0.7%	73.6%
27	RF-TT392P	4.56E+02	1.46E+00	0.7%	74.3%
28	RF-TT398R	4.54E+02	1.35E+00	0.7%	74.9%
29	T001-221F-HET	4.51E+02	4.78E-02	0.7%	75.6%
30	RF-TT3011	4.49E+02	5.30E-02	0.7%	76.3%
31	IN-W309.609	4.18E+02	1.13E-02	0.6%	76.9%
32	WP-INW211.001	4.12E+02	3.00E-01	0.6%	77.5%
33	RF-TT0824	4.00E+02	8.13E-02	0.6%	78.1%
34	WP-RF008.01	3.92E+02	1.02E+00	0.6%	78.6%
35	RF-TT0312	3.70E+02	1.33E+00	0.5%	79.2%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	6.82E+04	N/A	100.0%	N/A

Table 4.9-8. WIPP CH-TRU Waste Streams by Curies (²⁴⁰Pu); Time 5,000
(Calendar Year = 7033)

Rank Order	Waste Stream ID	Curies (²⁴⁰ Pu)			
		²⁴⁰ Pu	²⁴⁰ Pu /drum	% of Total	Cum. %
1	WP-RF118.01	6.75E+03	1.10E+00	12.2%	12.2%
2	WP-RF009.01	6.69E+03	1.07E+00	12.1%	24.3%
3	IN-BN-510	4.22E+03	4.42E-02	7.7%	32.0%
4	RL-W513	3.98E+03	1.32E-01	7.2%	39.2%
5	IN-ICP-002	2.24E+03	3.73E-02	4.1%	43.3%
6	RL-T107	2.14E+03	7.22E-02	3.9%	47.1%
7	IN-ICP-005	1.30E+03	3.73E-02	2.3%	49.5%
8	WP-RF003.01	1.19E+03	1.06E+00	2.1%	51.6%
9	WP-RF006.01	1.07E+03	1.01E+00	1.9%	53.6%
10	IN-ICP-003	9.44E+02	3.74E-02	1.7%	55.3%
11	LL-T002	9.09E+02	1.26E-01	1.6%	56.9%
12	OR-W201	8.92E+02	2.15E+00	1.6%	58.5%
13	RF-MT420P	8.51E+02	1.10E+00	1.5%	60.1%
14	RF-MT0091	7.92E+02	1.11E+00	1.4%	61.5%
15	IN-W216.98	7.74E+02	1.26E-02	1.4%	62.9%
16	T001-221H-HET	7.21E+02	3.85E-02	1.3%	64.2%
17	WP-RF005.01	6.22E+02	1.07E+00	1.1%	65.3%
18	RL-T140	6.04E+02	9.11E-01	1.1%	66.4%
19	RF-TT0802	5.87E+02	2.16E+00	1.1%	67.5%
20	W027-221F-HET	5.65E+02	3.86E-02	1.0%	68.5%
21	RL-T137	5.63E+02	7.73E-01	1.0%	69.6%
22	RF-MT-0299	5.57E+02	3.73E+00	1.0%	70.6%
23	RF-MT532C	4.86E+02	4.09E-01	0.9%	71.4%
24	RF-TT0338	4.56E+02	6.64E-01	0.8%	72.3%
25	RL-T132	3.69E+02	2.68E+00	0.7%	72.9%
26	WP-RF005.02	3.69E+02	9.81E-01	0.7%	73.6%
27	RF-TT392P	3.69E+02	1.18E+00	0.7%	74.3%
28	RF-TT398R	3.67E+02	1.09E+00	0.7%	74.9%
29	T001-221F-HET	3.65E+02	3.87E-02	0.7%	75.6%
30	RF-TT3011	3.63E+02	4.29E-02	0.7%	76.3%
31	IN-W309.609	3.38E+02	9.11E-03	0.6%	76.9%
32	WP-INW211.001	3.33E+02	2.42E-01	0.6%	77.5%
33	RF-TT0824	3.24E+02	6.58E-02	0.6%	78.1%
34	WP-RF008.01	3.17E+02	8.26E-01	0.6%	78.6%
35	RF-TT0312	2.99E+02	1.07E+00	0.5%	79.2%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	5.52E+04	N/A	100.0%	N/A

Table 4.9-9. WIPP CH-TRU Waste Streams by Curies (²⁴⁰Pu); Time 7,500
(Calendar Year = 9533)

Rank Order	Waste Stream ID	Curies (²⁴⁰ Pu)			
		²⁴⁰ Pu	²⁴⁰ Pu /drum	% of Total	Cum. %
1	WP-RF118.01	5.18E+03	8.46E-01	12.2%	12.2%
2	WP-RF009.01	5.13E+03	8.22E-01	12.1%	24.3%
3	IN-BN-510	3.24E+03	3.39E-02	7.7%	32.0%
4	RL-W513	3.06E+03	1.01E-01	7.2%	39.2%
5	IN-ICP-002	1.71E+03	2.86E-02	4.0%	43.3%
6	RL-T107	1.64E+03	5.54E-02	3.9%	47.1%
7	IN-ICP-005	9.94E+02	2.86E-02	2.3%	49.5%
8	WP-RF003.01	9.09E+02	8.15E-01	2.1%	51.6%
9	WP-RF006.01	8.19E+02	7.72E-01	1.9%	53.6%
10	IN-ICP-003	7.24E+02	2.87E-02	1.7%	55.3%
11	LL-T002	6.97E+02	9.63E-02	1.6%	56.9%
12	OR-W201	6.84E+02	1.65E+00	1.6%	58.5%
13	RF-MT420P	6.52E+02	8.44E-01	1.5%	60.1%
14	RF-MT0091	6.07E+02	8.50E-01	1.4%	61.5%
15	IN-W216.98	5.94E+02	9.70E-03	1.4%	62.9%
16	T001-221H-HET	5.53E+02	2.96E-02	1.3%	64.2%
17	WP-RF005.01	4.77E+02	8.24E-01	1.1%	65.4%
18	RL-T140	4.64E+02	6.99E-01	1.1%	66.4%
19	RF-TT0802	4.50E+02	1.66E+00	1.1%	67.5%
20	W027-221F-HET	4.34E+02	2.96E-02	1.0%	68.5%
21	RL-T137	4.32E+02	5.93E-01	1.0%	69.6%
22	RF-MT-0299	4.28E+02	2.87E+00	1.0%	70.6%
23	RF-MT532C	3.73E+02	3.13E-01	0.9%	71.4%
24	RF-TT0338	3.50E+02	5.09E-01	0.8%	72.3%
25	RL-T132	2.83E+02	2.05E+00	0.7%	72.9%
26	WP-RF005.02	2.83E+02	7.52E-01	0.7%	73.6%
27	RF-TT392P	2.83E+02	9.03E-01	0.7%	74.3%
28	RF-TT398R	2.82E+02	8.40E-01	0.7%	74.9%
29	T001-221F-HET	2.80E+02	2.97E-02	0.7%	75.6%
30	RF-TT3011	2.79E+02	3.29E-02	0.7%	76.3%
31	IN-W309.609	2.60E+02	6.99E-03	0.6%	76.9%
32	WP-INW211.001	2.56E+02	1.86E-01	0.6%	77.5%
33	RF-TT0824	2.48E+02	5.04E-02	0.6%	78.1%
34	WP-RF008.01	2.43E+02	6.33E-01	0.6%	78.6%
35	RF-TT0312	2.30E+02	8.25E-01	0.5%	79.2%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	4.23E+04	N/A	100.0%	N/A

Table 4.9-10. WIPP CH-TRU Waste Streams by Curies (²⁴⁰Pu); Time 10,000
(Calendar Year = 12033)

Rank Order	Waste Stream ID	Curies (²⁴⁰ Pu)			
		²⁴⁰ Pu	²⁴⁰ Pu /drum	% of Total	Cum. %
1	WP-RF118.01	3.97E+03	6.49E-01	12.2%	12.2%
2	WP-RF009.01	3.94E+03	6.31E-01	12.1%	24.3%
3	IN-BN-510	2.49E+03	2.60E-02	7.7%	32.0%
4	RL-W513	2.34E+03	7.79E-02	7.2%	39.2%
5	IN-ICP-002	1.32E+03	2.19E-02	4.0%	43.3%
6	RL-T107	1.26E+03	4.25E-02	3.9%	47.1%
7	IN-ICP-005	7.63E+02	2.19E-02	2.3%	49.5%
8	WP-RF003.01	6.97E+02	6.25E-01	2.1%	51.6%
9	WP-RF006.01	6.28E+02	5.92E-01	1.9%	53.6%
10	IN-ICP-003	5.56E+02	2.20E-02	1.7%	55.3%
11	LL-T002	5.35E+02	7.39E-02	1.6%	56.9%
12	OR-W201	5.25E+02	1.27E+00	1.6%	58.5%
13	RF-MT420P	5.01E+02	6.47E-01	1.5%	60.1%
14	RF-MT0091	4.66E+02	6.52E-01	1.4%	61.5%
15	IN-W216.98	4.56E+02	7.44E-03	1.4%	62.9%
16	T001-221H-HET	4.25E+02	2.27E-02	1.3%	64.2%
17	WP-RF005.01	3.66E+02	6.32E-01	1.1%	65.4%
18	RL-T140	3.56E+02	5.36E-01	1.1%	66.5%
19	RF-TT0802	3.45E+02	1.27E+00	1.1%	67.5%
20	W027-221F-HET	3.33E+02	2.27E-02	1.0%	68.5%
21	RL-T137	3.31E+02	4.55E-01	1.0%	69.6%
22	RF-MT-0299	3.28E+02	2.20E+00	1.0%	70.6%
23	RF-MT532C	2.86E+02	2.40E-01	0.9%	71.5%
24	RF-TT0338	2.68E+02	3.91E-01	0.8%	72.3%
25	RL-T132	2.17E+02	1.57E+00	0.7%	72.9%
26	WP-RF005.02	2.17E+02	5.77E-01	0.7%	73.6%
27	RF-TT392P	2.17E+02	6.93E-01	0.7%	74.3%
28	RF-TT398R	2.16E+02	6.44E-01	0.7%	74.9%
29	T001-221F-HET	2.15E+02	2.28E-02	0.7%	75.6%
30	RF-TT3011	2.14E+02	2.52E-02	0.7%	76.3%
31	IN-W309.609	1.99E+02	5.36E-03	0.6%	76.9%
32	WP-INW211.001	1.96E+02	1.43E-01	0.6%	77.5%
33	RF-TT0824	1.91E+02	3.87E-02	0.6%	78.1%
34	WP-RF008.01	1.87E+02	4.86E-01	0.6%	78.6%
35	RF-TT0312	1.76E+02	6.32E-01	0.5%	79.2%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	3.25E+04	N/A	100.0%	N/A

4.10 CURIES ²⁴¹Pu

²⁴¹Pu, a radioactive isotope of Plutonium with a half-life of 14.35 years, is not a key radionuclide. The non-transuranic ²⁴¹Pu contributes indirectly by beta decaying to ²⁴¹Am (see Section 4.5). The isotope diminishes over time as it decays until time interval 5,000 years (year 7033), at which time it contributes little activity (Table 4.10-8).

