Los Alamos
NATIONAL LABORATORY
EST. 1943

LA-UR-18-31882
Approved for public release; distribution is unlimited.

Title: Performance Assessment Inventory Report - 2018

Author(s): Van Soest, Gregory

Intended for: Report

Issued: 2018-12-21

Disclaimer:
Los Alamos National Laboratory, an affirmative action/equal opportunity employer, is operated by Triad National Security, LLC for the National Nuclear Security Administration of U.S. Department of Energy under contract 89233218CNA000001. By approving this article, the publisher recognizes that the U.S. Government retains nonexclusive, royalty-free license to publish or reproduce the published form of this contribution, or to allow others to do so, for U.S. Government purposes. Los Alamos National Laboratory requests that the publisher identify this article as work performed under the auspices of the U.S. Department of Energy. Los Alamos National Laboratory strongly supports academic freedom and a researcher's right to publish; as an institution, however, the Laboratory does not endorse the viewpoint of a publication or guarantee its technical correctness.

NOTICE: The current controlled version of this document is on the LCODocs website (https://lcodocs.lanl.gov/). A printed copy of the document may not be the current version.

LOS ALAMOS NATIONAL LABORATORY
CARLSBAD OPERATIONS

INV-PA-18, Revision 0

PERFORMANCE ASSESSMENT INVENTORY REPORT - 2018

Effective Date: 12/20/2018

Originator:

Gregory D. Van Soest, LANL-CO Inventory Team Member — Date: 12/19/2018

Approved by:

Bill McInroy, LANL-CO Inventory Team Leader — Date: 12/19/2018

Laurie Smith, LANL-CO Quality Assurance Manager — Date: 12/19/2018

Ned Elkins, LANL-CO RSO/WIPP Program Director — Date: 12.19.18

INV-1812-09-01-01

History of Revision

Revision Number	Effective Date	Pages Affected	Description of Revision
0	12/20/18	All	Original release.

Table of Contents

1.0 Purpose 5

2.0 Scope 5

3.0 References, Acronyms, and Definitions 5

3.1 References 5

3.2 Acronyms 7

3.3 Definitions 8

4.0 Methodology 9

4.1 Annual Inventory Collection and Publication 9

4.2 Scaling to a Full Repository 10

4.3 Supplemental Analyses 11

5.0 Results 12

5.1 Radionuclides & Volumes 12

5.2 Waste, Packaging, Emplacement, and Operational Materials 34

5.3 Other Chemical Constituents 36

6.0 Comparison with the PAIR-2012 37

7.0 Attachments 40

Attachment 1. SNL WIPP Inventory Needs Letter (10/24/2018) 41

Table of Tables

Table 5-1. CH Volume (m^3) and Activity (Ci) By Waste Stream and Radionuclide Decayed thru 2033 13
Table 5-2. RH Volume (m^3) and Activity (Ci) By Waste Stream and Radionuclide Decayed thru 2033 23
Table 5-3. CH Radionuclide Activities (Ci) Decayed thru Specified Years 27
Table 5-4. RH Radionuclide Activities (Ci) Decayed thru Specified Years 30
Table 5-5. Waste and Packaging Materials 35
Table 5-6. Cements 35
Table 5-7. Emplacement and Operational Materials 36
Table 5-8. Oxyanions 36
Table 5-9. Organic Ligands 37
Table 6-1. Comparing Activity (Ci) By Radionuclide Decayed to 2033 37
Table 6-2. Comparing Total Activity (Ci) By Year 38
Table 6-3. Comparing Waste and Packaging Materials (kg) 38
Table 6-4. Comparing Cements (kg) 39
Table 6-5. Comparing Emplacement and Operational Materials (kg) 39
Table 6-6. Comparing Oxyanions (kg) 39
Table 6-7. Comparing Organic Ligands (kg) 40

1.0 PURPOSE

This *Performance Assessment Inventory Report - 2018* (PAIR-2018; hereafter referred to as "this report") was prepared by the Los Alamos National Laboratory - Carlsbad Operations (LANL-CO) as requested by Russ Patterson, U.S. Department of Energy (DOE) Carlsbad Field Office (CBFO) Compliance Certification Manager (Patterson 2018). The inventory information provided in this report will be used by the Sandia National Laboratories – Carlsbad Programs Group (SNL-CPG) to conduct a performance assessment (PA) in support of the Waste Isolation Pilot Plant (WIPP) fourth Compliance Recertification Application (CRA; CRA-2018). This report documents the transuranic (TRU) waste inventory data needs that were requested by SNL-CPG in a letter dated October 24, 2018, from Todd Zeitler to Russ Patterson of CBFO (SNL 2018). This letter (hereafter referred to as the "SNL WIPP Inventory Needs Letter") is provided as Attachment 1 to this report.

2.0 SCOPE

The information provided in this report is based on the annual inventory collected from the TRU waste sites and documented in the *Annual Transuranic Waste Inventory Report (ATWIR) - 2018* (ATWIR-2018; DOE 2018). The ATWIR-2018 contains an inventory of defense-related TRU waste information as of December 31, 2017, and segregates the waste streams into the following categories:

- *Emplaced* (already shipped from the TRU waste site to the WIPP or to Waste Control Specialists [WCS], a temporary storage location near Andrews, Texas),
- *WIPP-bound* (likely to be shipped to WIPP), and
- *Potential* (potential future WIPP waste).

For this report, only *Emplaced* and *WIPP-bound* waste streams were considered.

3.0 REFERENCES, ACRONYMS, AND DEFINITIONS

3.1 References

DOE 1996. *Title 40 CFR Part 191 Compliance Certification Application for the Waste Isolation Pilot Plant*. 21 vols. DOE/CAO-1996-2184. October, 1996. U.S. Department of Energy, Carlsbad Area Office, Carlsbad, NM.

DOE 2004. *Title 40 CFR Part 191 Compliance Recertification Application 2004*. 10 vols. DOE/WIPP-2004-3231. March, 2004. U.S. Department of Energy, Carlsbad Field Office, Carlsbad, NM.

DOE 2009. *Title 40 CFR Part 191 Compliance Recertification Application 2009*. DOE/WIPP-2009-2225. 2009. U.S. Department of Energy, Carlsbad Field Office, Carlsbad, NM.

DOE 2014. *Title 40 CFR Part 191 Compliance Recertification Application 2014*. DOE/WIPP-14-3503. 2014. U.S. Department of Energy, Carlsbad Field Office, Carlsbad, NM.

DOE 2017. *Quality Assurance Program Document*, Revision 13. U.S. Department of Energy, Carlsbad Field Office, DOE/CBFO-94-1012.

DOE 2018. *Annual Transuranic Waste Inventory Report – 2018*, Revision 0. U.S. Department of Energy, Carlsbad Field Office, DOE/TRU-18-3425.

DOE and State of New Mexico 1988. *Modification to the Agreement for Consultation and Cooperation Between the Department of Energy and the State of New Mexico on the Waste Isolation Pilot Plant*, July 1, 1981 (dated April 18, 1988), Carlsbad Area Office, Carlsbad, NM.

EPA 1996. *Criteria for the Certification and Recertification of the Waste Isolation Pilot Plant's Compliance With the 40 CFR Part 191 Disposal Regulations,* Final Rule, Title 40 CFR, Part 194, Federal Register, February 9, 1996. U.S. Environmental Protection Agency (EPA), Washington, D.C.

LANL 2012. *Performance Assessment Inventory Report – 2012*. LANL-CO. INV-PA-12, Revision 0, November 29, 2012.

LANL 2018a. *Comprehensive Inventory Database*, software version v.2.03 S.2.03, data version D.17.02.33. LANL-CO. September 5, 2018.

LANL 2018b. *Adjustment of 2016 and 2017 Projected Inventory to 2033 Closure Year*. LANL-CO. INV-SAR-49, Revision 0, September 10, 2018.

LANL 2018c. *Chemical and Cement Components 2017 Inventory Estimates*. LANL-CO. INV-SAR-50, Revision 0, December 13, 2018.

LANL 2018d. *Estimation of Cellulose, Plastic, and Rubber Emplacement and Operational Materials in the Waste Isolation Pilot Plant*. LANL-CO. INV-SAR-51, Revision 0, December 13, 2018.

ORNL 2009. *SCALE: A Modular Code System for Performing Standardized Computer Analyses for Licensing Evaluation*. Oak Ridge National Laboratory. ORNL/TM-2005/39, Version 6, Vols.I–III January 2009. Oak Ridge, TN. Available from Radiation Safety Information Computational Center at Oak Ridge National Laboratory as CCC-750.

Patterson 2018. *Email from Russ Patterson (CBFO) to Bill McInroy (LANL-CO) requesting a PA Inventory Report*. October 24, 2018.

Shrader 2018. *Assumption for the WIPP Facility Closure Date for the Purpose of Preparing the 2018 Annual TRU Waste Inventory Report and Performance Assessment Inventory Report for use in the Compliance Recertification Application - 2019*, August 28, 2018, CBFO: OEP:MRB:AC:18-0345:UFC 5486.00. Carlsbad Field Office, Carlsbad, NM.

SNL 2018. *Sandia's WIPP Inventory Needs for Performance Assessment*, letter dated October 24, 2018 from Todd Zeitler (SNL-CPG) to Russ Patterson (DOE-CBFO).

U.S. Congress 1992 and 1996. *Waste Isolation Pilot Plant Land Withdrawal Act*, Public Law 102-579 (1992), as amended by Public Law 104-201, (1996).

3.2 Acronyms

ATWIR	Annual Transuranic Waste Inventory Report
CBFO	Carlsbad Field Office
CFR	Code of Federal Regulations
CH	contact-handled
CID	Comprehensive Inventory Database
CRA	Compliance Recertification Application
DOE	[United States] Department of Energy
EPA	[United States] Environmental Protection Agency

LANL-CO	Los Alamos National Laboratory – Carlsbad Operations
ORIGEN-S	Oak Ridge Isotope Generation and Depletion Code (a module of SCALE version 6)
PA	performance assessment
PAIR	Performance Assessment Inventory Report
QA	Quality Assurance
QAPD	[CBFO] Quality Assurance Program Document
RH	remote-handled
SCALE	Standardized Computer Analysis for Licensing Evaluation
SNL-CPG	Sandia National Laboratories – Carlsbad Programs Group
TRU	transuranic
WIPP	Waste Isolation Pilot Plant
WCS	Waste Control Specialists
WDS	[WIPP] Waste Data System

3.3 Definitions

emplaced	Permanently disposed underground at WIPP, stored above ground at WIPP, in temporary storage at WCS, or in transit to WCS/WIPP as of the inventory date (December 31, 2017) for this report.
potential	A designation in the ATWIR for a waste stream that is considered unsuited to be emplaced in the WIPP as of the cutoff date. This designation is not intended to identify whether the waste stream will ultimately be disposed of at the WIPP. Regardless of its designation in the ATWIR, all TRU waste must meet all WIPP requirements before it can be disposed of at the WIPP. Potential waste streams are not included in PAIR results.
projected	Not yet generated; estimated as future generation.

scaled (scaling)	A methodology by which actual inventory values are artificially increased in order to simulate a “full” repository.
stored	Already generated; not yet shipped to the WIPP.
WIPP-bound	A designation within the ATWIR for a waste stream that appears to meet the requirements for emplacement into the WIPP as of the cutoff date. WIPP-bound waste streams are included in PAIR results.

4.0 METHODOLOGY

4.1 Annual Inventory Collection and Publication

Inventory data and projected estimates are collected annually from the TRU waste sites and the WIPP Waste Data System (WDS) in order to maintain an updated inventory estimate of the DOE TRU waste complex. The data are compiled in the Comprehensive Inventory Database (CID; LANL 2018a), which is software developed and qualified under the LANL-CO Quality Assurance (QA) program in accordance with the CBFO *Quality Assurance Program Document* (QAPD; DOE 2017). Additionally, the CID facilitates the decay and buildup correction of radionuclide activities by using Oak Ridge Isotope Generation and Depletion (ORIGEN-S) module of *Standardized Computer Analysis for Licensing Evaluation* (SCALE) Version 6 (ORNL 2009), acquired software also qualified under the LANL-CO QA program in accordance with the QAPD. The CID is then used to generate the data reported in each ATWIR.