The ²⁴¹Pu curie values in Table 4.10-1 through Table 4.10-10 were sorted to illustrate the primary waste stream contributors to ²⁴¹Pu activity over the entire population of waste. Each table identifies the 35 waste streams that offer the greatest contribution during each of the ten time intervals output by the code EPAUNI. All 690 waste streams and their total ²⁴¹Pu curies can be found in the file EPU_CRA1BC_CH_ACTIVITY.DIA in the CRA library CRA1BC_EPU.

Thirty five waste streams contribute more than 83% of all ²⁴¹Pu curies in the repository at closure (see Table 4.10-1). Because of the short half-life of ²⁴¹Pu, the relative contribution of each of the 35 waste streams changes little until time interval 5,000 years, at which time it is no longer present (see Table 4.10-8).

Table 4.10-1. WIPP CH-TRU Waste Streams by Curies (²⁴¹Pu); Time 0
(Calendar Year = 2033)

Rank Order	Waste Stream ID	Curies (²⁴¹ Pu)			
		²⁴¹ Pu	²⁴¹ Pu /drum	% of Total	Cum. %
1	RL-W575	7.74E+04	5.67E+01	18.4%	18.4%
2	RL-W513	5.57E+04	1.85E+00	13.3%	31.7%
3	WP-RF118.01	3.64E+04	5.96E+00	8.7%	40.4%
4	WP-RF009.01	1.98E+04	3.18E+00	4.7%	45.1%
5	IN-BN-510	1.91E+04	2.00E-01	4.5%	49.6%
6	RL-T107	1.57E+04	5.31E-01	3.7%	53.4%
7	OR-W201	1.34E+04	3.24E+01	3.2%	56.6%
8	RL-W574	1.23E+04	3.14E+01	2.9%	59.5%
9	LL-T002	1.02E+04	1.41E+00	2.4%	61.9%
10	RL-W753	7.24E+03	1.24E+02	1.7%	63.6%
11	T001-221H-HET	7.22E+03	3.86E-01	1.7%	65.4%
12	RL-W665	6.77E+03	1.65E+02	1.6%	67.0%
13	RL-W576	5.81E+03	2.94E+01	1.4%	68.4%
14	WP-RF003.01	5.06E+03	4.53E+00	1.2%	69.6%
15	RL-T137	4.99E+03	6.86E+00	1.2%	70.8%
16	RL-W656	4.80E+03	3.20E+02	1.1%	71.9%
17	RL-T140	4.24E+03	6.40E+00	1.0%	72.9%
18	T001-221F-HET	3.64E+03	3.86E-01	0.9%	73.8%
19	RF-TT0802	3.09E+03	1.14E+01	0.7%	74.5%
20	RF-MT-0299	2.94E+03	1.97E+01	0.7%	75.2%
21	IN-W216.98	2.83E+03	4.62E-02	0.7%	75.9%
22	RL-W573	2.83E+03	3.93E+01	0.7%	76.6%
23	RL-T132	2.72E+03	1.97E+01	0.6%	77.2%
24	T001-772F-HET	2.72E+03	3.86E-01	0.6%	77.9%
25	WP-RF006.01	2.61E+03	2.46E+00	0.6%	78.5%
26	RF-MT532C	2.49E+03	2.09E+00	0.6%	79.1%
27	RL-T125	2.42E+03	3.32E+01	0.6%	79.6%
28	W027-221F-HET	2.38E+03	1.62E-01	0.6%	80.2%
29	RL-W657	2.12E+03	2.98E+01	0.5%	80.7%
30	WP-RF005.01	2.01E+03	3.48E+00	0.5%	81.2%
31	RF-MT0091	2.00E+03	2.80E+00	0.5%	81.7%
32	RF-TT3011	1.91E+03	2.25E-01	0.5%	82.1%
33	RF-MT420P	1.78E+03	2.30E+00	0.4%	82.5%
34	WP-RF008.01	1.73E+03	4.49E+00	0.4%	83.0%
35	RL-W568	1.63E+03	9.07E+01	0.4%	83.3%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	4.20E+05	N/A	100.0%	N/A

Table 4.10-2. WIPP CH-TRU Waste Streams by Curies (²⁴¹Pu); Time 100
(Calendar Year = 2133)

Rank Order	Waste Stream ID	Curies (²⁴¹ Pu)			
		²⁴¹ Pu	²⁴¹ Pu /drum	% of Total	Cum. %
1	RL-W575	6.28E+02	4.60E-01	18.4%	18.4%
2	RL-W513	4.52E+02	1.50E-02	13.3%	31.7%
3	WP-RF118.01	2.96E+02	4.83E-02	8.7%	40.4%
4	WP-RF009.01	1.61E+02	2.58E-02	4.7%	45.1%
5	IN-BN-510	1.55E+02	1.62E-03	4.5%	49.6%
6	RL-T107	1.28E+02	4.31E-03	3.7%	53.3%
7	OR-W201	1.09E+02	2.63E-01	3.2%	56.5%
8	RL-W574	1.00E+02	2.55E-01	2.9%	59.5%
9	LL-T002	8.30E+01	1.15E-02	2.4%	61.9%
10	RL-W753	5.88E+01	1.01E+00	1.7%	63.6%
11	T001-221H-HET	5.86E+01	3.13E-03	1.7%	65.4%
12	RL-W665	5.50E+01	1.34E+00	1.6%	67.0%
13	RL-W576	4.71E+01	2.39E-01	1.4%	68.3%
14	WP-RF003.01	4.11E+01	3.68E-02	1.2%	69.6%
15	RL-T137	4.05E+01	5.57E-02	1.2%	70.7%
16	RL-W656	3.90E+01	2.60E+00	1.1%	71.9%
17	RL-T140	3.44E+01	5.19E-02	1.0%	72.9%
18	T001-221F-HET	2.96E+01	3.13E-03	0.9%	73.8%
19	RF-TT0802	2.51E+01	9.24E-02	0.7%	74.5%
20	RF-MT-0299	2.38E+01	1.60E-01	0.7%	75.2%
21	IN-W216.98	2.30E+01	3.75E-04	0.7%	75.9%
22	RL-W573	2.30E+01	3.19E-01	0.7%	76.5%
23	RL-T132	2.21E+01	1.60E-01	0.6%	77.2%
24	T001-772F-HET	2.21E+01	3.13E-03	0.6%	77.8%
25	WP-RF006.01	2.12E+01	2.00E-02	0.6%	78.5%
26	RF-MT532C	2.02E+01	1.70E-02	0.6%	79.1%
27	RL-T125	1.97E+01	2.70E-01	0.6%	79.6%
28	W027-221F-HET	1.93E+01	1.32E-03	0.6%	80.2%
29	RL-W657	1.72E+01	2.42E-01	0.5%	80.7%
30	WP-RF005.01	1.64E+01	2.82E-02	0.5%	81.2%
31	RF-MT0091	1.62E+01	2.27E-02	0.5%	81.7%
32	RF-TT3011	1.55E+01	1.83E-03	0.5%	82.1%
33	RF-MT420P	1.44E+01	1.87E-02	0.4%	82.5%
34	WP-RF008.01	1.40E+01	3.64E-02	0.4%	82.9%
35	RL-W568	1.32E+01	7.36E-01	0.4%	83.3%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	3.41E+03	N/A	100.0%	N/A

Table 4.10-3. WIPP CH-TRU Waste Streams by Curies (²⁴¹Pu); Time 125
(Calendar Year = 2158)

Rank Order	Waste Stream ID	Curies (²⁴¹ Pu)			
		²⁴¹ Pu	²⁴¹ Pu /drum	% of Total	Cum. %
1	RL-W575	1.89E+02	1.38E-01	18.4%	18.4%
2	RL-W513	1.36E+02	4.51E-03	13.3%	31.7%
3	WP-RF118.01	8.88E+01	1.45E-02	8.7%	40.4%
4	WP-RF009.01	4.83E+01	7.74E-03	4.7%	45.1%
5	IN-BN-510	4.64E+01	4.86E-04	4.5%	49.6%
6	RL-T107	3.83E+01	1.29E-03	3.7%	53.4%
7	OR-W201	3.27E+01	7.89E-02	3.2%	56.6%
8	RL-W574	3.01E+01	7.65E-02	2.9%	59.5%
9	LL-T002	2.49E+01	3.44E-03	2.4%	62.0%
10	RL-W753	1.77E+01	3.02E-01	1.7%	63.7%
11	T001-221H-HET	1.76E+01	9.40E-04	1.7%	65.4%
12	RL-W665	1.65E+01	4.03E-01	1.6%	67.0%
13	RL-W576	1.42E+01	7.17E-02	1.4%	68.4%
14	WP-RF003.01	1.23E+01	1.10E-02	1.2%	69.6%
15	RL-T137	1.22E+01	1.67E-02	1.2%	70.8%
16	RL-W656	1.17E+01	7.81E-01	1.1%	71.9%
17	RL-T140	1.03E+01	1.56E-02	1.0%	72.9%
18	T001-221F-HET	8.88E+00	9.41E-04	0.9%	73.8%
19	RF-TT0802	7.52E+00	2.77E-02	0.7%	74.5%
20	RF-MT-0299	7.15E+00	4.80E-02	0.7%	75.2%
21	IN-W216.98	6.89E+00	1.13E-04	0.7%	75.9%
22	RL-W573	6.89E+00	9.58E-02	0.7%	76.6%
23	RL-T132	6.63E+00	4.81E-02	0.6%	77.2%
24	T001-772F-HET	6.63E+00	9.40E-04	0.6%	77.9%
25	WP-RF006.01	6.37E+00	6.00E-03	0.6%	78.5%
26	RF-MT532C	6.06E+00	5.10E-03	0.6%	79.1%
27	RL-T125	5.90E+00	8.09E-02	0.6%	79.7%
28	W027-221F-HET	5.80E+00	3.95E-04	0.6%	80.2%
29	RL-W657	5.18E+00	7.25E-02	0.5%	80.8%
30	WP-RF005.01	4.91E+00	8.48E-03	0.5%	81.2%
31	RF-MT0091	4.87E+00	6.82E-03	0.5%	81.7%
32	RF-TT3011	4.64E+00	5.48E-04	0.5%	82.2%
33	RF-MT420P	4.33E+00	5.61E-03	0.4%	82.6%
34	WP-RF008.01	4.20E+00	1.09E-02	0.4%	83.0%
35	RL-W568	3.97E+00	2.21E-01	0.4%	83.4%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	1.02E+03	N/A	100.0%	N/A

Table 4.10-4. WIPP CH-TRU Waste Streams by Curies (²⁴¹Pu); Time 175
(Calendar Year = 2208)

Rank Order	Waste Stream ID	Curies (²⁴¹ Pu)			
		²⁴¹ Pu	²⁴¹ Pu /drum	% of Total	Cum. %
1	RL-W575	1.70E+01	1.24E-02	18.4%	18.4%
2	RL-W513	1.22E+01	4.06E-04	13.3%	31.7%
3	WP-RF118.01	8.00E+00	1.31E-03	8.7%	40.4%
4	WP-RF009.01	4.35E+00	6.97E-04	4.7%	45.1%
5	IN-BN-510	4.18E+00	4.38E-05	4.5%	49.6%
6	RL-T107	3.45E+00	1.17E-04	3.7%	53.3%
7	OR-W201	2.95E+00	7.11E-03	3.2%	56.5%
8	RL-W574	2.71E+00	6.89E-03	2.9%	59.5%
9	LL-T002	2.24E+00	3.10E-04	2.4%	61.9%
10	RL-W753	1.59E+00	2.72E-02	1.7%	63.6%
11	T001-221H-HET	1.59E+00	8.47E-05	1.7%	65.4%
12	RL-W665	1.49E+00	3.63E-02	1.6%	67.0%
13	RL-W576	1.28E+00	6.46E-03	1.4%	68.4%
14	WP-RF003.01	1.11E+00	9.95E-04	1.2%	69.6%
15	RL-T137	1.10E+00	1.50E-03	1.2%	70.7%
16	RL-W656	1.05E+00	7.03E-02	1.1%	71.9%
17	RL-T140	9.32E-01	1.40E-03	1.0%	72.9%
18	T001-221F-HET	8.00E-01	8.48E-05	0.9%	73.8%
19	RF-TT0802	6.78E-01	2.50E-03	0.7%	74.5%
20	RF-MT-0299	6.45E-01	4.32E-03	0.7%	75.2%
21	IN-W216.98	6.21E-01	1.01E-05	0.7%	75.9%
22	RL-W573	6.21E-01	8.63E-03	0.7%	76.5%
23	RL-T132	5.98E-01	4.33E-03	0.6%	77.2%
24	T001-772F-HET	5.98E-01	8.47E-05	0.6%	77.8%
25	WP-RF006.01	5.74E-01	5.41E-04	0.6%	78.5%
26	RF-MT532C	5.46E-01	4.59E-04	0.6%	79.1%
27	RL-T125	5.32E-01	7.29E-03	0.6%	79.6%
28	W027-221F-HET	5.22E-01	3.56E-05	0.6%	80.2%
29	RL-W657	4.66E-01	6.53E-03	0.5%	80.7%
30	WP-RF005.01	4.42E-01	7.64E-04	0.5%	81.2%
31	RF-MT0091	4.39E-01	6.14E-04	0.5%	81.7%
32	RF-TT3011	4.18E-01	4.94E-05	0.5%	82.1%
33	RF-MT420P	3.91E-01	5.05E-04	0.4%	82.5%
34	WP-RF008.01	3.79E-01	9.85E-04	0.4%	82.9%
35	RL-W568	3.58E-01	1.99E-02	0.4%	83.3%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	9.22E+01	N/A	100.0%	N/A

Table 4.10-5. WIPP CH-TRU Waste Streams by Curies (²⁴¹Pu); Time 350
(Calendar Year = 2383)

Rank Order	Waste Stream ID	Curies (²⁴¹ Pu)			
		²⁴¹ Pu	²⁴¹ Pu /drum	% of Total	Cum. %
1	RL-W575	3.73E-03	2.73E-06	18.4%	18.4%
2	RL-W513	2.69E-03	8.92E-08	13.3%	31.7%
3	WP-RF118.01	1.76E-03	2.87E-07	8.7%	40.4%
4	WP-RF009.01	9.55E-04	1.53E-07	4.7%	45.1%
5	IN-BN-510	9.18E-04	9.62E-09	4.5%	49.6%
6	RL-T107	7.57E-04	2.56E-08	3.7%	53.4%
7	OR-W201	6.47E-04	1.56E-06	3.2%	56.6%
8	RL-W574	5.95E-04	1.51E-06	2.9%	59.5%
9	LL-T002	4.93E-04	6.80E-08	2.4%	61.9%
10	RL-W753	3.49E-04	5.98E-06	1.7%	63.7%
11	T001-221H-HET	3.48E-04	1.86E-08	1.7%	65.4%
12	RL-W665	3.26E-04	7.97E-06	1.6%	67.0%
13	RL-W576	2.80E-04	1.42E-06	1.4%	68.4%
14	WP-RF003.01	2.44E-04	2.19E-07	1.2%	69.6%
15	RL-T137	2.41E-04	3.31E-07	1.2%	70.8%
16	RL-W656	2.31E-04	1.54E-05	1.1%	71.9%
17	RL-T140	2.05E-04	3.08E-07	1.0%	72.9%
18	T001-221F-HET	1.76E-04	1.86E-08	0.9%	73.8%
19	RF-TT0802	1.49E-04	5.49E-07	0.7%	74.5%
20	RF-MT-0299	1.42E-04	9.48E-07	0.7%	75.2%
21	IN-W216.98	1.36E-04	2.23E-09	0.7%	75.9%
22	RL-W573	1.36E-04	1.89E-06	0.7%	76.6%
23	RL-T132	1.31E-04	9.52E-07	0.6%	77.2%
24	T001-772F-HET	1.31E-04	1.86E-08	0.6%	77.9%
25	WP-RF006.01	1.26E-04	1.19E-07	0.6%	78.5%
26	RF-MT532C	1.20E-04	1.01E-07	0.6%	79.1%
27	RL-T125	1.17E-04	1.60E-06	0.6%	79.7%
28	W027-221F-HET	1.15E-04	7.82E-09	0.6%	80.2%
29	RL-W657	1.02E-04	1.43E-06	0.5%	80.7%
30	WP-RF005.01	9.71E-05	1.68E-07	0.5%	81.2%
31	RF-MT0091	9.64E-05	1.35E-07	0.5%	81.7%
32	RF-TT3011	9.18E-05	1.08E-08	0.5%	82.1%
33	RF-MT420P	8.57E-05	1.11E-07	0.4%	82.6%
34	WP-RF008.01	8.32E-05	2.16E-07	0.4%	83.0%
35	RL-W568	7.85E-05	4.37E-06	0.4%	83.4%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	2.02E-02	N/A	100.0%	N/A

Table 4.10-6. WIPP CH-TRU Waste Streams by Curies (²⁴¹Pu); Time 1,000
(Calendar Year = 3033)

Rank Order	Waste Stream ID	Curies (²⁴¹ Pu)			
		²⁴¹ Pu	²⁴¹ Pu /drum	% of Total	Cum. %
1	RL-W575	9.61E-17	7.05E-20	18.4%	18.4%
2	RL-W513	6.92E-17	2.30E-21	13.3%	31.7%
3	WP-RF118.01	4.53E-17	7.40E-21	8.7%	40.4%
4	WP-RF009.01	2.46E-17	3.95E-21	4.7%	45.1%
5	IN-BN-510	2.37E-17	2.48E-22	4.5%	49.6%
6	RL-T107	1.95E-17	6.60E-22	3.7%	53.3%
7	OR-W201	1.67E-17	4.02E-20	3.2%	56.5%
8	RL-W574	1.53E-17	3.90E-20	2.9%	59.5%
9	LL-T002	1.27E-17	1.75E-21	2.4%	61.9%
10	RL-W753	9.00E-18	1.54E-19	1.7%	63.6%
11	T001-221H-HET	8.97E-18	4.79E-22	1.7%	65.4%
12	RL-W665	8.42E-18	2.05E-19	1.6%	67.0%
13	RL-W576	7.22E-18	3.66E-20	1.4%	68.4%
14	WP-RF003.01	6.29E-18	5.63E-21	1.2%	69.6%
15	RL-T137	6.21E-18	8.52E-21	1.2%	70.7%
16	RL-W656	5.97E-18	3.98E-19	1.1%	71.9%
17	RL-T140	5.27E-18	7.95E-21	1.0%	72.9%
18	T001-221F-HET	4.53E-18	4.80E-22	0.9%	73.8%
19	RF-TT0802	3.84E-18	1.41E-20	0.7%	74.5%
20	RF-MT-0299	3.65E-18	2.45E-20	0.7%	75.2%
21	IN-W216.98	3.52E-18	5.74E-23	0.7%	75.9%
22	RL-W573	3.52E-18	4.89E-20	0.7%	76.5%
23	RL-T132	3.38E-18	2.45E-20	0.6%	77.2%
24	T001-772F-HET	3.38E-18	4.80E-22	0.6%	77.8%
25	WP-RF006.01	3.25E-18	3.06E-21	0.6%	78.5%
26	RF-MT532C	3.09E-18	2.60E-21	0.6%	79.1%
27	RL-T125	3.01E-18	4.13E-20	0.6%	79.6%
28	W027-221F-HET	2.96E-18	2.02E-22	0.6%	80.2%
29	RL-W657	2.64E-18	3.70E-20	0.5%	80.7%
30	WP-RF005.01	2.50E-18	4.32E-21	0.5%	81.2%
31	RF-MT0091	2.49E-18	3.48E-21	0.5%	81.7%
32	RF-TT3011	2.37E-18	2.79E-22	0.5%	82.1%
33	RF-MT420P	2.21E-18	2.86E-21	0.4%	82.5%
34	WP-RF008.01	2.14E-18	5.58E-21	0.4%	82.9%
35	RL-W568	2.02E-18	1.13E-19	0.4%	83.3%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	5.22E-16	N/A	100.0%	N/A