The data provided in this report are based upon the ATWIR-2018 (DOE 2018) and CID data version D.17.02.33 (LANL 2018a), which report the TRU waste inventory as of December 31, 2017 and estimate future generation through calendar year (CY) 2033. Additionally, supplemental analyses were performed in order to completely satisfy the SNL WIPP Inventory Needs Letter requests (see section 4.3 below).

4.2 Scaling to a Full Repository

PA modeling in support of WIPP explicitly assumes that the WIPP is filled to its legislated capacity at time of closure, as required in Title 40 Code of Federal Regulations (CFR) Part 194.24 (EPA 1996). The legislated capacity for WIPP is 175,564 m^3 (6,200,000 ft^3), as set by the *WIPP Land Withdrawal Act* (U.S. Congress 1992 and 1996), with a limit of 7,079 m^3 (250,000 ft^3) for remote-handled (RH)-TRU waste as imposed by the *Consultation and Cooperation Agreement* (DOE and State of New Mexico 1988); therefore, the difference in the full legislated volume capacity and the RH-TRU imposed disposal limit sets the contact-handled (CH)-TRU disposal limit at 168,485 m^3 (5,950,000 ft^3). The volume of anticipated (stored plus projected) and emplaced TRU waste reported by the DOE TRU waste sites for the ATWIR-2018 is less than the legislated volume capacity for WIPP.

Since each of the requests included in the SNL WIPP Inventory Needs Letter (see Attachment 1) specify that the inventory be "scaled to a full repository," a scaling methodology was implemented through the CID whereby a portion of the inventory was scaled such that the totals reflect a "full" WIPP repository in terms of volume. The approved scaling methodology is to scale only the *projected* (not yet generated) portion of the inventory, since this represents future waste. By contrast, the *stored* (already generated) and *emplaced* (already shipped to WIPP or WCS) waste are fixed, known portions of the inventory that are left intact. This methodology is consistent with scaling previously performed for the initial WIPP Compliance Certification Application (DOE 1996) and CRA's 2004 (DOE 2004), 2009 (DOE 2009), and 2014 (DOE 2014).

The CID is configured to produce scaled values by only scaling that portion of the waste which is projected. To do so, it has calculated scaling factors (for CH-TRU and RH-TRU waste separately) by which the respective projected volume totals are multiplied such that, when added with the stored and emplaced portions, are equal to the disposal limits (168,485 m^3 for CH-TRU, and 7,079 m^3 for RH-TRU) for the WIPP. These same scaling factors were then also used to scale the projected portion of radionuclide activity and non-radiological material mass estimates provided in this report.

The scaling factors calculated by the CID and used for this report are as follows (rounded to three significant figures):

CH-TRU	1.58
RH-TRU	12.7

4.3 Supplemental Analyses

Three additional analyses were performed to support the preparation of this report. One analysis documented the adjustment of the inventory estimates as collected (which forecasted through CY 2050) back to a CY 2033 forecast at the direction of the DOE (Shrader 2018). The remaining two analyses produce data to supplement the inventory information that the CID could not readily provide. The three analyses are: *Adjustment of 2016 and 2017 Projected Inventory to 2033 Closure Year* (LANL 2018b), *Chemical and Cement Components 2017 Inventory Estimates* (LANL 2018c), and *Estimation of Cellulose, Plastic, and Rubber Emplacement and Operational Materials in the Waste Isolation Pilot Plant* (LANL 2018d).

The *Adjustment of 2016 and 2017 Projected Inventory to 2033 Closure Yea*r (LANL 2018b) analysis was performed to document the adjustment of the inventory collected as of December 31, 2017 to reflect projections through CY 2033. The sites were originally instructed to provide their projections through CY 2050, however LANL-CO was given direction by DOE (Shrader 2018) to report only projections through CY 2033 in the PAIR-2018. This required that the inventory data be adjusted. Once completed, the resulting data version was labeled D.17.02.33, and is used to supply information for both the ATWIR-2018 and this report.

The *Chemical and Cement Components 2017 Inventory Estimates* (LANL 2018c) analysis was performed to determine the total amount of oxyanions, complexing agents (organic ligands), and cement that would be present in a full WIPP repository. These inventory estimates are only available for that data collected from the TRU waste sites. Data on these components are not available from the WDS, which would represent the already-emplaced portion. Therefore, an analysis was warranted to estimate the total mass for these constituents, including those that have already been emplaced at the WIPP. The results from this analysis report are presented in Table 5-6, Table 5-8, and Table 5-9 below.

The *Estimation of Cellulose, Plastic, and Rubber Emplacement and Operational Materials in the Waste Isolation Pilot Plant* (LANL 2018d) analysis was performed to estimate the amount of emplacement materials (used to facilitate the emplacement of waste, but not including the container packages themselves) and operational materials (used during operational activities and will remain in the repository at closure) in a full WIPP repository. Since the CID only compiles the materials data related to the waste and the packaging containers, this supplemental analysis was warranted. The results from this analysis report are presented in Table 5-7 below.

5.0 RESULTS

5.1 Radionuclides & Volumes

SNL WIPP Inventory Needs Letter Request #1

1. *Waste stream volumes (in m^3) and inventory of radionuclides on a waste stream basis for both CH- and RH-TRU waste, supplied in Curies and decayed to the year 2033, for the following radionuclides (scaled to a full repository): ^{241}Am, ^{243}Am, ^{244}Cm, ^{137}Cs, ^{237}Np, ^{238}Pu, ^{239}Pu, ^{240}Pu, ^{241}Pu, ^{242}Pu, ^{244}Pu, ^{90}Sr, ^{229}Th, ^{230}Th, ^{232}Th, ^{233}U, ^{234}U, ^{235}U, ^{236}U, and ^{238}U.*

Table 5-1. CH Volume (m^3) and Activity (Ci) By Waste Stream and Radionuclide Decayed thru 2033