Table 4.10-7. WIPP CH-TRU Waste Streams by Curies (²⁴¹Pu); Time 3,000
(Calendar Year = 5033)

Rank Order	Waste Stream ID	Curies (²⁴¹ Pu)			
		²⁴¹ Pu	²⁴¹ Pu /drum	% of Total	Cum. %
1	RL-W575	1.49E-58	1.09E-61	18.4%	18.4%
2	RL-W513	1.07E-58	3.55E-63	13.3%	31.7%
3	WP-RF118.01	6.99E-59	1.14E-62	8.7%	40.4%
4	WP-RF009.01	3.80E-59	6.10E-63	4.7%	45.1%
5	IN-BN-510	3.66E-59	3.83E-64	4.5%	49.6%
6	RL-T107	3.01E-59	1.02E-63	3.7%	53.4%
7	OR-W201	2.57E-59	6.21E-62	3.2%	56.5%
8	RL-W574	2.37E-59	6.02E-62	2.9%	59.5%
9	LL-T002	1.96E-59	2.71E-63	2.4%	61.9%
10	RL-W753	1.39E-59	2.38E-61	1.7%	63.6%
11	T001-221H-HET	1.39E-59	7.40E-64	1.7%	65.4%
12	RL-W665	1.30E-59	3.17E-61	1.6%	67.0%
13	RL-W576	1.11E-59	5.65E-62	1.4%	68.4%
14	WP-RF003.01	9.71E-60	8.70E-63	1.2%	69.6%
15	RL-T137	9.58E-60	1.32E-62	1.2%	70.8%
16	RL-W656	9.21E-60	6.15E-61	1.1%	71.9%
17	RL-T140	8.14E-60	1.23E-62	1.0%	72.9%
18	T001-221F-HET	6.99E-60	7.41E-64	0.9%	73.8%
19	RF-TT0802	5.92E-60	2.18E-62	0.7%	74.5%
20	RF-MT-0299	5.63E-60	3.78E-62	0.7%	75.2%
21	IN-W216.98	5.43E-60	8.87E-65	0.7%	75.9%
22	RL-W573	5.43E-60	7.54E-62	0.7%	76.6%
23	RL-T132	5.22E-60	3.79E-62	0.6%	77.2%
24	T001-772F-HET	5.22E-60	7.41E-64	0.6%	77.9%
25	WP-RF006.01	5.02E-60	4.73E-63	0.6%	78.5%
26	RF-MT532C	4.77E-60	4.01E-63	0.6%	79.1%
27	RL-T125	4.65E-60	6.37E-62	0.6%	79.6%
28	W027-221F-HET	4.57E-60	3.11E-64	0.6%	80.2%
29	RL-W657	4.08E-60	5.71E-62	0.5%	80.7%
30	WP-RF005.01	3.87E-60	6.68E-63	0.5%	81.2%
31	RF-MT0091	3.84E-60	5.37E-63	0.5%	81.7%
32	RF-TT3011	3.66E-60	4.32E-64	0.5%	82.1%
33	RF-MT420P	3.41E-60	4.42E-63	0.4%	82.5%
34	WP-RF008.01	3.31E-60	8.61E-63	0.4%	83.0%
35	RL-W568	3.13E-60	1.74E-61	0.4%	83.3%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	8.06E-58	N/A	100.0%	N/A

Table 4.10-8. WIPP CH-TRU Waste Streams by Curies (²⁴¹Pu); Time 5,000
(Calendar Year = 7033)

Rank Order	Waste Stream ID	Curies (²⁴¹ Pu)			
		²⁴¹ Pu	²⁴¹ Pu /drum	% of Total	Cum. %
1	RL-W575	0.00E+00	0.00E+00	0.0%	0.0%
2	RL-W513	0.00E+00	0.00E+00	0.0%	0.0%
3	WP-RF118.01	0.00E+00	0.00E+00	0.0%	0.0%
4	WP-RF009.01	0.00E+00	0.00E+00	0.0%	0.0%
5	IN-BN-510	0.00E+00	0.00E+00	0.0%	0.0%
6	RL-T107	0.00E+00	0.00E+00	0.0%	0.0%
7	OR-W201	0.00E+00	0.00E+00	0.0%	0.0%
8	RL-W574	0.00E+00	0.00E+00	0.0%	0.0%
9	LL-T002	0.00E+00	0.00E+00	0.0%	0.0%
10	RL-W753	0.00E+00	0.00E+00	0.0%	0.0%
11	T001-221H-HET	0.00E+00	0.00E+00	0.0%	0.0%
12	RL-W665	0.00E+00	0.00E+00	0.0%	0.0%
13	RL-W576	0.00E+00	0.00E+00	0.0%	0.0%
14	WP-RF003.01	0.00E+00	0.00E+00	0.0%	0.0%
15	RL-T137	0.00E+00	0.00E+00	0.0%	0.0%
16	RL-W656	0.00E+00	0.00E+00	0.0%	0.0%
17	RL-T140	0.00E+00	0.00E+00	0.0%	0.0%
18	T001-221F-HET	0.00E+00	0.00E+00	0.0%	0.0%
19	RF-TT0802	0.00E+00	0.00E+00	0.0%	0.0%
20	RF-MT-0299	0.00E+00	0.00E+00	0.0%	0.0%
21	IN-W216.98	0.00E+00	0.00E+00	0.0%	0.0%
22	RL-W573	0.00E+00	0.00E+00	0.0%	0.0%
23	RL-T132	0.00E+00	0.00E+00	0.0%	0.0%
24	T001-772F-HET	0.00E+00	0.00E+00	0.0%	0.0%
25	WP-RF006.01	0.00E+00	0.00E+00	0.0%	0.0%
26	RF-MT532C	0.00E+00	0.00E+00	0.0%	0.0%
27	RL-T125	0.00E+00	0.00E+00	0.0%	0.0%
28	W027-221F-HET	0.00E+00	0.00E+00	0.0%	0.0%
29	RL-W657	0.00E+00	0.00E+00	0.0%	0.0%
30	WP-RF005.01	0.00E+00	0.00E+00	0.0%	0.0%
31	RF-MT0091	0.00E+00	0.00E+00	0.0%	0.0%
32	RF-TT3011	0.00E+00	0.00E+00	0.0%	0.0%
33	RF-MT420P	0.00E+00	0.00E+00	0.0%	0.0%
34	WP-RF008.01	0.00E+00	0.00E+00	0.0%	0.0%
35	RL-W568	0.00E+00	0.00E+00	0.0%	0.0%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	0.0%
	Sum =	0.00E+00	N/A	0.0%	N/A

Table 4.10-9. WIPP CH-TRU Waste Streams by Curies (²⁴¹Pu); Time 7,500
(Calendar Year = 9533)

Rank Order	Waste Stream ID	Curies (²⁴¹ Pu)			
		²⁴¹ Pu	²⁴¹ Pu /drum	% of Total	Cum. %
1	RL-W575	0.00E+00	0.00E+00	0.0%	0.0%
2	RL-W513	0.00E+00	0.00E+00	0.0%	0.0%
3	WP-RF118.01	0.00E+00	0.00E+00	0.0%	0.0%
4	WP-RF009.01	0.00E+00	0.00E+00	0.0%	0.0%
5	IN-BN-510	0.00E+00	0.00E+00	0.0%	0.0%
6	RL-T107	0.00E+00	0.00E+00	0.0%	0.0%
7	OR-W201	0.00E+00	0.00E+00	0.0%	0.0%
8	RL-W574	0.00E+00	0.00E+00	0.0%	0.0%
9	LL-T002	0.00E+00	0.00E+00	0.0%	0.0%
10	RL-W753	0.00E+00	0.00E+00	0.0%	0.0%
11	T001-221H-HET	0.00E+00	0.00E+00	0.0%	0.0%
12	RL-W665	0.00E+00	0.00E+00	0.0%	0.0%
13	RL-W576	0.00E+00	0.00E+00	0.0%	0.0%
14	WP-RF003.01	0.00E+00	0.00E+00	0.0%	0.0%
15	RL-T137	0.00E+00	0.00E+00	0.0%	0.0%
16	RL-W656	0.00E+00	0.00E+00	0.0%	0.0%
17	RL-T140	0.00E+00	0.00E+00	0.0%	0.0%
18	T001-221F-HET	0.00E+00	0.00E+00	0.0%	0.0%
19	RF-TT0802	0.00E+00	0.00E+00	0.0%	0.0%
20	RF-MT-0299	0.00E+00	0.00E+00	0.0%	0.0%
21	IN-W216.98	0.00E+00	0.00E+00	0.0%	0.0%
22	RL-W573	0.00E+00	0.00E+00	0.0%	0.0%
23	RL-T132	0.00E+00	0.00E+00	0.0%	0.0%
24	T001-772F-HET	0.00E+00	0.00E+00	0.0%	0.0%
25	WP-RF006.01	0.00E+00	0.00E+00	0.0%	0.0%
26	RF-MT532C	0.00E+00	0.00E+00	0.0%	0.0%
27	RL-T125	0.00E+00	0.00E+00	0.0%	0.0%
28	W027-221F-HET	0.00E+00	0.00E+00	0.0%	0.0%
29	RL-W657	0.00E+00	0.00E+00	0.0%	0.0%
30	WP-RF005.01	0.00E+00	0.00E+00	0.0%	0.0%
31	RF-MT0091	0.00E+00	0.00E+00	0.0%	0.0%
32	RF-TT3011	0.00E+00	0.00E+00	0.0%	0.0%
33	RF-MT420P	0.00E+00	0.00E+00	0.0%	0.0%
34	WP-RF008.01	0.00E+00	0.00E+00	0.0%	0.0%
35	RL-W568	0.00E+00	0.00E+00	0.0%	0.0%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	0.0%
	Sum =	0.00E+00	N/A	0.0%	N/A