Site	Waste Stream ID	Scaled Vol (m^3)	Am-241	Am-243	Cm-244	Cs-137	Np-237	Pu-238	Pu-239	Pu-240	Pu-241	Pu-242	Pu-244	Sr-90	Th-229	Th-230	Th-232	U-233	U-234	U-235	U-236	U-238
AE	AE-T001	133.12	2.71E+01	9.76E-01	7.16E+01	1.57E+01	3.94E-02	1.10E+00	1.46E+01	6.89E+00	1.32E+01	8.04E-02	2.63E-05	1.22E+01	1.04E-04	5.53E-04	3.92E-04	2.03E-02	3.30E-01	3.68E-04	6.79E-06	9.85E-03
AE	AE-T003	17.70	1.91E+00	5.02E-02	5.09E-03	2.31E-01	2.85E-03	3.83E+00	2.06E+00	1.88E+00	6.86E+00	4.64E-03	4.14E-07	1.11E-01	5.13E-07	3.47E-04	8.83E-05	2.64E-04	1.33E-02	6.80E-06	4.94E-06	3.26E-04
AE	WP-AECHDM	102.33	5.42E+01	1.88E+00	4.30E-02	9.73E-01	1.23E-01	5.20E+01	8.54E+01	6.45E+01	2.56E+01	2.62E-02	5.89E-16	9.71E-01	8.62E-03	2.23E-05	4.24E-14	4.20E-02	8.33E-02	1.50E-03	5.73E-05	4.41E-02
AE	WP-AECHHM	13.95	1.41E+01	5.13E-03	--	7.63E-04	1.83E-03	3.62E+00	4.13E+01	1.64E+01	2.96E-10	2.02E-03	--	7.62E-04	3.21E-04	1.52E-06	1.08E-14	2.30E-07	5.67E-03	1.07E-04	1.46E-05	2.69E-03
AE	WP-MU-W002	4.50	6.72E+00	1.13E-03	--	9.16E-07	3.91E-03	--	2.27E-02	--	--	--	--	9.15E-07	1.09E-03	2.02E-13	--	5.05E-07	1.46E-09	6.70E-10	--	1.73E-05
AW	AW-5649N	0.21	6.51E-04	--	--	--	4.13E-09	5.98E-06	3.07E-03	5.98E-04	4.87E-03	--	--	--	1.35E-16	5.54E-14	2.74E-19	1.98E-13	4.67E-10	7.56E-11	4.43E-10	--
AW	AW-N027.531	5.73	5.75E+01	7.77E-09	--	3.46E-04	2.82E-03	--	1.87E+00	--	--	--	--	3.61E-04	1.27E-10	4.95E-13	--	1.84E-07	6.73E-09	2.13E-05	--	1.50E-04
AW	AW-T033.1325	34.78	7.27E+01	1.58E-02	9.10E-01	8.98E-01	1.28E-01	3.89E+00	1.24E+01	1.65E-01	--	1.34E-04	--	8.51E-01	6.24E-09	3.55E-07	2.34E-15	8.87E-06	2.50E-03	1.46E-04	3.00E-06	6.87E-03
IN	IN-AE-102	60.48	3.03E+01	3.45E-09	--	4.51E-02	3.20E-03	5.19E+00	5.49E+01	1.56E+01	6.37E+01	1.72E-03	--	4.84E-02	1.72E-10	3.10E-07	1.63E-04	2.30E-07	2.11E-03	5.09E-04	7.86E-06	4.15E-03
IN	IN-AE-105	2.94	1.44E+00	3.62E-08	--	2.59E-04	9.76E-04	1.47E-01	2.53E+00	9.44E-01	3.64E+00	2.51E-04	--	2.77E-04	6.05E-11	6.80E-10	6.21E-05	7.62E-08	8.02E-06	4.49E-08	5.04E-07	7.01E-13
IN	IN-BC-203	6.46	5.79E+00	--	--	--	1.64E-04	1.06E+00	1.39E+01	3.25E+00	1.05E+01	3.97E-04	--	--	9.78E-12	3.69E-07	8.58E-16	1.21E-08	2.14E-03	6.06E-04	1.83E-06	4.28E-04
IN	IN-BN-501	0.42	4.73E-02	1.31E-06	--	5.26E-06	1.42E-06	2.27E-04	9.46E-03	2.10E-03	6.37E-03	2.76E-07	--	5.66E-06	6.10E-14	5.30E-10	3.92E-19	8.96E-11	3.61E-06	1.16E-06	9.94E-10	6.85E-16
IN	IN-BN-522	20.58	2.68E+00	--	--	3.98E-06	4.27E-05	3.15E-01	7.03E+00	1.56E+00	4.76E+00	2.04E-04	--	4.28E-06	1.63E-12	1.46E-09	2.92E-16	2.48E-09	1.74E-05	8.15E-07	7.41E-07	5.06E-13
IN	IN-BN-523	1.14	7.35E-02	--	--	--	1.78E-06	5.93E-03	2.51E-01	5.58E-02	1.50E-01	7.32E-06	--	--	9.32E-14	2.74E-11	1.32E-17	1.23E-10	3.24E-07	4.45E-09	2.98E-08	2.04E-14
IN	IN-BN-525	0.38	4.18E-02	--	--	1.14E-06	1.58E-06	1.42E-02	2.53E-01	5.63E-02	1.59E-01	3.93E-06	--	1.21E-06	1.17E-13	9.08E-11	1.82E-17	1.31E-10	9.15E-07	5.23E-09	3.51E-08	1.28E-14
IN	IN-BN-527	0.76	6.06E-01	--	--	1.32E-03	4.92E-06	2.15E-04	8.78E-03	1.95E-03	6.56E-03	2.56E-07	--	1.41E-03	1.36E-13	7.77E-13	3.64E-19	2.31E-10	1.03E-08	1.38E-10	9.23E-10	6.35E-16
IN	IN-BN-529	0.42	1.70E-02	--	--	5.42E-06	1.66E-06	4.87E-03	1.15E-02	2.55E-03	6.74E-03	3.41E-07	--	5.81E-06	7.79E-14	1.76E-11	4.77E-19	1.12E-10	2.34E-07	1.81E-10	1.21E-09	8.45E-16
IN	IN-BN-538	295.76	4.30E+00	--	--	7.08E-05	6.08E-05	5.83E-01	2.20E+01	4.88E+00	1.52E+01	6.42E-04	--	7.59E-05	2.53E-12	6.60E-09	4.04E-07	3.64E-09	5.69E-05	9.08E-06	2.46E-06	1.69E-12
IN	IN-BN004	58.53	4.71E+01	--	1.10E-01	5.22E-07	1.64E-03	2.52E+00	7.82E+01	1.75E+01	4.74E+01	1.74E-03	--	5.60E-07	7.19E-11	1.60E-07	3.28E-15	1.05E-07	1.15E-03	1.61E-04	8.30E-06	8.06E-03
IN	IN-BN222	72.39	7.03E+01	--	--	1.09E-07	4.19E-03	1.10E+01	3.15E+02	7.17E+01	2.63E+02	5.62E-03	--	1.17E-07	1.93E-10	4.60E-08	1.34E-14	2.78E-07	5.72E-04	1.41E-05	3.40E-05	1.86E-05
IN	IN-BN510	0.76	1.36E-01	--	--	--	2.91E-06	1.41E-02	4.84E-01	1.13E-01	2.01E-01	9.56E-06	--	--	2.43E-13	1.20E-10	4.76E-17	2.48E-10	1.05E-06	1.14E-08	8.04E-08	3.56E-14
IN	IN-BN510.1	17.86	5.78E+01	4.18E-03	--	3.90E-03	1.58E-03	7.64E+01	5.85E+01	1.34E+01	3.35E+01	1.76E-03	--	4.17E-03	1.01E-10	5.10E-07	3.93E-15	1.20E-07	5.05E-03	7.78E-05	7.96E-06	1.89E-03
IN	IN-BN510.2	12.54	4.12E+01	5.59E-04	--	1.23E-02	3.32E-03	4.40E+00	4.49E+01	1.77E+01	6.93E+01	2.61E-03	--	1.31E-02	2.39E-10	2.84E-07	5.18E-15	2.76E-07	1.68E-03	2.48E-03	1.05E-05	5.39E-04
IN	IN-BN510.3	383.42	2.85E+02	4.49E-02	1.09E+00	9.12E-02	1.36E-02	3.10E+03	4.17E+02	1.03E+02	2.58E+02	1.58E-02	--	9.75E-02	2.72E-05	1.71E-05	2.72E-14	1.63E-02	1.86E-01	4.03E-03	5.80E-05	4.85E-03
IN	IN-BN510.4	2668.88	2.72E+03	1.87E-01	6.58E-01	7.32E-01	8.39E-02	2.35E+03	5.37E+03	1.18E+03	2.60E+03	1.19E-01	--	7.86E-01	5.13E-04	1.42E-05	3.95E-04	3.64E-01	1.52E-01	9.51E-03	5.60E-04	3.23E-01
IN	IN-BN600	113.40	2.01E+01	3.17E-04	--	1.23E-02	3.30E-04	2.38E+00	4.58E+01	1.04E+01	2.26E+01	9.02E-04	--	1.33E-02	1.27E-11	2.25E-08	1.95E-15	1.92E-08	2.09E-04	1.10E-05	4.95E-06	9.63E-04
IN	IN-BN650	6527.20	1.23E+04	1.57E-03	1.27E-01	9.81E-03	2.41E-01	3.05E+02	2.39E+03	5.61E+02	1.92E+03	1.02E-01	--	1.05E-02	1.31E-04	2.81E-05	4.80E-05	9.29E-02	1.98E-01	8.14E-03	2.66E-04	2.57E-01
IN	IN-BN835	24.80	1.04E+00	--	--	5.07E-07	1.22E-04	8.58E+01	1.56E-01	1.01E-01	1.86E-01	1.14E-04	--	5.44E-07	5.74E-12	3.10E-07	1.89E-17	8.23E-09	4.13E-03	9.19E-08	4.79E-08	3.79E-05
IN	IN-BN836	74.07	2.27E-02	--	--	3.04E-04	3.29E-05	5.04E+00	8.88E-03	6.05E-03	2.98E-03	6.96E-06	--	3.25E-04	2.05E-12	2.43E-08	1.43E-18	2.58E-09	2.81E-04	9.13E-07	3.23E-09	1.94E-14
IN	IN-BNINW216	590.95	2.95E+03	7.10E-06	--	8.47E-06	5.38E-02	1.71E+01	2.55E+02	6.53E+01	3.40E+02	2.09E-02	--	9.09E-06	4.17E-05	1.93E-06	1.22E-14	2.96E-02	1.35E-02	2.57E-03	3.10E-05	7.42E-02
IN	IN-BNINW218	95.17	2.32E+00	--	--	9.08E-08	1.61E-03	5.41E-02	1.45E+00	3.06E-01	1.31E+00	4.60E-05	--	9.76E-08	7.80E-11	3.81E-06	5.72E-17	1.11E-07	2.59E-02	4.14E-03	1.45E-07	3.63E-01
IN	IN-BW-515	2.66	3.88E+00	--	--	7.72E-07	6.91E-05	6.30E-01	4.53E+00	2.04E+00	1.01E+01	3.62E-04	--	8.28E-07	3.07E-12	2.82E-08	4.31E-16	4.34E-09	1.96E-04	5.24E-05	1.03E-06	2.99E-05
IN	IN-BW-516	0.38	7.73E-02	--	--	4.50E-08	1.64E-05	7.84E-03	2.25E-01	4.99E-02	1.59E-01	6.22E-06	--	4.82E-08	8.96E-13	1.01E-09	1.05E-17	1.20E-09	6.67E-06	1.95E-06	2.51E-08	4.26E-06
IN	IN-BW-517	0.38	2.77E-02	--	--	--	6.37E-07	2.05E-03	4.16E-02	1.26E-02	4.65E-02	1.67E-06	--	--	2.98E-14	3.73E-10	2.66E-18	4.15E-11	2.44E-06	7.54E-07	6.35E-09	4.42E-15
IN	IN-IC-605	0.38	1.23E-01	--	--	1.55E-04	1.68E-06	--	--	--	--	--	--	1.66E-04	8.08E-14	--	--	1.07E-10	--	--	--	--
IN	IN-ID-RF-S3114	1473.16	5.37E+02	--	--	4.65E-06	9.22E-03	8.22E+00	2.20E+02	5.06E+01	1.75E+02	8.12E-03	--	4.99E-06	3.58E-10	6.96E-07	9.47E-15	5.41E-07	4.93E-03	1.03E-03	2.40E-05	5.27E-02
IN	IN-ID-RF-S3150-A	0.84	7.34E-02	--	--	6.01E-08	4.47E-06	1.76E-02	4.89E-01	1.06E-01	4.68E-01	7.62E-06	--	6.44E-08	2.34E-13	3.35E-10	2.23E-17	3.16E-10	2.58E-06	5.50E-07	5.32E-08	2.01E-14
IN	IN-ID-RF-S5100-A	0.21	3.18E-01	--	--	--	6.11E-06	9.75E-04	4.13E-02	9.16E-03	2.49E-02	1.19E-06	--	--	5.54E-13	9.81E-12	4.53E-18	5.36E-10	7.94E-08	1.06E-09	7.06E-09	4.81E-15
IN	IN-ID-RF-S5126	4.50	4.57E+00	--	--	--	6.87E-05	9.93E-01	2.88E+01	6.53E+00	1.88E+01	6.36E-04	--	--	3.81E-12	5.73E-09	1.91E-15	4.73E-09	6.07E-05	5.67E-07	3.87E-06	1.97E-12
IN	IN-ID-RF-S5300-A	4.50	3.68E-03	--	--	--	6.28E-08	3.18E-04	1.27E-02	2.75E-03	7.15E-03	2.96E-07	--	--	3.59E-15	1.84E-12	8.05E-19	4.42E-12	1.95E-08	2.51E-10	1.63E-09	9.19E-16
IN	IN-ID-SDA-Debris	698.46	5.45E+02	--	--	7.04E-04	1.15E-02	3.86E+01	1.24E+03	2.76E+02	5.90E+02	2.86E-02	--	7.53E-04	1.18E-05	4.29E-05	3.95E-10	7.07E-03	2.46E-01	6.29E-03	1.55E-04	3.67E-01
IN	IN-ID-SDA-Sludge	3064.53	4.75E+03	--	4.04E-02	2.67E-02	1.02E-01	5.73E+01	1.54E+03	3.45E+02	1.16E+03	6.09E-02	--	2.85E-02	9.52E-05	1.82E-04	9.10E-14	5.70E-02	1.05E+00	2.76E-02	1.94E-04	4.03E+00
IN	IN-ID-SDA-Soil	624.75	5.50E+02	--	--	6.45E-03	1.16E-02	1.37E+01	4.06E+02	9.03E+01	2.44E+02	1.31E-02	--	6.89E-03	3.06E-06	3.32E-05	2.39E-07	1.83E-03	1.90E-01	2.73E-02	5.08E-05	5.78E-01
IN	IN-ID-SRP-S3000	2466.64	1.03E+04	2.45E-05	--	3.07E-05	1.89E-01	6.15E+01	9.47E+02	2.41E+02	1.23E+03	7.48E-02	--	3.29E-05	1.44E-04	6.86E-06	4.51E-14	1.02E-01	4.81E-02	9.19E-03	1.14E-04	2.73E-01
IN	IN-IW-608	37.60	2.46E+00	1.56E-10	--	1.19E-07	2.46E-04	6.54E+02	1.97E+00	7.65E-01	9.48E-01	5.98E-04	--	1.28E-07	1.16E-11	2.36E-06	2.97E-06	1.66E-08	3.14E-02	3.11E-08	3.63E-07	1.49E-12
IN	IN-JH-826	1.14	1.04E+01	--	--	--	2.86E-04	--	--	--	--	--	--	--	2.35E-11	--	--	2.46E-08	--	--	--	--
IN	IN-JH-827	1.14	1.67E+01	--	--	--	3.84E-04	--	--	--	2.04E-05	--	--	--	3.25E-11	--	--	3.31E-08	--	--	--	--
IN	IN-MD-842	61.74	3.17E-03	--	--	--	1.64E-08	3.52E+00	6.06E-03	4.14E-03	2.31E-03	4.79E-06	--	--	2.66E-16	1.27E-08	3.82E-06	5.68E-13	1.69E-04	9.55E-11	1.96E-09	1.19E-14
IN	IN-MO-530	0.38	8.62E+01	--	--	--	1.73E-03	4.07E+02	7.46E-01	5.11E-01	1.95E-01	5.91E-04	--	--	8.65E-11	1.88E-06	1.21E-16	1.15E-07	2.22E-02	1.32E-08	2.72E-07	1.65E-12
IN	IN-MO-535	1.14	3.24E+02	--	--	4.93E-04	6.20E-03	1.01E+03	1.86E+00	1.27E+00	4.75E-01	1.47E-03	--	5.27E-04	3.07E-10	4.67E-06	3.00E-16	4.11E-07	5.51E-02	3.29E-08	6.76E-07	4.10E-12
IN	IN-MO-540	3.80	2.30E+01	2.26E-10	--	--	3.83E-04	7.72E+00	7.74E-03	5.29E-03	2.20E-03	6.11E-06	--	--	1.82E-11	3.80E-08	1.25E-18	2.47E-08	4.35E-04	4.50E-06	2.82E-09	1.71E-14
IN	IN-MX-142	6.08	1.39E+01	4.22E-05	--	5.42E-05	5.96E-04	--	2.80E-08	--	--	--	--	5.76E-05	5.30E-11	5.35E-09	--	5.42E-08	2.53E-05	8.15E-06	--	--
IN	IN-RF-005	1.26	1.89E-02	--	--	--	6.37E-07	4.06E-03	6.90E-02	1.23E-02	2.13E-02	1.14E-06	--	--	2.79E-14	1.47E-11	2.29E-18	4.07E-11	1.95E-07	1.09E-09	5.81E-09	2.82E-15
IN	IN-RF-090	15.12	1.45E-01	--	--	--	2.67E-06	6.46E-03	6.35E-01	1.16E-01	2.51E-01	9.66E-06	--	--	1.06E-13	8.36E-08	2.17E-17	1.59E-10	5.69E-04	2.97E-05	5.51E-08	7.74E-03
IN	IN-RF-311	2.94	1.52E+01	--	--	6.12E-07	2.53E-04	3.83E+00	7.03E+01	1.60E+01	2.26E+01	1.20E-03	--	6.50E-07	1.68E-11	2.70E-08	5.65E-15	1.90E-08	2.60E-04	1.52E-06	1.04E-05	4.10E-12
IN	IN-RF-361	0.42	4.63E+00	--	--	--	1.03E-04	7.72E-01	2.28E+01	5.00E+00	5.53E+00	3.75E-04	--	--	7.49E-12	5.45E-09	1.77E-15	8.26E-09	5.24E-05	4.94E-07	3.26E-06	1.28E-12
IN	IN-RF-393	8.40	3.20E+01	--	--	--	5.35E-04	7.21E+00	1.50E+02	3.71E+01	8.66E+01	3.47E-03	--	--	2.82E-11	3.78E-08	9.79E-15	3.62E-08	4.20E-04	2.81E-06	2.09E-05	1.02E-11