Table 4.10-10. WIPP CH-TRU Waste Streams by Curies (²⁴¹Pu); Time 10,000
(Calendar Year = 12033)

Rank Order	Waste Stream ID	Curies (²⁴¹ Pu)			
		²⁴¹ Pu	²⁴¹ Pu /drum	% of Total	Cum. %
1	RL-W575	0.00E+00	0.00E+00	0.0%	0.0%
2	RL-W513	0.00E+00	0.00E+00	0.0%	0.0%
3	WP-RF118.01	0.00E+00	0.00E+00	0.0%	0.0%
4	WP-RF009.01	0.00E+00	0.00E+00	0.0%	0.0%
5	IN-BN-510	0.00E+00	0.00E+00	0.0%	0.0%
6	RL-T107	0.00E+00	0.00E+00	0.0%	0.0%
7	OR-W201	0.00E+00	0.00E+00	0.0%	0.0%
8	RL-W574	0.00E+00	0.00E+00	0.0%	0.0%
9	LL-T002	0.00E+00	0.00E+00	0.0%	0.0%
10	RL-W753	0.00E+00	0.00E+00	0.0%	0.0%
11	T001-221H-HET	0.00E+00	0.00E+00	0.0%	0.0%
12	RL-W665	0.00E+00	0.00E+00	0.0%	0.0%
13	RL-W576	0.00E+00	0.00E+00	0.0%	0.0%
14	WP-RF003.01	0.00E+00	0.00E+00	0.0%	0.0%
15	RL-T137	0.00E+00	0.00E+00	0.0%	0.0%
16	RL-W656	0.00E+00	0.00E+00	0.0%	0.0%
17	RL-T140	0.00E+00	0.00E+00	0.0%	0.0%
18	T001-221F-HET	0.00E+00	0.00E+00	0.0%	0.0%
19	RF-TT0802	0.00E+00	0.00E+00	0.0%	0.0%
20	RF-MT-0299	0.00E+00	0.00E+00	0.0%	0.0%
21	IN-W216.98	0.00E+00	0.00E+00	0.0%	0.0%
22	RL-W573	0.00E+00	0.00E+00	0.0%	0.0%
23	RL-T132	0.00E+00	0.00E+00	0.0%	0.0%
24	T001-772F-HET	0.00E+00	0.00E+00	0.0%	0.0%
25	WP-RF006.01	0.00E+00	0.00E+00	0.0%	0.0%
26	RF-MT532C	0.00E+00	0.00E+00	0.0%	0.0%
27	RL-T125	0.00E+00	0.00E+00	0.0%	0.0%
28	W027-221F-HET	0.00E+00	0.00E+00	0.0%	0.0%
29	RL-W657	0.00E+00	0.00E+00	0.0%	0.0%
30	WP-RF005.01	0.00E+00	0.00E+00	0.0%	0.0%
31	RF-MT0091	0.00E+00	0.00E+00	0.0%	0.0%
32	RF-TT3011	0.00E+00	0.00E+00	0.0%	0.0%
33	RF-MT420P	0.00E+00	0.00E+00	0.0%	0.0%
34	WP-RF008.01	0.00E+00	0.00E+00	0.0%	0.0%
35	RL-W568	0.00E+00	0.00E+00	0.0%	0.0%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	0.0%
	Sum =	0.00E+00	N/A	0.0%	N/A

4.11 CURIES ²³⁴U

²³⁴U, a radioactive isotope of Uranium with a half-life of 245,500 years, is one of the key radionuclides that together contribute more than 99% of all radioactivity in the repository. ²³⁴U, which is found in waste streams both directly and as a result of the decay of ²³⁸Pu (see Section 4.7), does not diminish over time, remaining dominant 10,000 years (calendar year 12033) after closure (see Table 4.11-10).

The ²³⁴U curie values in Table 4.11-1 through Table 4.11-10 were sorted to illustrate the primary waste stream contributors to ²³⁴U activity over the entire population of waste. Each table identifies the 35 waste streams that offer the greatest contribution during each of the ten time intervals output by the code EPAUNI. All 690 waste streams and their total ²³⁴U curies can be found in the file EPU_CRA1BC_CH_ACTIVITY.DIA in the CRA library CRA1BC_EPU.

Almost 98% of all ²³⁴U curies at the time of closure is from 35 waste streams (see Table 4.11-1). The generation of ²³⁴U from the decay of ²³⁸Pu can be observed, for example, from a SRS waste stream, T001-221H-HET, (heterogeneous debris from job control waste, sludges, resins, filters and metal equipment) and a LANL waste stream, LA-OS-00-01 (sealed sources). At the time of closure, these two waste streams contribute 10.1% and 3.6% to ²³⁴U activity (Table 4.11-1). After 100 years (year 2133), their contribution to ²³⁴U activity increases to 13.7% for waste stream T001-221H-HET and 5.9% for waste stream LA-OS-00-01 (see Table 4.11-2).

Table 4.11-1. WIPP CH-TRU Waste Streams by Curies (²³⁴U); Time 0
(Calendar Year = 2033)

Rank Order	Waste Stream ID	Curies (²³⁴ U)			
		²³⁴ U	²³⁴ U /drum	% of Total	Cum. %
1	W027-221F-HET	3.27E+01	2.23E-03	10.5%	10.5%
2	T001-221H-HET	3.17E+01	1.69E-03	10.1%	20.6%
3	OR-W201	3.12E+01	7.52E-02	10.0%	30.5%
4	RL-T140	2.62E+01	3.95E-02	8.4%	38.9%
5	T001-221F-HET	1.60E+01	1.69E-03	5.1%	44.0%
6	IN-ICP-002	1.56E+01	2.61E-04	5.0%	49.0%
7	LA-TA-21-43	1.47E+01	1.21E-03	4.7%	53.7%
8	W027-221H-HET	1.43E+01	2.23E-03	4.6%	58.3%
9	RP-W755	1.26E+01	1.07E-03	4.0%	62.3%
10	T001-772F-HET	1.19E+01	1.69E-03	3.8%	66.1%
11	W027-773A-HET	1.17E+01	2.23E-03	3.7%	69.8%
12	LA-OS-00-01	1.11E+01	4.61E-02	3.6%	73.4%
13	W027-999-HET	9.50E+00	2.23E-03	3.0%	76.4%
14	IN-ICP-005	9.08E+00	2.61E-04	2.9%	79.3%
15	RL-T107	8.66E+00	2.93E-04	2.8%	82.1%
16	W027-772F-HET	7.82E+00	2.23E-03	2.5%	84.6%
17	IN-ICP-003	6.60E+00	2.61E-04	2.1%	86.7%
18	IN-BN-510	6.49E+00	6.80E-05	2.1%	88.8%
19	W026-221F-HET	6.39E+00	1.69E-03	2.0%	90.8%
20	W026-221H-HET	4.77E+00	1.69E-03	1.5%	92.3%
21	W027-235F-HET	4.31E+00	2.23E-03	1.4%	93.7%
22	T001-773A-HET	1.66E+00	1.70E-03	0.5%	94.2%
23	T001-235F-HET	1.51E+00	1.69E-03	0.5%	94.7%
24	RL-T122	1.46E+00	1.04E-02	0.5%	95.2%
25	IN-ICP-004	1.38E+00	2.65E-04	0.4%	95.6%
26	RL-T110	1.37E+00	5.75E-04	0.4%	96.1%
27	RL-W513	8.90E-01	2.96E-05	0.3%	96.3%
28	RL-T118	8.36E-01	6.64E-04	0.3%	96.6%
29	OR-W202	7.97E-01	3.97E-04	0.3%	96.9%
30	RL-T112	7.38E-01	1.12E-03	0.2%	97.1%
31	IN-W177.156	6.26E-01	1.62E-04	0.2%	97.3%
32	IN-W179.158	6.21E-01	6.48E-05	0.2%	97.5%
33	LA-TA-55-49	5.07E-01	5.76E-03	0.2%	97.7%
34	RL-T115	4.20E-01	8.52E-05	0.1%	97.8%
35	WP-RF118.01	4.11E-01	6.73E-05	0.1%	97.9%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	3.13E+02	N/A	100.0%	N/A

Table 4.11-2. WIPP CH-TRU Waste Streams by Curies (²³⁴U); Time 100
(Calendar Year = 2133)