Table 5-1. CH Volume (m^3) and Activity (Ci) By Waste Stream and Radionuclide Decayed thru 2033
(Continued)

Site	Waste Stream ID	Scaled Vol (m^3)	Am-241	Am-243	Cm-244	Cs-137	Np-237	Pu-238	Pu-239	Pu-240	Pu-241	Pu-242	Pu-244	Sr-90	Th-229	Th-230	Th-232	U-233	U-234	U-235	U-236	U-238
IN	IN-RF-409	13.44	4.44E+02	--	--	--	5.07E-03	1.08E+01	2.10E+02	4.87E+01	1.51E+02	8.67E-03	--	--	1.72E-10	3.90E-08	9.11E-15	2.71E-07	5.20E-04	3.32E-06	2.31E-05	2.15E-11
IN	IN-RF-410	8.40	8.82E+01	--	--	3.12E-06	1.64E-03	1.22E+00	1.90E+01	4.47E+00	2.37E+01	1.31E-03	--	3.33E-06	8.86E-11	6.38E-09	1.18E-15	1.13E-07	7.09E-05	3.55E-07	2.52E-06	3.86E-12
IN	IN-RF-411	8.82	5.42E+01	--	--	--	8.63E-04	4.99E+00	1.55E+02	3.58E+01	8.23E+01	3.66E-03	--	--	3.30E-11	1.81E-08	6.70E-15	5.01E-08	2.40E-04	2.44E-06	1.70E-05	9.09E-12
IN	IN-RF-412	0.42	4.16E+00	--	--	--	9.09E-05	1.39E-01	1.73E+00	2.87E-01	1.00E+00	1.50E-04	--	--	1.04E-11	1.77E-09	1.77E-16	8.95E-09	1.28E-05	4.94E-08	2.47E-07	6.75E-13
IN	IN-RF-414	2.10	1.46E+01	--	--	--	2.34E-04	1.90E+00	4.95E+01	1.14E+01	3.09E+01	1.18E-03	--	--	8.97E-12	7.02E-09	2.12E-15	1.36E-08	9.25E-05	1.11E-06	5.38E-06	2.94E-12
IN	IN-RF-420	2.10	5.88E+00	--	--	--	9.11E-05	6.10E-01	2.75E+01	5.92E+00	2.04E+01	5.72E-04	--	--	3.48E-12	1.05E-08	1.11E-15	5.28E-09	8.57E-05	1.86E-05	2.81E-06	1.42E-12
IN	IN-RF-421	31.92	2.24E+02	--	--	--	4.37E-03	2.51E+01	8.54E+02	1.93E+02	4.48E+02	1.80E-02	--	--	1.98E-10	1.03E-07	4.07E-14	2.78E-07	1.29E-03	1.43E-05	9.70E-05	3.49E-05
IN	IN-RF-422	3.78	5.56E+00	--	--	--	1.02E-04	5.99E-01	2.11E+01	4.92E+00	1.09E+01	4.50E-04	--	--	7.56E-12	4.64E-09	1.90E-15	8.14E-09	4.26E-05	4.79E-07	3.35E-06	1.61E-12
IN	IN-RF-697	7.98	7.07E-01	--	--	3.71E-06	1.16E-05	5.34E-02	1.38E+00	3.07E-01	8.68E-01	4.02E-05	--	3.98E-06	5.03E-13	2.76E-10	6.48E-17	7.17E-10	3.11E-06	2.31E-08	1.54E-07	1.06E-13
IN	IN-RF-745	0.42	1.41E-01	--	--	--	3.01E-06	2.13E-04	9.09E-03	2.02E-03	5.28E-03	2.65E-07	--	--	1.38E-13	3.67E-10	4.26E-19	1.93E-10	2.35E-06	7.58E-07	1.02E-09	6.99E-16
IN	IN-RF-753	10.92	1.50E+00	--	--	--	3.21E-05	8.08E-02	6.24E-01	1.50E-01	2.27E-01	3.60E-05	--	--	1.63E-12	1.98E-08	3.55E-17	2.17E-09	1.22E-04	3.05E-05	7.99E-08	3.60E-04
IN	IN-RF-823	0.42	1.94E-03	--	--	--	1.13E-08	7.67E-04	3.25E-02	7.20E-03	1.97E-02	9.47E-07	--	--	3.58E-16	9.77E-12	4.43E-18	5.26E-13	7.06E-08	9.28E-10	6.19E-09	4.26E-15
IN	IN-RF-990	22.68	7.66E-01	--	--	--	1.99E-05	2.14E-02	5.10E-01	1.16E-01	3.85E-01	1.61E-05	--	--	8.38E-13	5.33E-08	2.17E-17	1.24E-09	3.63E-04	7.76E-05	5.49E-08	1.97E-03
IN	IN-SD-178	38.64	2.60E+01	--	--	4.29E-05	5.07E-04	1.30E-02	5.28E-01	1.17E-01	4.16E-01	1.53E-05	--	4.60E-05	2.03E-11	4.66E-07	2.19E-17	3.04E-08	3.17E-03	1.55E-04	5.55E-08	4.37E-02
IN	WA-BNINW216	22.15	6.24E+01	--	--	--	1.24E-03	3.16E-01	3.78E+00	9.99E-01	5.92E+00	6.12E-04	--	--	7.38E-11	1.41E-07	2.92E-16	8.99E-08	7.77E-04	1.69E-04	5.92E-07	2.21E-03
IN	WA-ID-RF-S3114	49.50	5.27E-01	--	--	--	1.13E-05	7.19E-02	2.24E+00	4.98E-01	1.19E+00	5.07E-05	--	--	6.38E-13	5.58E-08	1.32E-16	8.03E-10	3.21E-04	8.30E-06	2.81E-07	3.91E-04
IN	WC-BN510.3	13.30	7.68E+00	--	--	2.14E-04	2.89E-04	5.42E+01	5.37E+00	1.54E+00	7.62E+00	4.46E-04	--	3.60E-04	1.79E-11	3.10E-07	4.05E-16	2.20E-08	3.30E-03	4.32E-05	8.65E-07	6.17E-05
IN	WP-BN004	414.06	4.75E+02	--	7.79E-01	1.55E-03	1.83E-01	4.88E+01	1.38E+03	3.12E+02	9.53E+02	2.91E-02	--	2.54E-03	4.70E-04	2.68E-06	1.11E-13	2.43E-01	1.48E-02	2.62E-03	2.04E-04	3.13E-03
IN	WP-BN161	58.39	5.51E+01	--	--	--	1.03E-03	8.04E+00	2.34E+02	5.33E+01	1.10E+02	4.31E-03	--	--	1.00E-10	9.27E-08	2.84E-14	9.36E-08	7.02E-04	8.95E-06	4.26E-05	1.80E-11
IN	WP-BN211	522.34	5.35E+02	5.11E-06	--	7.65E-07	2.97E-02	7.22E+01	2.07E+03	4.76E+02	9.46E+02	3.99E-02	--	1.25E-06	7.22E-05	1.50E-06	2.54E-13	3.04E-02	9.00E-03	6.82E-04	3.81E-04	4.60E-06
IN	WP-BN222	113.75	9.21E+01	--	--	--	2.22E-01	1.39E+01	4.06E+02	9.21E+01	2.10E+02	7.32E-03	--	--	3.08E-08	1.78E-07	4.91E-14	2.60E-05	1.29E-03	3.19E-05	7.37E-05	3.07E-11
IN	WP-BN243	149.96	4.33E+01	--	4.83E-01	7.78E-08	2.98E-03	4.62E+00	1.18E+02	2.65E+01	5.63E+01	2.65E-03	--	1.26E-07	3.79E-10	2.75E-07	1.42E-14	3.27E-07	1.30E-03	2.44E-04	2.12E-05	1.11E-11
IN	WP-BN252	178.58	2.23E+02	--	--	2.45E-07	6.30E-02	3.27E+01	1.14E+03	2.44E+02	6.68E+02	2.65E-02	--	3.74E-07	8.59E-09	4.77E-07	1.30E-13	7.27E-06	3.26E-03	2.64E-04	1.95E-04	1.11E-10
IN	WP-BN296	474.54	7.22E+02	--	4.58E-01	5.11E-06	4.52E-02	6.99E+01	1.78E+03	3.95E+02	7.98E+02	4.00E-02	--	8.81E-06	1.34E-05	1.00E-06	2.11E-13	5.64E-03	6.89E-03	3.97E-04	3.16E-04	6.75E-04
IN	WP-BN304	304.51	5.73E+01	--	--	2.32E-04	2.87E-03	1.26E+04	3.04E+01	2.29E+01	7.45E+01	1.94E-02	--	4.53E-04	3.53E-10	1.38E-04	1.22E-14	3.07E-07	1.07E+00	4.40E-05	1.83E-05	2.39E-02
IN	WP-BN510	9632.16	4.04E+03	9.56E-04	1.36E+00	7.19E-04	1.74E-01	4.12E+03	1.36E+04	2.95E+03	7.62E+03	2.79E-01	--	1.24E-03	1.75E-03	5.26E-05	1.14E-12	8.66E-01	3.91E-01	1.67E-02	2.01E-03	3.98E-02
IN	WP-BN510.1	3412.52	3.46E+03	8.20E-02	3.45E+00	5.42E-02	1.01E-01	5.30E+03	6.19E+03	1.45E+03	4.28E+03	2.13E-01	--	9.60E-02	8.67E-05	3.79E-05	4.25E-13	4.93E-02	3.64E-01	7.02E-03	8.62E-04	6.38E-02
IN	WP-BN510.2	75.90	1.75E+02	2.45E-03	--	2.78E-02	1.29E-02	4.29E+02	1.00E+02	3.79E+01	1.43E+02	9.69E-03	--	5.09E-02	9.27E-10	3.98E-06	1.11E-14	1.07E-06	3.44E-02	4.55E-03	2.24E-05	1.42E-02
IN	WP-BN510.3	9.12	3.96E+01	--	--	8.81E-04	8.03E-03	9.14E+01	2.13E+01	9.49E+00	2.69E+01	2.40E-03	--	1.69E-03	1.87E-05	5.78E-07	2.78E-15	1.06E-02	5.86E-03	5.59E-04	5.62E-06	2.22E-04
IN	WP-BN600	2.31	1.25E-02	--	--	--	7.28E-07	6.25E-03	4.71E-02	1.08E-02	2.79E-02	1.26E-06	--	--	6.18E-14	4.41E-11	3.82E-18	6.53E-11	4.24E-07	1.02E-09	7.04E-09	4.29E-15
IN	WP-BN835	1089.70	4.27E+01	--	--	5.64E-05	6.95E-03	1.53E+03	3.56E+00	2.29E+00	1.38E+01	2.33E-03	--	9.51E-05	7.38E-10	1.30E-05	9.64E-16	7.06E-07	1.14E-01	2.18E-07	1.63E-06	2.54E-04
IN	WP-BN836	1782.69	2.50E+00	--	--	2.94E-04	2.26E-03	1.54E+03	2.79E+00	1.89E+00	3.40E+00	2.16E-03	--	4.68E-04	2.07E-10	1.09E-05	6.67E-16	2.14E-07	1.04E-01	3.49E-05	1.23E-06	1.34E-05
IN	WP-BNINW216	6186.58	4.05E+04	--	--	6.02E-05	7.34E-01	2.65E+02	2.79E+03	7.31E+02	3.67E+03	4.21E-01	--	9.53E-05	1.92E-04	4.68E-05	2.14E-13	1.09E-01	2.62E-01	4.07E-02	4.33E-04	1.16E+00
IN	WP-BNINW218	607.74	4.91E+01	--	--	6.56E-06	2.67E-01	2.30E+00	5.53E+01	1.15E+01	4.43E+01	1.73E-03	--	1.04E-05	2.46E-08	2.03E-05	4.07E-15	2.55E-05	1.01E-01	8.54E-03	7.51E-06	9.66E-01
IN	WP-ID-AECHDM	18.05	1.40E+01	2.71E-04	--	1.34E-02	1.49E-02	4.11E+00	1.80E+01	5.64E+00	1.63E+01	3.53E-04	--	1.30E-02	1.13E-09	2.79E-07	1.65E-15	1.29E-06	1.64E-03	1.45E-05	3.34E-06	2.71E-03
IN	WP-ID-AECHHM	8.38	7.84E+00	1.57E-10	--	2.37E-02	2.04E-03	2.99E-01	5.41E+00	8.73E-01	3.28E+00	3.67E-05	--	2.29E-02	1.85E-10	1.85E-07	3.09E-16	1.92E-07	9.26E-04	2.36E-05	5.69E-07	4.71E-04
IN	WP-ID-GEVNC-02	1.26	3.68E-02	--	--	2.55E-02	2.78E-07	3.77E-04	3.15E-03	1.46E-03	5.59E-03	8.67E-07	--	6.81E-03	4.96E-11	1.29E-09	1.15E-16	2.46E-08	6.10E-06	2.18E-07	1.02E-07	1.11E-07
IN	WP-ID-LBNL-S5400	0.21	1.04E-01	--	--	--	1.28E-03	--	--	--	--	--	--	--	1.18E-10	--	--	1.22E-07	--	--	--	--
IN	WP-ID-LL-M001-S5400	43.24	8.48E+01	2.05E-05	2.47E+00	8.49E-05	2.00E-03	9.33E+01	1.75E+02	4.39E+01	2.27E+02	6.64E-03	--	8.13E-05	4.52E-05	3.87E-06	1.70E-14	2.24E-02	2.15E-02	4.39E-04	3.00E-05	1.83E-04
IN	WP-ID-LL-T004-S3141	3.76	2.04E+01	--	--	1.11E-06	2.83E-04	2.51E-01	6.96E+00	1.69E+00	9.00E+00	2.50E-04	--	4.18E-07	1.83E-11	1.95E-09	6.53E-16	2.06E-08	1.79E-05	1.58E-07	1.15E-06	8.94E-13
IN	WP-ID-LL-W019-S3900	5.97	7.91E+00	--	--	1.49E-07	1.34E-04	5.96E-01	7.10E+00	1.99E+00	1.57E+01	3.58E-04	--	1.04E-07	2.25E-05	4.21E-08	7.69E-16	1.11E-02	2.20E-04	5.15E-06	1.35E-06	1.28E-12
IN	WP-ID-NRD.1	18.27	5.84E+02	--	--	3.35E-05	9.38E-03	--	--	6.38E-01	--	--	--	3.56E-05	6.05E-10	--	2.26E-16	6.93E-07	--	--	4.16E-07	--
IN	WP-ID-NT-RF-DECON	0.42	2.06E-01	--	--	1.51E-06	1.65E-05	6.73E-02	3.67E-01	7.43E-02	2.67E-01	2.30E-05	--	1.60E-06	1.69E-12	5.71E-10	3.13E-17	1.63E-09	5.02E-06	8.69E-09	5.29E-08	8.55E-14
IN	WP-ID-NTLBL-S3900	1.88	2.23E-01	--	--	3.98E-06	2.35E-05	8.62E-02	5.89E-01	1.36E-01	5.27E-01	4.12E-05	--	4.23E-06	2.46E-12	7.31E-10	5.74E-17	2.36E-09	6.43E-06	1.39E-08	9.69E-08	1.54E-13
IN	WP-ID-NTLBL-S5400	2.09	1.87E+00	--	--	3.59E-07	3.43E-04	2.81E-01	5.79E-02	6.05E-02	4.11E+00	2.14E-04	--	3.81E-07	3.66E-11	2.38E-09	2.55E-17	3.49E-08	2.09E-05	1.37E-09	4.31E-08	7.97E-13
IN	WP-ID-NTLLLBL-S5400	1.88	1.01E-01	2.96E-05	--	--	7.50E-07	7.05E-03	2.17E-01	4.61E-02	2.29E-01	8.66E-06	--	--	2.65E-14	5.98E-11	1.94E-17	3.81E-11	5.26E-07	5.13E-09	3.28E-08	3.23E-14
IN	WP-ID-NTLLNL-S3900	18.02	2.16E+01	--	4.37E-02	4.63E-04	6.12E-04	1.12E+00	5.47E+00	1.34E+00	4.20E+00	1.89E-04	--	4.91E-04	4.03E-05	1.09E-07	5.65E-16	1.91E-02	5.35E-04	2.06E-05	9.54E-07	5.42E-05

Table 5-1. CH Volume (m^3) and Activity (Ci) By Waste Stream and Radionuclide Decayed thru 2033
(Continued)

Site	Waste Stream ID	Scaled Vol (m^3)	Am-241	Am-243	Cm-244	Cs-137	Np-237	Pu-238	Pu-239	Pu-240	Pu-241	Pu-242	Pu-244	Sr-90	Th-229	Th-230	Th-232	U-233	U-234	U-235	U-236	U-238
IN	WP-ID-NTLLNL-S5400	139.55	3.93E+01	2.67E-04	5.59E+00	5.17E-06	1.41E-03	8.64E+00	4.03E+01	1.13E+01	2.18E+02	5.04E-03	--	5.48E-06	1.01E-04	2.19E-07	4.76E-15	4.77E-02	1.30E-03	3.13E-05	8.04E-06	1.88E-11
IN	WP-ID-NTLRC-S5400	0.21	3.34E-01	--	--	--	6.91E-05	4.74E-02	1.49E+00	3.26E-01	6.24E-01	2.76E-05	--	--	7.39E-12	4.04E-08	1.37E-16	7.05E-09	1.85E-04	6.27E-06	2.32E-07	1.07E-05
IN	WP-ID-NTS-EGG-HET	0.21	1.54E-01	--	--	--	2.47E-06	5.77E-02	1.42E+00	2.79E-01	3.60E-01	4.37E-05	--	--	1.87E-13	4.90E-10	1.18E-16	1.97E-10	4.30E-06	3.36E-08	1.98E-07	1.63E-13
IN	WP-ID-NTS-ITRI-S5310	0.21	1.16E-04	--	--	--	3.23E-08	7.65E-02	9.59E-03	2.57E-04	9.11E-04	4.26E-07	--	--	3.48E-15	6.49E-10	1.08E-19	3.32E-12	5.70E-06	2.27E-10	1.83E-10	1.59E-15
IN	WP-ID-NTS-TTR-HET	0.21	4.70E-03	--	--	2.90E-07	2.78E-07	8.67E-04	7.52E-02	5.85E-03	1.31E-02	1.61E-07	--	3.08E-07	2.80E-14	7.36E-12	2.46E-18	2.71E-11	6.46E-08	1.78E-09	4.16E-09	5.98E-16
IN	WP-ID-NTVERB-S5400	3.76	7.40E+00	1.69E-04	6.57E-01	--	1.05E-04	5.51E-01	2.68E+00	1.20E+00	3.68E+01	1.75E-04	--	--	7.70E-12	4.67E-09	5.06E-16	8.17E-09	4.11E-05	6.33E-08	8.54E-07	6.52E-13
IN	WP-ID-RF-BNL-ASH	0.21	1.63E-01	--	--	--	3.20E-06	1.99E-02	7.32E-01	1.68E-01	2.97E-01	1.34E-05	--	--	3.35E-13	2.35E-10	9.62E-17	3.01E-10	1.76E-06	2.02E-08	1.39E-07	5.84E-14
IN	WP-ID-RF-S3114	3457.50	7.76E+01	4.41E-06	--	1.19E-05	1.93E-03	9.26E+00	2.16E+02	4.57E+01	1.64E+02	5.05E-03	--	6.99E-05	1.02E-10	2.76E-06	1.08E-14	1.34E-07	1.69E-02	4.45E-04	2.44E-05	2.52E-02
IN	WP-ID-RF-S3150-A	247.56	4.58E+01	--	--	1.20E-05	2.16E-03	6.69E+00	1.71E+02	3.73E+01	1.37E+02	3.16E-03	--	1.97E-05	1.80E-10	8.05E-07	1.32E-14	1.91E-07	4.20E-03	1.11E-04	2.43E-05	3.03E-04
IN	WP-ID-RF-S5100-A	641.62	1.69E+02	--	--	8.23E-06	2.92E-03	1.74E+01	6.32E+02	1.34E+02	2.53E+02	1.15E-02	--	1.19E-05	6.46E-06	6.52E-07	6.61E-14	2.83E-03	3.41E-03	1.04E-04	1.03E-04	4.50E-06
IN	WP-ID-RF-S5126	250.79	1.90E+02	--	--	6.94E-06	4.17E-03	2.61E+01	8.73E+02	2.03E+02	4.58E+02	1.85E-02	--	1.09E-05	4.98E-04	4.25E-06	1.00E-13	2.18E-01	1.88E-02	3.46E-05	1.56E-04	1.60E-03
IN	WP-ID-RF-S5300-A	2792.80	9.24E+01	1.71E-08	2.37E-01	1.55E-05	4.69E-03	7.07E+00	2.49E+02	5.59E+01	1.42E+02	5.41E-03	--	1.98E-05	5.50E-04	4.46E-06	1.80E-14	2.98E-01	2.33E-02	6.05E-04	3.48E-05	8.79E-04
IN	WP-ID-SA-T001	5.88	6.21E+00	3.02E-02	2.16E+00	1.63E-07	6.75E-04	6.89E+00	4.52E+00	3.65E-01	1.03E+00	4.23E-05	--	1.57E-07	5.95E-11	1.74E-02	1.28E-16	6.22E-08	9.49E-04	1.07E-05	2.36E-07	7.99E-04
IN	WP-ID-SDA-DEBRIS	542.17	3.86E+02	--	--	4.91E-04	8.32E-03	2.72E+01	8.89E+02	1.98E+02	3.86E+02	2.72E-02	--	5.24E-04	9.61E-06	2.38E-05	6.39E-14	5.21E-03	1.24E-01	3.13E-03	1.23E-04	2.42E-01
IN	WP-ID-SDA-SLUDGE	5758.48	8.39E+03	--	6.73E-02	4.48E-02	1.86E-01	9.81E+01	2.66E+03	5.97E+02	1.85E+03	1.05E-01	--	3.92E+00	1.87E-04	3.08E-04	1.93E-13	1.01E-01	1.60E+00	4.20E-02	3.71E-04	6.90E+00
IN	WP-ID-SDA-SOIL	1073.36	6.89E+02	--	--	7.88E-03	1.51E-02	1.68E+01	5.13E+02	1.14E+02	2.80E+02	1.63E-02	--	8.39E-03	4.38E-06	4.43E-05	3.67E-14	2.37E-03	2.30E-01	5.97E-03	7.08E-05	7.02E-01
IN	WP-ID-SNL-HCF-S5400	2.72	4.90E-01	--	1.64E-03	1.78E-02	2.81E-03	1.86E-01	5.69E-01	1.56E-02	2.34E-01	1.33E-03	--	1.37E-02	8.23E-08	2.67E-06	1.89E-13	4.27E-05	1.32E-02	4.28E-04	1.74E-04	1.54E-04
IN	WP-ID-SNL-SOURCES-S5400	0.63	1.33E-01	4.82E-08	--	1.62E-07	2.19E-06	1.30E-03	2.12E-03	2.73E-03	4.49E-03	2.07E-06	--	--	1.43E-13	9.19E-12	9.66E-19	1.63E-10	8.83E-08	4.60E-11	1.78E-09	7.06E-15
IN	WP-INW161.001	19.32	3.13E+01	--	--	--	2.83E-04	4.29E+00	1.57E+02	3.55E+01	8.87E+01	3.52E-03	--	--	1.59E-11	1.50E-07	2.49E-14	1.81E-08	7.30E-04	9.24E-05	3.26E-05	5.56E-06
IN	WP-INW169.001	19.32	5.46E+00	--	--	--	5.07E-05	5.34E-01	1.97E+01	4.38E+00	1.24E+01	5.91E-04	--	--	2.92E-12	9.26E-08	3.08E-15	3.29E-09	3.50E-04	7.29E-05	4.03E-06	4.37E-06
IN	WP-INW198.001	49.56	7.60E+00	--	--	--	6.86E-05	9.66E-01	3.78E+01	8.42E+00	2.16E+01	8.87E-04	--	--	7.08E-07	5.46E-08	5.92E-15	2.60E-04	2.37E-04	3.68E-05	7.74E-06	5.90E-05
IN	WP-INW211.001	306.79	9.31E+02	--	--	--	8.41E-03	1.07E+02	3.64E+03	8.09E+02	2.64E+03	1.40E-01	--	--	3.53E-05	2.65E-06	5.69E-13	1.30E-02	1.44E-02	1.05E-03	7.43E-04	1.47E-03
IN	WP-INW216.001	1256.77	5.49E+04	--	--	--	5.64E-01	9.13E+01	3.26E+03	7.30E+02	2.31E+03	1.18E-01	--	--	9.12E-05	1.78E-04	5.13E-13	3.35E-02	6.30E-01	1.03E-01	6.71E-04	3.89E+00
IN	WP-INW218.001	1117.41	8.22E+02	--	--	--	8.31E-03	1.36E+01	4.97E+02	1.11E+02	3.48E+02	1.70E-02	--	--	3.03E-05	2.64E-04	7.80E-14	1.11E-02	9.26E-01	1.02E-01	1.02E-04	8.75E+00
IN	WP-INW222.001	65.73	6.59E+01	--	--	--	5.99E-04	8.04E+00	2.84E+02	6.37E+01	1.77E+02	7.40E-03	--	--	3.40E-11	3.62E-07	4.48E-14	3.84E-08	1.65E-03	1.13E-04	5.85E-05	7.02E-03
IN	WP-INW243.001	75.60	8.42E+01	--	--	--	7.94E-04	8.35E+00	2.37E+02	5.28E+01	1.64E+02	6.81E-03	--	--	6.73E-06	6.47E-07	3.71E-14	2.47E-03	2.67E-03	4.55E-04	4.85E-05	3.18E-04
IN	WP-INW247.001R1	118.02	1.06E+02	--	--	--	9.62E-04	1.99E+01	4.15E+02	9.44E+01	2.99E+02	7.92E-03	--	--	2.05E-05	2.99E-07	6.64E-14	7.54E-03	1.99E-03	1.87E-05	8.68E-05	3.81E-11
IN	WP-INW252.001	61.53	7.53E+01	--	--	--	6.48E-04	9.73E+00	3.01E+02	6.83E+01	2.87E+02	6.81E-03	--	--	3.50E-11	3.62E-07	4.80E-14	4.04E-08	1.73E-03	2.34E-04	6.28E-05	3.28E-11
IN	WP-INW276.001	10.29	7.07E+00	--	--	--	6.83E-05	1.87E+00	3.17E+01	7.23E+00	2.31E+01	6.55E-04	--	--	4.65E-12	3.59E-08	6.48E-15	4.77E-09	2.13E-04	1.36E-06	7.50E-06	3.55E-12
IN	WP-INW276.002	16.17	1.12E+01	--	--	--	1.09E-04	2.81E+00	4.77E+01	1.08E+01	3.45E+01	9.82E-04	--	--	2.24E-06	5.48E-08	9.72E-15	7.30E-04	3.23E-04	2.41E-06	1.13E-05	5.33E-12
IN	WP-INW276.003	188.37	4.19E+02	--	--	--	3.63E-03	1.06E+02	1.73E+03	3.92E+02	1.54E+03	3.66E-02	--	--	1.42E-04	1.60E-06	2.76E-13	5.21E-02	1.06E-02	9.18E-05	3.61E-04	1.12E-06
IN	WP-INW276.004	47.25	9.83E+01	--	--	--	8.69E-04	2.21E+01	3.67E+02	8.34E+01	3.22E+02	7.65E-03	--	--	1.23E-04	3.64E-07	5.87E-14	4.53E-02	2.33E-03	3.95E-05	7.67E-05	3.68E-11
IN	WP-INW296.001	98.70	1.76E+02	--	--	--	1.65E-03	2.34E+01	5.13E+02	1.16E+02	3.72E+02	1.10E-02	--	--	2.76E-05	5.35E-07	8.16E-14	1.01E-02	2.99E-03	1.67E-04	1.07E-04	3.96E-04
KN	KN-B234TRU	438.01	1.03E+02	--	--	--	8.15E-04	9.63E+00	3.51E+02	3.51E+02	1.56E+02	--	--	--	2.77E-03	1.95E-01	6.51E-02	1.26E+00	1.26E+00	2.39E-01	2.39E-01	3.08E-02
LA	LA-CIN01.001	727.09	4.88E+04	2.13E+00	--	1.50E-03	5.28E-01	5.58E+03	1.02E+04	2.76E+03	2.55E+04	3.47E+00	1.71E-06	1.47E-03	4.05E-04	1.55E-04	1.25E-03	2.88E-01	1.19E+00	1.08E-02	6.36E-03	4.01E-01
LA	LA-CIN02.001	121.05	2.88E+02	1.19E-03	--	3.24E-05	3.09E-03	2.48E+01	3.74E+02	1.46E+01	4.70E+01	2.16E-03	--	2.72E-05	1.13E-05	6.31E-07	3.84E-15	6.34E-07	4.31E-03	7.80E-04	8.20E-06	4.85E-05
LA	LA-CIN03.001	2.94	4.26E-02	2.20E-05	--	8.01E-05	1.59E-05	1.08E-01	6.38E-01	3.99E-02	1.33E-01	1.76E-06	--	7.78E-05	5.95E-07	9.27E-08	1.05E-17	1.31E-09	5.33E-04	1.27E-05	2.25E-08	5.05E-04
LA	LA-LA225D	4.62	4.17E-01	3.52E-04	--	2.06E-05	3.76E-05	2.77E-01	8.75E-01	1.69E-01	6.24E-01	1.18E-05	--	2.00E-05	1.80E-06	1.41E-08	1.15E-16	3.01E-09	8.85E-05	6.69E-07	1.70E-07	9.90E-07
LA	LA-LA238HONR	1.88	1.84E-01	--	--	--	9.57E-07	1.38E+02	9.57E-02	4.81E-02	1.48E+00	3.97E-05	--	--	1.95E-14	3.88E-06	1.27E-17	3.65E-11	2.61E-02	6.63E-09	2.71E-08	1.17E-13
LA	LA-LA238HOR	0.21	1.10E-01	--	--	--	5.41E-07	8.40E+01	5.77E-02	2.90E-02	9.35E-01	2.39E-05	--	--	9.92E-15	2.19E-06	6.87E-18	1.96E-11	1.55E-02	3.94E-09	1.55E-08	6.68E-14
LA	LA-LAMHD02238	1.68	1.62E-02	--	--	--	7.97E-08	1.29E+01	8.73E-03	4.32E-03	1.38E-01	3.54E-06	--	--	1.46E-15	3.36E-07	1.02E-18	2.88E-12	2.37E-03	5.91E-10	2.30E-09	9.87E-15
LA	LA-LAMIN04S	0.84	2.58E+01	--	--	--	1.37E-04	2.58E+00	2.48E+01	1.06E+01	1.33E+02	3.17E-03	--	--	2.66E-12	5.06E-08	2.50E-15	5.14E-09	3.74E-04	1.34E-06	5.64E-06	8.84E-12
LA	LA-LANHD01	29.83	2.47E+00	--	--	--	1.14E-05	7.31E-01	2.39E+01	1.94E+00	1.82E+01	1.14E-02	1.25E-08	--	1.71E-13	1.45E-08	3.64E-16	3.74E-10	1.16E-04	6.73E-07	9.21E-07	8.98E-05
LA	LA-LANHD02238	6.90	7.51E-01	--	--	--	3.70E-06	5.75E+02	3.95E-01	1.99E-01	6.40E+00	1.64E-04	--	--	6.79E-14	1.50E-05	4.70E-17	1.34E-10	1.06E-01	2.69E-08	1.06E-07	4.57E-13
LA	LA-LANIN03NC	0.42	5.43E+01	--	--	--	3.11E-04	1.79E+00	1.04E+01	6.69E+00	8.95E+01	2.40E-03	--	--	6.33E-12	4.96E-08	1.59E-15	1.20E-08	3.47E-04	5.75E-07	3.57E-06	6.71E-12
LA	LA-MHD01.001	5858.56	1.06E+04	4.56E-01	--	1.52E-03	1.61E-01	2.43E+05	2.69E+04	7.29E+03	4.46E+04	8.87E+00	6.31E-06	1.48E-03	2.21E-04	5.57E-03	1.87E-12	1.57E-01	4.36E+01	3.65E-03	4.10E-03	4.68E-02

Table 5-1. CH Volume (m^3) and Activity (Ci) By Waste Stream and Radionuclide Decayed thru 2033
(Continued)