Rank Order	Waste Stream ID	Curies (²³⁴ U)			
		²³⁴ U	²³⁴ U /drum	% of Total	Cum. %
1	T001-221H-HET	7.32E+01	3.91E-03	13.7%	13.7%
2	W027-221F-HET	6.10E+01	4.16E-03	11.4%	25.2%
3	T001-221F-HET	3.70E+01	3.92E-03	6.9%	32.1%
4	LA-OS-00-01	3.15E+01	1.31E-01	5.9%	38.0%
5	OR-W201	3.15E+01	7.60E-02	5.9%	43.9%
6	T001-772F-HET	2.76E+01	3.91E-03	5.2%	49.1%
7	W027-221H-HET	2.67E+01	4.16E-03	5.0%	54.1%
8	RL-T140	2.63E+01	3.96E-02	4.9%	59.0%
9	RL-T107	2.35E+01	7.94E-04	4.4%	63.4%
10	W027-773A-HET	2.17E+01	4.16E-03	4.1%	67.5%
11	W027-999-HET	1.77E+01	4.16E-03	3.3%	70.8%
12	IN-ICP-002	1.61E+01	2.68E-04	3.0%	73.8%
13	IN-BN-510	1.48E+01	1.55E-04	2.8%	76.6%
14	W026-221F-HET	1.48E+01	3.91E-03	2.8%	79.3%
15	LA-TA-21-43	1.47E+01	1.21E-03	2.8%	82.1%
16	W027-772F-HET	1.46E+01	4.16E-03	2.7%	84.8%
17	RP-W755	1.26E+01	1.07E-03	2.4%	87.2%
18	W026-221H-HET	1.10E+01	3.91E-03	2.1%	89.3%
19	IN-ICP-005	9.34E+00	2.68E-04	1.7%	91.0%
20	W027-235F-HET	8.02E+00	4.16E-03	1.5%	92.5%
21	IN-ICP-003	6.79E+00	2.69E-04	1.3%	93.8%
22	T001-773A-HET	3.83E+00	3.93E-03	0.7%	94.5%
23	T001-235F-HET	3.48E+00	3.92E-03	0.7%	95.1%
24	RL-W513	2.58E+00	8.57E-05	0.5%	95.6%
25	OR-W202	1.70E+00	8.46E-04	0.3%	95.9%
26	RL-T122	1.46E+00	1.04E-02	0.3%	96.2%
27	IN-W177.156	1.43E+00	3.70E-04	0.3%	96.5%
28	IN-ICP-004	1.42E+00	2.72E-04	0.3%	96.8%
29	IN-W179.158	1.42E+00	1.48E-04	0.3%	97.0%
30	RL-T110	1.38E+00	5.79E-04	0.3%	97.3%
31	LA-TA-55-49	1.02E+00	1.15E-02	0.2%	97.5%
32	RL-T118	8.41E-01	6.68E-04	0.2%	97.6%
33	WP-RF118.01	7.84E-01	1.28E-04	0.1%	97.8%
34	W026-773A-HET	7.64E-01	3.91E-03	0.1%	97.9%
35	RL-T112	7.42E-01	1.12E-03	0.1%	98.1%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	5.34E+02	N/A	100.0%	N/A

Table 4.11-3. WIPP CH-TRU Waste Streams by Curies (²³⁴U); Time 125
(Calendar Year = 2158)

Rank Order	Waste Stream ID	Curies (²³⁴ U)			
		²³⁴ U	²³⁴ U /drum	% of Total	Cum. %
1	T001-221H-HET	7.94E+01	4.24E-03	14.0%	14.0%
2	W027-221F-HET	6.52E+01	4.45E-03	11.5%	25.5%
3	T001-221F-HET	4.01E+01	4.25E-03	7.1%	32.6%
4	LA-OS-00-01	3.46E+01	1.43E-01	6.1%	38.7%
5	OR-W201	3.15E+01	7.61E-02	5.6%	44.3%
6	T001-772F-HET	2.99E+01	4.25E-03	5.3%	49.6%
7	W027-221H-HET	2.85E+01	4.44E-03	5.0%	54.6%
8	RL-T140	2.63E+01	3.96E-02	4.6%	59.2%
9	RL-T107	2.57E+01	8.69E-04	4.5%	63.8%
10	W027-773A-HET	2.32E+01	4.44E-03	4.1%	67.9%
11	W027-999-HET	1.89E+01	4.44E-03	3.3%	71.2%
12	IN-ICP-002	1.62E+01	2.69E-04	2.9%	74.1%
13	W026-221F-HET	1.60E+01	4.24E-03	2.8%	76.9%
14	IN-BN-510	1.60E+01	1.68E-04	2.8%	79.7%
15	W027-772F-HET	1.56E+01	4.45E-03	2.8%	82.5%
16	LA-TA-21-43	1.47E+01	1.21E-03	2.6%	85.1%
17	RP-W755	1.26E+01	1.07E-03	2.2%	87.3%
18	W026-221H-HET	1.20E+01	4.24E-03	2.1%	89.4%
19	IN-ICP-005	9.38E+00	2.70E-04	1.7%	91.1%
20	W027-235F-HET	8.57E+00	4.44E-03	1.5%	92.6%
21	IN-ICP-003	6.82E+00	2.70E-04	1.2%	93.8%
22	T001-773A-HET	4.16E+00	4.26E-03	0.7%	94.5%
23	T001-235F-HET	3.78E+00	4.25E-03	0.7%	95.2%
24	RL-W513	2.83E+00	9.40E-05	0.5%	95.7%
25	OR-W202	1.83E+00	9.13E-04	0.3%	96.0%
26	IN-W177.156	1.55E+00	4.01E-04	0.3%	96.3%
27	IN-W179.158	1.53E+00	1.60E-04	0.3%	96.6%
28	RL-T122	1.46E+00	1.04E-02	0.3%	96.8%
29	IN-ICP-004	1.43E+00	2.73E-04	0.3%	97.1%
30	RL-T110	1.38E+00	5.80E-04	0.2%	97.3%
31	LA-TA-55-49	1.09E+00	1.24E-02	0.2%	97.5%
32	RL-T118	8.41E-01	6.69E-04	0.1%	97.6%
33	WP-RF118.01	8.40E-01	1.37E-04	0.1%	97.8%
34	W026-773A-HET	8.29E-01	4.24E-03	0.1%	97.9%
35	RL-T112	7.43E-01	1.12E-03	0.1%	98.1%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	5.66E+02	N/A	100.0%	N/A

Table 4.11-4. WIPP CH-TRU Waste Streams by Curies (²³⁴U); Time 175
(Calendar Year = 2208)

Rank Order	Waste Stream ID	Curies (²³⁴ U)			
		²³⁴ U	²³⁴ U /drum	% of Total	Cum. %
1	T001-221H-HET	8.86E+01	4.73E-03	14.4%	14.4%
2	W027-221F-HET	7.15E+01	4.88E-03	11.6%	26.0%
3	T001-221F-HET	4.48E+01	4.75E-03	7.3%	33.3%
4	LA-OS-00-01	3.91E+01	1.62E-01	6.4%	39.7%
5	T001-772F-HET	3.34E+01	4.74E-03	5.4%	45.1%
6	OR-W201	3.16E+01	7.62E-02	5.1%	50.2%
7	W027-221H-HET	3.13E+01	4.87E-03	5.1%	55.3%
8	RL-T107	2.90E+01	9.81E-04	4.7%	60.0%
9	RL-T140	2.63E+01	3.96E-02	4.3%	64.3%
10	W027-773A-HET	2.55E+01	4.87E-03	4.1%	68.4%
11	W027-999-HET	2.07E+01	4.87E-03	3.4%	71.8%
12	W026-221F-HET	1.79E+01	4.74E-03	2.9%	74.7%
13	IN-BN-510	1.79E+01	1.87E-04	2.9%	77.6%
14	W027-772F-HET	1.71E+01	4.87E-03	2.8%	80.4%
15	IN-ICP-002	1.63E+01	2.71E-04	2.6%	83.0%
16	LA-TA-21-43	1.47E+01	1.21E-03	2.4%	85.4%
17	W026-221H-HET	1.34E+01	4.74E-03	2.2%	87.6%
18	RP-W755	1.26E+01	1.07E-03	2.0%	89.6%
19	IN-ICP-005	9.43E+00	2.71E-04	1.5%	91.2%
20	W027-235F-HET	9.40E+00	4.87E-03	1.5%	92.7%
21	IN-ICP-003	6.86E+00	2.71E-04	1.1%	93.8%
22	T001-773A-HET	4.64E+00	4.75E-03	0.8%	94.6%
23	T001-235F-HET	4.22E+00	4.75E-03	0.7%	95.2%
24	RL-W513	3.21E+00	1.07E-04	0.5%	95.8%
25	OR-W202	2.03E+00	1.01E-03	0.3%	96.1%
26	IN-W177.156	1.72E+00	4.47E-04	0.3%	96.4%
27	IN-W179.158	1.71E+00	1.78E-04	0.3%	96.6%
28	RL-T122	1.46E+00	1.04E-02	0.2%	96.9%
29	IN-ICP-004	1.43E+00	2.75E-04	0.2%	97.1%
30	RL-T110	1.38E+00	5.81E-04	0.2%	97.3%
31	LA-TA-55-49	1.20E+00	1.37E-02	0.2%	97.5%
32	W026-773A-HET	9.25E-01	4.74E-03	0.2%	97.7%
33	WP-RF118.01	9.23E-01	1.51E-04	0.1%	97.8%
34	RL-T118	8.43E-01	6.70E-04	0.1%	98.0%
35	IN-W174.154	8.06E-01	3.89E-04	0.1%	98.1%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	6.15E+02	N/A	100.0%	N/A

Table 4.11-5. WIPP CH-TRU Waste Streams by Curies (²³⁴U); Time 350
(Calendar Year = 2383)

Rank Order	Waste Stream ID	Curies (²³⁴ U)			
		²³⁴ U	²³⁴ U /drum	% of Total	Cum. %
1	T001-221H-HET	1.03E+02	5.50E-03	14.9%	14.9%
2	W027-221F-HET	8.12E+01	5.54E-03	11.8%	26.6%
3	T001-221F-HET	5.20E+01	5.51E-03	7.5%	34.2%
4	LA-OS-00-01	4.61E+01	1.91E-01	6.7%	40.8%
5	T001-772F-HET	3.88E+01	5.50E-03	5.6%	46.5%
6	W027-221H-HET	3.55E+01	5.53E-03	5.1%	51.6%
7	RL-T107	3.41E+01	1.15E-03	4.9%	56.5%
8	OR-W201	3.17E+01	7.65E-02	4.6%	61.1%
9	W027-773A-HET	2.89E+01	5.53E-03	4.2%	65.3%
10	RL-T140	2.63E+01	3.96E-02	3.8%	69.1%
11	W027-999-HET	2.36E+01	5.53E-03	3.4%	72.5%
12	W026-221F-HET	2.08E+01	5.50E-03	3.0%	75.5%
13	IN-BN-510	2.07E+01	2.17E-04	3.0%	78.5%
14	W027-772F-HET	1.94E+01	5.53E-03	2.8%	81.3%
15	IN-ICP-002	1.64E+01	2.74E-04	2.4%	83.7%
16	W026-221H-HET	1.55E+01	5.50E-03	2.2%	85.9%
17	LA-TA-21-43	1.47E+01	1.21E-03	2.1%	88.1%
18	RP-W755	1.26E+01	1.07E-03	1.8%	89.9%
19	W027-235F-HET	1.07E+01	5.53E-03	1.5%	91.4%
20	IN-ICP-005	9.52E+00	2.74E-04	1.4%	92.8%
21	IN-ICP-003	6.92E+00	2.74E-04	1.0%	93.8%
22	T001-773A-HET	5.39E+00	5.52E-03	0.8%	94.6%
23	T001-235F-HET	4.90E+00	5.51E-03	0.7%	95.3%
24	RL-W513	3.79E+00	1.26E-04	0.5%	95.9%
25	OR-W202	2.34E+00	1.17E-03	0.3%	96.2%
26	IN-W177.156	2.00E+00	5.18E-04	0.3%	96.5%
27	IN-W179.158	1.98E+00	2.07E-04	0.3%	96.8%
28	RL-T122	1.46E+00	1.04E-02	0.2%	97.0%
29	IN-ICP-004	1.45E+00	2.78E-04	0.2%	97.2%
30	RL-T110	1.38E+00	5.82E-04	0.2%	97.4%
31	LA-TA-55-49	1.38E+00	1.57E-02	0.2%	97.6%
32	W026-773A-HET	1.07E+00	5.50E-03	0.2%	97.7%
33	WP-RF118.01	1.05E+00	1.72E-04	0.2%	97.9%
34	IN-W174.154	9.35E-01	4.51E-04	0.1%	98.0%
35	RL-T118	8.44E-01	6.71E-04	0.1%	98.2%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	6.91E+02	N/A	100.0%	N/A

Table 4.11-6. WIPP CH-TRU Waste Streams by Curies (²³⁴U); Time 1,000
(Calendar Year = 3033)

Rank Order	Waste Stream ID	Curies (²³⁴ U)			
		²³⁴ U	²³⁴ U /drum	% of Total	Cum. %
1	T001-221H-HET	1.07E+02	5.74E-03	15.0%	15.0%
2	W027-221F-HET	8.43E+01	5.75E-03	11.8%	26.8%
3	T001-221F-HET	5.43E+01	5.76E-03	7.6%	34.4%
4	LA-OS-00-01	4.83E+01	2.00E-01	6.8%	41.2%
5	T001-772F-HET	4.05E+01	5.75E-03	5.7%	46.8%
6	W027-221H-HET	3.68E+01	5.74E-03	5.2%	52.0%
7	RL-T107	3.57E+01	1.21E-03	5.0%	57.0%
8	OR-W201	3.16E+01	7.64E-02	4.4%	61.4%
9	W027-773A-HET	3.00E+01	5.74E-03	4.2%	65.6%
10	RL-T140	2.62E+01	3.96E-02	3.7%	69.3%
11	W027-999-HET	2.45E+01	5.74E-03	3.4%	72.7%
12	W026-221F-HET	2.17E+01	5.74E-03	3.0%	75.7%
13	IN-BN-510	2.16E+01	2.26E-04	3.0%	78.8%
14	W027-772F-HET	2.01E+01	5.75E-03	2.8%	81.6%
15	IN-ICP-002	1.64E+01	2.74E-04	2.3%	83.9%
16	W026-221H-HET	1.62E+01	5.74E-03	2.3%	86.1%
17	LA-TA-21-43	1.47E+01	1.21E-03	2.1%	88.2%
18	RP-W755	1.26E+01	1.07E-03	1.8%	90.0%
19	W027-235F-HET	1.11E+01	5.74E-03	1.5%	91.5%
20	IN-ICP-005	9.53E+00	2.74E-04	1.3%	92.8%
21	IN-ICP-003	6.93E+00	2.74E-04	1.0%	93.8%
22	T001-773A-HET	5.63E+00	5.76E-03	0.8%	94.6%
23	T001-235F-HET	5.11E+00	5.76E-03	0.7%	95.3%
24	RL-W513	3.97E+00	1.32E-04	0.6%	95.9%
25	OR-W202	2.44E+00	1.22E-03	0.3%	96.2%
26	IN-W177.156	2.09E+00	5.41E-04	0.3%	96.5%
27	IN-W179.158	2.07E+00	2.16E-04	0.3%	96.8%
28	RL-T122	1.46E+00	1.03E-02	0.2%	97.0%
29	IN-ICP-004	1.45E+00	2.78E-04	0.2%	97.2%
30	LA-TA-55-49	1.43E+00	1.63E-02	0.2%	97.4%
31	RL-T110	1.38E+00	5.82E-04	0.2%	97.6%
32	W026-773A-HET	1.12E+00	5.75E-03	0.2%	97.7%
33	WP-RF118.01	1.09E+00	1.78E-04	0.2%	97.9%
34	IN-W174.154	9.76E-01	4.71E-04	0.1%	98.0%
35	RL-T118	8.43E-01	6.70E-04	0.1%	98.2%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	7.15E+02	N/A	100.0%	N/A

Table 4.11-7. WIPP CH-TRU Waste Streams by Curies (²³⁴U); Time 3,000
(Calendar Year = 5033)

Rank Order	Waste Stream ID	Curies (²³⁴ U)			
		²³⁴ U	²³⁴ U /drum	% of Total	Cum. %
1	T001-221H-HET	1.07E+02	5.71E-03	15.0%	15.0%
2	W027-221F-HET	8.39E+01	5.72E-03	11.8%	26.8%
3	T001-221F-HET	5.40E+01	5.72E-03	7.6%	34.4%
4	LA-OS-00-01	4.81E+01	1.99E-01	6.8%	41.2%
5	T001-772F-HET	4.03E+01	5.72E-03	5.7%	46.9%
6	W027-221H-HET	3.66E+01	5.71E-03	5.2%	52.0%
7	RL-T107	3.55E+01	1.20E-03	5.0%	57.0%
8	OR-W201	3.15E+01	7.60E-02	4.4%	61.4%
9	W027-773A-HET	2.99E+01	5.71E-03	4.2%	65.6%
10	RL-T140	2.61E+01	3.93E-02	3.7%	69.3%
11	W027-999-HET	2.43E+01	5.71E-03	3.4%	72.7%
12	W026-221F-HET	2.16E+01	5.71E-03	3.0%	75.8%
13	IN-BN-510	2.15E+01	2.25E-04	3.0%	78.8%
14	W027-772F-HET	2.00E+01	5.71E-03	2.8%	81.6%
15	IN-ICP-002	1.63E+01	2.72E-04	2.3%	83.9%
16	W026-221H-HET	1.61E+01	5.71E-03	2.3%	86.2%
17	LA-TA-21-43	1.46E+01	1.20E-03	2.1%	88.2%
18	RP-W755	1.25E+01	1.06E-03	1.8%	90.0%
19	W027-235F-HET	1.10E+01	5.71E-03	1.5%	91.5%
20	IN-ICP-005	9.48E+00	2.73E-04	1.3%	92.9%
21	IN-ICP-003	6.89E+00	2.73E-04	1.0%	93.8%
22	T001-773A-HET	5.59E+00	5.73E-03	0.8%	94.6%
23	T001-235F-HET	5.09E+00	5.73E-03	0.7%	95.3%
24	RL-W513	3.95E+00	1.31E-04	0.6%	95.9%
25	OR-W202	2.43E+00	1.21E-03	0.3%	96.2%
26	IN-W177.156	2.07E+00	5.38E-04	0.3%	96.5%
27	IN-W179.158	2.06E+00	2.15E-04	0.3%	96.8%
28	RL-T122	1.45E+00	1.03E-02	0.2%	97.0%
29	IN-ICP-004	1.44E+00	2.76E-04	0.2%	97.2%
30	LA-TA-55-49	1.43E+00	1.62E-02	0.2%	97.4%
31	RL-T110	1.37E+00	5.78E-04	0.2%	97.6%
32	W026-773A-HET	1.12E+00	5.71E-03	0.2%	97.8%
33	WP-RF118.01	1.09E+00	1.77E-04	0.2%	97.9%
34	IN-W174.154	9.70E-01	4.69E-04	0.1%	98.0%
35	RL-T118	8.38E-01	6.66E-04	0.1%	98.2%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	7.11E+02	N/A	100.0%	N/A

Table 4.11-8. WIPP CH-TRU Waste Streams by Curies (²³⁴U); Time 5,000
(Calendar Year = 7033)