Site	Waste Stream ID	Scaled Vol (m^3)	Am-241	Am-243	Cm-244	Cs-137	Np-237	Pu-238	Pu-239	Pu-240	Pu-241	Pu-242	Pu-244	Sr-90	Th-229	Th-230	Th-232	U-233	U-234	U-235	U-236	U-238
LA	LA-MHD03.001	1563.27	8.90E+02	1.01E-01	1.86E+03	9.18E+00	8.81E-02	1.62E+03	4.39E+03	1.04E+03	7.13E+03	8.63E-02	--	8.42E+00	4.15E-09	3.87E-05	2.05E-13	5.95E-06	3.01E-01	1.37E-03	5.07E-04	3.47E-04
LA	LA-MHD04.001	100.42	4.62E+01	2.60E-04	--	6.59E-06	8.98E-04	1.95E+02	1.14E+02	3.67E+01	1.05E+02	5.57E-03	--	6.43E-06	3.49E-06	5.45E-06	6.88E-15	2.48E-03	4.16E-02	2.23E-05	1.74E-05	1.38E-11
LA	LA-MHD05-ITRI.001	4.61	1.89E+01	4.13E-05	1.83E+00	3.68E-07	2.37E-04	3.18E-02	7.74E-01	1.55E-01	5.91E-01	8.72E-06	--	3.58E-07	3.42E-07	1.64E-10	4.01E-17	1.47E-08	1.84E-06	1.45E-08	8.60E-08	2.57E-14
LA	LA-MHD08.001	4.39	8.41E-01	2.95E-02	--	6.89E-05	7.10E-05	3.50E-02	3.21E-02	1.74E-02	1.99E-01	5.03E-04	--	6.70E-05	4.68E-12	7.21E-10	4.59E-18	5.65E-09	5.11E-06	6.01E-10	9.80E-09	1.48E-12
LA	LA-MHD09.001	24.78	3.37E+00	3.57E-05	--	3.91E-06	9.62E-05	3.28E+00	2.05E+00	6.43E-01	4.66E+00	5.13E-04	--	3.80E-06	5.73E-12	1.10E-07	1.70E-16	7.10E-09	7.21E-04	4.29E-06	3.62E-07	1.51E-12
LA	LA-MIN02-V.001	49.54	8.94E+02	9.68E-02	--	2.91E-05	1.55E-02	8.83E+01	2.94E+02	6.57E+01	3.05E+02	6.27E-03	--	2.67E-05	6.01E-10	3.16E-06	1.23E-14	9.08E-07	2.35E-02	1.66E-04	3.12E-05	2.08E-03
LA	LA-MIN03-NC.001	59.82	3.24E+01	9.33E-05	--	3.61E-04	2.34E-04	6.37E+00	1.92E+01	2.70E-01	2.04E+00	7.61E-05	--	3.41E-04	5.95E-06	1.49E-07	4.24E-16	1.03E-08	1.17E-03	6.18E-05	6.01E-07	1.01E-04
LA	LA-MIN04-S.001	5.65	5.60E+01	2.34E-02	--	1.82E-04	7.63E-04	1.96E+00	6.45E+01	1.59E+01	5.41E+01	1.06E-02	--	1.79E-04	3.97E-11	9.96E-08	4.66E-15	5.04E-08	6.00E-04	1.30E-05	9.45E-06	6.50E-04
LA	LA-MIN05-V.001	2.72	6.75E-01	1.48E-05	--	2.96E-06	5.72E-03	2.19E-01	4.33E+00	1.01E+00	3.46E+00	6.93E-05	--	2.87E-06	3.97E-10	8.34E-08	2.67E-16	4.73E-07	4.84E-04	1.18E-05	5.69E-07	2.04E-13
LA	LA-MSG04.001	62.50	6.78E-01	2.59E-05	--	1.89E-03	1.06E-05	1.08E-01	6.28E+00	9.21E-01	4.68E+00	5.37E-05	--	2.72E-04	5.63E-13	4.66E-07	2.43E-16	7.21E-10	2.67E-03	7.26E-05	5.18E-07	6.94E-04
LA	LA-OS-00-01.001	192.17	2.00E+04	--	--	1.75E+01	1.25E-01	3.24E+03	2.41E+03	6.43E+02	5.35E+02	1.95E-02	--	1.32E-03	1.56E-08	9.67E-05	1.70E-13	1.28E-05	6.45E-01	4.54E-05	3.62E-04	2.09E-08
LA	LA-OS-00-04	0.21	2.05E-01	--	--	--	1.35E-06	--	2.90E-05	1.84E-05	1.71E-05	--	--	--	4.19E-13	--	5.37E-21	2.77E-10	--	1.64E-12	1.09E-11	--
LA	LA-TA-00-01	81.93	7.39E-01	--	--	--	2.12E-03	1.29E+00	1.25E+00	4.27E-02	1.86E-01	2.48E-06	--	--	2.72E-10	1.30E-08	2.11E-17	2.38E-07	1.05E-04	3.21E-08	3.29E-08	9.98E-15
LA	LA-TA-03-10	66.43	1.04E-01	9.01E-07	--	--	8.10E-04	1.12E-02	4.51E-01	1.03E-01	6.25E-01	6.08E-06	--	--	5.62E-11	3.25E-08	1.31E-15	6.70E-08	1.86E-04	8.48E-06	1.43E-06	6.91E-06
LA	LA-TA-03-14	9.40	--	--	--	--	--	2.35E+00	6.20E-03	--	--	--	--	--	--	1.34E-07	--	--	4.77E-04	3.48E-10	--	--
LA	LA-TA-03-28	1.05	--	--	--	--	--	2.23E+00	--	--	--	--	--	--	--	1.38E-07	--	--	4.73E-04	--	--	--
LA	LA-TA-03-30	0.21	--	--	--	--	--	4.30E-02	--	--	--	--	--	--	--	2.66E-09	--	--	9.12E-06	--	--	--
LA	LA-TA-03-CVD-C&NC	2.94	3.45E+00	--	--	--	1.62E-05	4.93E-01	1.92E+01	4.48E+00	3.00E+01	2.60E-04	--	--	2.67E-13	8.43E-09	9.46E-16	5.57E-10	6.63E-05	1.03E-06	2.26E-06	6.85E-13
LA	LA-TA-21-05	0.42	2.33E-01	--	--	--	3.83E-06	2.09E-02	1.05E+00	2.50E-01	2.51E-01	1.69E-05	--	--	6.97E-13	2.49E-09	5.95E-16	4.40E-10	6.72E-06	1.96E-05	4.23E-07	1.50E-13
LA	LA-TA-21-06	329.28	8.10E+01	--	--	--	1.27E-03	1.18E+04	2.03E+02	6.16E+01	1.00E+02	1.15E-02	--	--	2.13E-10	7.82E-04	1.37E-13	1.40E-07	2.61E+00	9.33E-04	1.01E-04	9.80E-11
LA	LA-TA-21-07	635.99	3.76E+01	--	--	--	5.80E-04	9.03E+03	1.78E+02	3.75E+01	4.73E+01	3.35E-03	--	--	9.44E-11	4.72E-04	8.01E-14	6.30E-08	1.75E+00	1.51E-05	6.01E-05	2.80E-11
LA	LA-TA-21-08	4.20	8.99E-01	--	--	--	1.47E-05	7.54E+01	2.67E+00	7.49E-01	9.98E-01	1.12E-04	--	--	2.65E-12	4.32E-06	1.78E-15	1.68E-09	1.53E-02	2.48E-07	1.27E-06	9.93E-13
LA	LA-TA-21-09	14.28	7.59E-02	--	--	--	1.29E-06	1.22E+03	3.59E-01	8.35E-02	7.38E-02	4.86E-06	--	--	2.53E-13	7.56E-05	2.13E-16	1.54E-10	2.59E-01	3.42E-08	1.46E-07	4.45E-14
LA	LA-TA-21-12	346.25	1.52E+02	--	--	--	2.34E-03	3.71E+04	2.73E+02	9.17E+01	1.91E+02	2.49E-02	--	--	1.97E-01	2.96E-03	1.96E-13	4.15E+01	9.24E+00	1.96E-03	1.47E-04	2.08E-10
LA	LA-TA-21-13	459.01	1.01E+04	--	--	1.21E-01	7.67E-02	2.65E+01	6.25E+01	4.76E-04	1.83E-02	2.75E-08	--	8.23E-02	2.61E-09	1.43E-06	9.41E-14	3.85E-06	7.66E-03	2.14E-02	8.29E-05	1.08E-02
LA	LA-TA-21-15	3.36	7.34E-01	--	--	--	1.16E-05	6.63E-02	4.71E+00	8.09E-01	8.67E-01	4.71E-05	--	--	1.96E-12	7.25E-09	1.79E-15	1.28E-09	2.03E-05	3.84E-07	1.32E-06	4.02E-13
LA	LA-TA-21-16	55.02	1.35E+02	--	--	--	9.63E-04	2.18E+01	6.34E+02	1.51E+02	7.08E+02	1.25E-02	--	--	3.64E-11	7.20E-07	7.47E-14	5.01E-08	3.87E-03	3.28E-03	1.16E-04	5.02E-11
LA	LA-TA-21-17	0.63	5.53E-03	--	--	--	9.44E-08	4.84E-04	2.62E-02	6.09E-03	5.38E-03	3.55E-07	--	--	1.85E-14	6.04E-11	1.55E-17	1.13E-11	1.59E-07	2.49E-09	1.07E-08	3.25E-15
LA	LA-TA-50-18	0.42	2.87E-01	--	--	--	5.76E-06	--	5.70E-03	--	--	--	--	--	1.31E-12	--	--	7.50E-10	--	3.32E-10	--	--
LA	LA-TA-50-19	63.00	2.08E+01	--	--	--	3.81E-04	1.25E+00	1.38E+00	--	--	--	--	--	7.23E-11	6.34E-08	--	4.53E-08	2.38E-04	7.37E-08	--	--
LA	LA-TA-55-19	56.79	2.01E+02	--	--	--	2.28E-03	1.58E+02	2.51E+02	1.24E+02	2.07E+03	7.04E-02	--	--	8.11E-11	3.12E-05	6.60E-13	1.25E-07	2.16E-01	5.99E-03	8.65E-04	1.40E-03
LA	LA-TA-55-21	2.31	3.35E-01	--	--	--	5.12E-06	2.07E+01	5.80E-01	2.07E-01	4.38E-01	5.51E-05	--	--	8.27E-13	2.81E-06	4.42E-16	5.54E-10	7.49E-03	5.24E-08	3.32E-07	2.02E-06
LA	LA-TA-55-30	224.77	2.30E+02	4.18E-06	--	--	1.02E-03	2.01E+02	1.72E+02	1.05E+02	2.22E+03	2.17E-01	1.27E-07	--	1.48E-11	6.19E-06	3.89E-14	3.28E-08	4.68E-02	5.83E-04	7.41E-05	8.39E-03
LA	LA-TA-55-38	0.84	3.80E-02	--	--	--	5.48E-07	1.92E+01	1.71E-02	8.58E-03	5.63E-02	7.09E-06	--	--	7.91E-14	2.37E-06	1.64E-17	5.60E-11	6.64E-03	1.72E-09	1.30E-08	5.61E-14
LA	LA-TRU-Empty-110	1.88	1.28E-02	4.38E-08	--	--	1.03E-07	--	4.53E-05	1.06E-05	2.78E-04	--	--	--	3.49E-15	--	2.79E-21	5.25E-12	--	8.47E-13	5.95E-12	--
LA	LA-TRU-Empty-55	13.16	2.28E-01	9.37E-06	--	1.20E-06	5.42E-06	1.71E+01	3.67E-01	8.58E-02	4.17E-01	3.61E-07	--	1.16E-06	8.61E-09	7.63E-07	3.04E-17	4.40E-10	4.33E-03	2.19E-07	5.59E-08	1.23E-15
LA	LA-TRU-Empty-85	80.84	8.02E+01	1.21E-02	--	9.05E-04	3.49E-03	1.95E+01	3.34E+01	7.93E+00	4.60E+01	2.68E-04	6.99E-12	8.84E-04	2.58E-06	5.84E-07	1.74E-15	2.27E-07	4.43E-03	4.32E-06	4.08E-06	1.47E-05
LA	WA-LA-CIN01.001	1.72	7.43E+01	3.66E-04	--	3.63E-06	1.21E-03	1.81E-01	6.31E+00	1.58E+00	6.50E+00	1.39E-04	--	3.53E-06	6.76E-11	1.05E-09	4.62E-16	8.39E-08	1.11E-05	1.24E-07	9.36E-07	4.33E-13
LA	WA-LA-MHD01.001	3.92	6.01E+01	5.73E-05	--	--	8.43E-04	1.02E+00	2.53E+01	6.08E+00	2.59E+01	9.06E-04	--	--	4.12E-11	7.14E-09	1.61E-15	5.43E-08	6.97E-05	4.74E-07	3.42E-06	2.67E-12
LA	WA-LA-MHD04.001	5.64	6.32E-01	--	--	--	1.03E-05	5.08E-01	1.79E+00	4.78E-01	9.36E-01	4.85E-05	--	--	5.34E-13	9.51E-09	1.26E-16	6.89E-10	6.88E-05	1.34E-07	2.69E-07	1.43E-13
LA	WC-LA-CIN01.001	59.06	1.69E+03	1.08E-01	--	8.74E-05	3.07E-02	2.48E+01	2.66E+02	7.55E+01	3.96E+02	3.69E-01	--	8.49E-05	1.65E-09	1.94E-06	1.99E-14	2.11E-06	1.18E-02	2.62E-04	4.25E-05	9.64E-03
LA	WC-LA-CIN02.001	0.94	3.89E-01	--	--	--	1.63E-05	1.05E-01	2.09E-01	1.45E-02	4.65E-02	5.39E-06	--	--	1.02E-12	7.08E-09	3.83E-18	1.25E-09	4.35E-05	9.31E-07	8.17E-09	1.59E-14
LA	WC-LA-MHD01.001	43.55	2.51E+02	8.43E-02	--	8.54E-05	1.66E-02	2.42E+01	2.82E+02	8.11E+01	2.37E+02	5.41E-02	--	8.30E-05	1.08E-09	7.19E-07	2.14E-14	1.31E-06	4.80E-03	8.88E-05	4.57E-05	4.05E-04
LA	WC-LA-MHD03.001	5.95	8.09E+00	3.63E-03	--	2.78E-05	1.29E-04	3.31E+01	1.14E+01	3.21E+00	7.67E+00	8.91E-04	--	2.70E-05	6.63E-12	1.20E-06	8.47E-16	8.58E-09	7.80E-03	6.91E-07	1.81E-06	2.63E-12
LA	WC-LA-MHD04.001	12.96	9.14E-01	6.11E-06	--	1.91E-06	5.21E-05	3.12E+02	1.46E+00	4.24E-01	1.05E+00	3.00E-04	--	1.85E-06	3.36E-12	1.16E-05	1.12E-16	4.08E-09	7.51E-02	1.68E-05	2.39E-07	3.34E-04
LA	WC-LA-MHD05-ITRI.001	2.51	3.82E-01	7.64E-02	--	--	7.56E-05	1.14E+01	7.48E-01	2.10E-01	7.93E-01	8.02E-05	--	--	5.14E-12	3.98E-07	5.53E-17	6.16E-09	2.60E-03	1.40E-08	1.18E-07	2.36E-13
LA	WC-LA-MHD08.001	2.35	1.47E+00	3.83E-03	3.45E+00	1.16E-06	1.49E-04	1.05E-01	1.66E+00	1.04E+00	3.70E+00	1.27E-04	--	1.12E-06	9.91E-12	5.45E-10	2.72E-16	1.19E-08	6.08E-06	3.11E-08	5.80E-07	3.75E-13
LA	WC-LA-MHD09.001	4.54	6.54E-01	1.34E-06	--	3.02E-07	1.29E-05	1.84E-01	9.81E-01	4.36E-01	1.88E+00	9.02E-05	--	2.93E-07	7.16E-13	1.79E-09	1.15E-16	9.06E-10	1.54E-05	1.37E-07	2.45E-07	2.66E-13
LA	WC-LA-MIN02-V.001	65.17	1.06E+03	9.22E-02	--	3.12E-05	1.83E-02	1.35E+01	4.18E+02	1.07E+02	4.07E+02	2.18E-02	--	3.04E-05	2.33E-05	1.24E-06	2.83E-14	1.40E-02	7.49E-03	1.74E-04	6.03E-05	2.56E-03
LA	WC-LA-MIN03-NC.001	15.51	1.92E+00	7.73E-05	--	1.47E-04	3.52E-05	9.55E-02	1.55E+00	1.98E-01	9.88E-01	4.02E-05	--	1.42E-04	1.89E-12	7.56E-08	5.23E-17	2.42E-09	4.36E-04	1.07E-05	1.12E-07	1.19E-13
LA	WC-LA-MIN04-S.001	1.88	9.24E+00	1.08E-05	--	--	1.10E-04	8.75E-01	2.10E+01	5.21E+00	1.46E+01	3.42E-03	--	--	5.06E-12	4.53E-09	1.37E-15	6.80E-09	5.06E-05	3.93E-07	2.93E-06	1.01E-11