Rank Order	Waste Stream ID	Curies (²³⁴ U)			
		²³⁴ U	²³⁴ U /drum	% of Total	Cum. %
1	T001-221H-HET	1.06E+02	5.67E-03	1.50E-01	15.0%
2	W027-221F-HET	8.34E+01	5.69E-03	1.18E-01	26.8%
3	T001-221F-HET	5.37E+01	5.69E-03	7.59E-02	34.4%
4	LA-OS-00-01	4.78E+01	1.98E-01	6.76E-02	41.2%
5	T001-772F-HET	4.01E+01	5.68E-03	5.67E-02	46.8%
6	W027-221H-HET	3.64E+01	5.68E-03	5.15E-02	52.0%
7	RL-T107	3.53E+01	1.20E-03	5.00E-02	57.0%
8	OR-W201	3.13E+01	7.55E-02	4.43E-02	61.4%
9	W027-773A-HET	2.97E+01	5.68E-03	4.20E-02	65.6%
10	RL-T140	2.60E+01	3.91E-02	3.67E-02	69.3%
11	W027-999-HET	2.42E+01	5.68E-03	3.42E-02	72.7%
12	W026-221F-HET	2.14E+01	5.68E-03	3.03E-02	75.7%
13	IN-BN-510	2.14E+01	2.24E-04	3.02E-02	78.8%
14	W027-772F-HET	1.99E+01	5.68E-03	2.82E-02	81.6%
15	IN-ICP-002	1.62E+01	2.71E-04	2.30E-02	83.9%
16	W026-221H-HET	1.60E+01	5.68E-03	2.27E-02	86.1%
17	LA-TA-21-43	1.45E+01	1.19E-03	2.05E-02	88.2%
18	RP-W755	1.24E+01	1.06E-03	1.76E-02	90.0%
19	W027-235F-HET	1.10E+01	5.67E-03	1.55E-02	91.5%
20	IN-ICP-005	9.42E+00	2.71E-04	1.33E-02	92.8%
21	IN-ICP-003	6.85E+00	2.71E-04	9.69E-03	93.8%
22	T001-773A-HET	5.56E+00	5.70E-03	7.87E-03	94.6%
23	T001-235F-HET	5.06E+00	5.69E-03	7.15E-03	95.3%
24	RL-W513	3.93E+00	1.31E-04	5.56E-03	95.9%
25	OR-W202	2.41E+00	1.20E-03	3.41E-03	96.2%
26	IN-W177.156	2.06E+00	5.35E-04	2.92E-03	96.5%
27	IN-W179.158	2.05E+00	2.14E-04	2.90E-03	96.8%
28	RL-T122	1.44E+00	1.02E-02	2.04E-03	97.0%
29	IN-ICP-004	1.43E+00	2.75E-04	2.03E-03	97.2%
30	LA-TA-55-49	1.42E+00	1.61E-02	2.01E-03	97.4%
31	RL-T110	1.36E+00	5.75E-04	1.93E-03	97.6%
32	W026-773A-HET	1.11E+00	5.68E-03	1.57E-03	97.7%
33	WP-RF118.01	1.08E+00	1.76E-04	1.53E-03	97.9%
34	IN-W174.154	9.65E-01	4.66E-04	1.36E-03	98.0%
35	RL-T118	8.33E-01	6.62E-04	1.18E-03	98.1%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	7.07E+02	N/A	100.0%	N/A

Table 4.11-9. WIPP CH-TRU Waste Streams by Curies (²³⁴U); Time 7,500
(Calendar Year = 9533)

Rank Order	Waste Stream ID	Curies (²³⁴ U)			
		²³⁴ U	²³⁴ U /drum	% of Total	Cum. %
1	T001-221H-HET	1.06E+02	5.63E-03	15.0%	15.0%
2	W027-221F-HET	8.28E+01	5.65E-03	11.8%	26.8%
3	T001-221F-HET	5.33E+01	5.65E-03	7.6%	34.4%
4	LA-OS-00-01	4.75E+01	1.97E-01	6.8%	41.2%
5	T001-772F-HET	3.98E+01	5.64E-03	5.7%	46.8%
6	W027-221H-HET	3.62E+01	5.64E-03	5.2%	52.0%
7	RL-T107	3.51E+01	1.19E-03	5.0%	57.0%
8	OR-W201	3.11E+01	7.50E-02	4.4%	61.4%
9	W027-773A-HET	2.95E+01	5.64E-03	4.2%	65.6%
10	RL-T140	2.58E+01	3.88E-02	3.7%	69.3%
11	W027-999-HET	2.40E+01	5.64E-03	3.4%	72.7%
12	W026-221F-HET	2.13E+01	5.64E-03	3.0%	75.7%
13	IN-BN-510	2.12E+01	2.22E-04	3.0%	78.8%
14	W027-772F-HET	1.98E+01	5.64E-03	2.8%	81.6%
15	IN-ICP-002	1.61E+01	2.69E-04	2.3%	83.9%
16	W026-221H-HET	1.59E+01	5.64E-03	2.3%	86.2%
17	LA-TA-21-43	1.44E+01	1.18E-03	2.1%	88.2%
18	RP-W755	1.23E+01	1.05E-03	1.8%	90.0%
19	W027-235F-HET	1.09E+01	5.63E-03	1.5%	91.5%
20	IN-ICP-005	9.36E+00	2.69E-04	1.3%	92.8%
21	IN-ICP-003	6.80E+00	2.69E-04	1.0%	93.8%
22	T001-773A-HET	5.52E+00	5.66E-03	0.8%	94.6%
23	T001-235F-HET	5.02E+00	5.65E-03	0.7%	95.3%
24	RL-W513	3.90E+00	1.30E-04	0.6%	95.9%
25	OR-W202	2.40E+00	1.19E-03	0.3%	96.2%
26	IN-W177.156	2.05E+00	5.31E-04	0.3%	96.5%
27	IN-W179.158	2.03E+00	2.12E-04	0.3%	96.8%
28	RL-T122	1.43E+00	1.02E-02	0.2%	97.0%
29	IN-ICP-004	1.42E+00	2.73E-04	0.2%	97.2%
30	LA-TA-55-49	1.41E+00	1.60E-02	0.2%	97.4%
31	RL-T110	1.35E+00	5.71E-04	0.2%	97.6%
32	W026-773A-HET	1.10E+00	5.64E-03	0.2%	97.7%
33	WP-RF118.01	1.07E+00	1.75E-04	0.2%	97.9%
34	IN-W174.154	9.58E-01	4.63E-04	0.1%	98.0%
35	RL-T118	8.28E-01	6.58E-04	0.1%	98.2%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	7.02E+02	N/A	100.0%	N/A

Table 4.11-10. WIPP CH-TRU Waste Streams by Curies (²³⁴U); Time 10,000
(Calendar Year = 12033)

Rank Order	Waste Stream ID	Curies (²³⁴ U)			
		²³⁴ U	²³⁴ U /drum	% of Total	Cum. %
1	T001-221H-HET	1.05E+02	5.60E-03	15.0%	15.0%
2	W027-221F-HET	8.22E+01	5.61E-03	11.8%	26.8%
3	T001-221F-HET	5.29E+01	5.61E-03	7.6%	34.4%
4	LA-OS-00-01	4.71E+01	1.95E-01	6.8%	41.2%
5	T001-772F-HET	3.95E+01	5.60E-03	5.7%	46.9%
6	W027-221H-HET	3.59E+01	5.60E-03	5.2%	52.0%
7	RL-T107	3.48E+01	1.18E-03	5.0%	57.0%
8	OR-W201	3.09E+01	7.45E-02	4.4%	61.4%
9	W027-773A-HET	2.93E+01	5.60E-03	4.2%	65.6%
10	RL-T140	2.56E+01	3.86E-02	3.7%	69.3%
11	W027-999-HET	2.38E+01	5.60E-03	3.4%	72.7%
12	W026-221F-HET	2.11E+01	5.60E-03	3.0%	75.8%
13	IN-BN-510	2.11E+01	2.21E-04	3.0%	78.8%
14	W027-772F-HET	1.96E+01	5.60E-03	2.8%	81.6%
15	IN-ICP-002	1.60E+01	2.67E-04	2.3%	83.9%
16	W026-221H-HET	1.58E+01	5.60E-03	2.3%	86.2%
17	LA-TA-21-43	1.43E+01	1.18E-03	2.1%	88.2%
18	RP-W755	1.23E+01	1.04E-03	1.8%	90.0%
19	W027-235F-HET	1.08E+01	5.60E-03	1.5%	91.5%
20	IN-ICP-005	9.29E+00	2.67E-04	1.3%	92.9%
21	IN-ICP-003	6.75E+00	2.67E-04	1.0%	93.8%
22	T001-773A-HET	5.48E+00	5.62E-03	0.8%	94.6%
23	T001-235F-HET	4.99E+00	5.61E-03	0.7%	95.3%
24	RL-W513	3.87E+00	1.29E-04	0.6%	95.9%
25	OR-W202	2.38E+00	1.19E-03	0.3%	96.2%
26	IN-W177.156	2.03E+00	4.56E-02	0.3%	96.5%
27	IN-W179.158	2.02E+00	2.11E-04	0.3%	96.8%
28	RL-T122	1.42E+00	1.01E-02	0.2%	97.0%
29	IN-ICP-004	1.41E+00	2.71E-04	0.2%	97.2%
30	LA-TA-55-49	1.40E+00	1.59E-02	0.2%	97.4%
31	RL-T110	1.35E+00	5.67E-04	0.2%	97.6%
32	W026-773A-HET	1.09E+00	5.60E-03	0.2%	97.8%
33	WP-RF118.01	1.06E+00	1.74E-04	0.2%	97.9%
34	IN-W174.154	9.51E-01	4.60E-04	0.1%	98.0%
35	RL-T118	8.22E-01	6.53E-04	0.1%	98.2%
*	*	*	*	*	*
*	*	*	*	*	*
*	*	*	*	*	*
690	RL-W714	0.00E+00	0.00E+00	0.0%	100.0%
	Sum =	6.97E+02	N/A	100.0%	N/A

5. REFERENCES

5.1 PROCEDURES

AP-113, *Analysis Plan for Inventory Reconciliation: Compliance Recertification Application*, Sandia National Laboratory Nuclear Waste Management Analysis Plan, February 3, 2005.

AP-119, *Analysis Plan For Deriving Radionuclide Inventory Information for Performance Assessment Calculations: Post CRA Performance Assessment Baseline Calculation*. Sandia National Laboratory Nuclear Waste Management Program Analysis Plan, April 4, 2004.

NP 9-1, *Analyses*. Sandia National Laboratories Nuclear Waste Management Program Procedure, August 29, 2001.

5.2 REFERENCES

Leigh and Fox 2005. *Radionuclides Expected to Dominate Potential Releases in the Performance Assessment Baseline Calculation*. Revision 0. ERMS# 539643. Sandia National Laboratories. Carlsbad, NM.

Leigh and Trone 2005. *Calculation of the Waste Unit Factor for the Performance Assessment Baseline Calculation*. Revision 0. ERMS# 539613. Sandia National Laboratories. Carlsbad, NM.

U.S. DOE 1996. Title 40 CFR Part 191 *Compliance Certification Application for the Waste Isolation Pilot Plant*. DOE/CAO-1996-2184. U.S. Department of Energy. Carlsbad, NM

U.S. DOE 2004. *Title 40 CFR 191 Subparts B and C Compliance Recertification Application 2004*. DOE/WIPP 2004-3231. U.S. Department of Energy. Carlsbad, NM.