Table 5-1. CH Volume (m^3) and Activity (Ci) By Waste Stream and Radionuclide Decayed thru 2033
(Continued)

Site	Waste Stream ID	Scaled Vol (m^3)	Am-241	Am-243	Cm-244	Cs-137	Np-237	Pu-238	Pu-239	Pu-240	Pu-241	Pu-242	Pu-244	Sr-90	Th-229	Th-230	Th-232	U-233	U-234	U-235	U-236	U-238
LA	WC-LA-MIN05-V.001	2.04	1.20E-01	6.45E-12	--	2.51E-06	4.22E-04	7.56E-01	2.59E-01	6.36E-02	2.00E-01	1.67E-05	--	2.44E-06	3.21E-11	2.53E-08	1.86E-17	3.66E-08	1.60E-04	5.10E-09	3.77E-08	5.18E-14
LA	WC-LA-MSG04.001	0.47	2.33E-02	--	--	--	1.53E-07	--	--	--	--	--	--	--	3.93E-15	--	--	6.67E-12	--	--	--	--
LA	WP-LA-CIN01.001	553.45	1.97E+04	1.14E+00	--	2.07E-03	4.00E-01	5.95E+02	4.40E+03	1.21E+03	5.41E+03	1.71E+00	--	2.01E-03	2.21E-08	3.48E-05	3.20E-13	2.80E-05	2.16E-01	3.45E-03	6.82E-04	1.95E-01
LA	WP-LA-CIN02.001	121.97	4.65E+02	8.44E-02	--	4.78E-02	1.78E-02	5.86E+01	3.55E+02	9.52E+01	2.88E+02	2.30E-02	--	4.63E-02	7.36E-06	4.74E-06	3.07E-14	3.99E-03	2.64E-02	5.66E-04	5.93E-05	2.48E-04
LA	WP-LA-MHD01.001	5374.87	2.20E+04	9.96E-01	3.63E+01	5.18E-03	6.63E-01	7.42E+04	4.55E+04	1.20E+04	4.76E+04	1.58E+01	--	5.03E-03	3.03E-03	1.11E-02	4.52E-06	1.82E+00	1.73E+01	1.06E-02	6.77E-03	7.50E-02
LA	WP-LA-MHD02-PTX.001	0.63	5.09E-02	--	--	8.55E-08	7.98E-07	1.06E-02	1.31E-01	2.77E-02	5.84E-02	3.21E-06	--	8.27E-08	5.14E-14	7.48E-11	9.82E-18	5.89E-11	7.18E-07	2.84E-09	1.81E-08	1.10E-14
LA	WP-LA-MHD02.001	13.65	1.87E+00	4.00E-05	--	1.31E-06	9.89E-05	1.44E+03	1.39E+00	7.00E-01	1.85E+00	7.18E-04	--	1.25E-06	6.08E-09	9.80E-05	3.73E-16	2.57E-06	4.54E-01	6.69E-07	5.60E-07	3.01E-12
LA	WP-LA-MHD03.001	727.69	3.30E+02	1.01E-01	2.42E+00	7.30E-02	1.29E-01	3.22E+03	6.01E+02	1.56E+02	7.32E+02	2.63E-01	--	7.08E-02	3.10E-04	1.30E-04	4.56E-14	1.76E-01	8.02E-01	1.96E-03	9.23E-05	6.74E-03
LA	WP-LA-MHD04.001	517.32	1.24E+02	5.00E-03	--	1.92E-03	4.78E-03	1.13E+03	2.23E+02	8.19E+01	2.82E+02	2.00E-02	--	1.87E-03	1.96E-06	4.03E-05	2.16E-14	1.18E-03	2.62E-01	1.38E-04	4.61E-05	4.86E-05
LA	WP-LA-MHD05-ITRI.001	12.78	3.61E+00	6.51E-03	3.89E+00	3.26E-06	1.23E-04	1.96E+01	9.55E+00	1.19E+00	4.30E+00	1.14E-04	--	3.16E-06	8.98E-12	7.42E-07	3.80E-16	1.01E-08	4.46E-03	4.08E-07	7.35E-07	3.72E-13
LA	WP-LA-MHD08.001	9.24	1.74E+00	1.81E-02	6.15E-01	2.02E-04	3.05E-04	3.18E-01	1.74E+00	4.27E-01	1.78E+00	1.10E-03	--	1.96E-04	2.49E-11	2.26E-09	1.37E-16	2.72E-08	2.17E-05	3.60E-08	2.65E-07	3.58E-12
LA	WP-LA-MHD09.001	104.98	5.11E+02	2.27E-02	--	3.66E-02	1.43E-02	1.41E+02	2.65E+01	9.55E+00	4.70E+01	4.42E-03	--	3.56E-02	8.48E-10	4.97E-06	2.52E-15	1.05E-06	3.24E-02	1.16E-05	5.38E-06	1.11E-04
LA	WP-LA-MHD10.001	65.80	3.25E+00	8.29E-07	--	7.48E-07	2.38E-05	2.21E+00	1.26E+01	3.40E+00	8.34E+00	6.95E-04	--	7.25E-07	7.79E-13	1.27E-08	9.95E-16	1.18E-09	1.35E-04	2.48E-07	2.02E-06	2.16E-12
LA	WP-LA-MIN02-V.001	111.09	2.90E+03	1.81E-01	--	4.26E-05	4.82E-02	5.04E+01	1.06E+03	2.82E+02	1.19E+03	1.61E-01	--	4.14E-05	2.51E-09	4.80E-06	7.45E-14	3.24E-06	2.89E-02	6.63E-04	1.59E-04	3.68E-02
LA	WP-LA-MIN03-NC.001	802.29	3.98E+02	4.81E-03	--	4.64E-02	6.65E-03	1.37E+01	2.45E+02	3.35E+01	2.40E+02	1.93E-02	--	4.02E-02	6.63E-10	8.01E-06	8.83E-15	6.37E-07	4.62E-02	1.14E-03	1.88E-05	1.06E-03
LA	WP-LA-MIN04-S.001	67.68	7.61E+02	1.42E-02	2.52E-01	4.50E-05	1.17E-02	3.36E+01	7.19E+02	1.93E+02	6.34E+02	1.19E-01	--	4.36E-05	6.43E-10	4.71E-07	5.65E-14	8.02E-07	3.56E-03	5.14E-05	1.14E-04	3.69E-10
LA	WP-LA-MSG04.001	4.18	6.32E-01	--	--	1.58E-07	1.27E-05	--	1.92E-01	--	--	--	--	1.53E-07	8.91E-13	--	--	9.93E-10	--	4.17E-09	--	--
LA	WP-LA-OS-00-01	0.42	2.65E+00	--	--	1.41E-04	3.84E-05	1.41E+00	4.78E+00	4.85E+00	1.59E+00	9.65E-05	--	1.26E-04	3.78E-12	9.33E-02	3.41E-15	3.37E-09	1.40E-04	1.46E-07	4.46E-06	4.64E-13
LA	WP-LA-OS-00-01.001	261.24	1.68E+04	--	--	5.36E+00	1.10E-01	8.86E+03	1.10E+03	3.30E+02	4.25E+02	8.93E-02	--	1.20E+00	2.52E-08	2.23E-04	9.65E-14	1.75E-05	1.48E+00	6.89E-05	1.95E-04	1.55E-06
LA	WP-LA-OS-00-03	14.70	2.34E+01	--	--	2.33E-07	2.02E-04	2.11E-04	1.43E-03	1.05E-03	4.32E-03	3.94E-07	--	1.97E-07	2.00E-11	5.28E-12	5.21E-19	1.63E-08	3.04E-08	6.05E-11	8.12E-10	1.69E-12
LA	WP-LA-OS-00-04	0.21	2.69E-01	--	--	1.39E-04	1.81E-06	5.51E-02	1.68E+00	4.44E-01	2.94E-01	6.10E-05	--	1.14E-04	5.12E-13	2.42E-09	1.43E-16	3.32E-10	1.43E-05	1.14E-07	2.76E-07	1.81E-09
LA	WP-LA-TA-55-19.01	81.08	7.67E+01	4.36E-03	--	5.03E-07	4.58E-03	1.65E+01	2.49E+02	6.14E+01	1.73E+02	1.67E-01	--	--	7.95E-10	6.27E-05	4.60E-14	5.83E-07	1.20E-01	2.34E-04	5.82E-05	3.87E-04
LA	WP-LA-TA-55-19.02	230.57	4.33E+02	7.73E-02	--	3.04E-04	2.51E-02	1.66E+02	8.16E+02	2.28E+02	9.06E+02	1.24E+00	--	2.70E-04	1.20E-05	1.90E-03	2.06E-05	4.54E-03	8.20E-01	9.76E-04	2.02E-04	1.53E-03
LA	WP-LA-TA-55-30	96.15	1.29E+02	6.50E-03	--	4.62E-03	8.89E-03	3.71E+01	2.47E+02	6.94E+01	2.46E+02	5.98E-02	--	4.41E-03	2.50E-05	3.16E-06	3.28E-05	9.49E-03	1.32E-02	2.23E-04	6.18E-05	5.58E-04
LA	WP-LA-TA-55-43.01	189.88	6.20E-01	1.44E-05	--	--	4.36E-05	4.36E+02	4.66E-01	7.62E-01	1.55E+00	5.33E-04	--	--	8.68E-12	1.83E-05	4.58E-06	5.96E-09	8.14E-02	1.56E-08	7.68E-07	2.81E-12
LB	LB-T001	0.54	1.36E-02	2.32E-03	1.09E-03	1.48E-07	2.21E-05	7.55E-03	7.95E-04	2.83E-05	1.46E-04	3.57E-15	2.77E-14	--	1.07E-12	2.73E-11	1.44E-06	1.53E-09	3.63E-07	1.25E-11	1.29E-11	1.01E-09
LB	LB-T002	0.54	2.44E-05	3.09E-08	--	--	1.50E-07	--	1.42E-04	--	6.02E-05	--	--	--	7.28E-15	--	--	1.04E-11	--	2.24E-12	--	--
LL	LL-M001	715.80	2.16E+03	1.69E-01	2.86E+02	3.23E-01	1.24E-01	2.12E+03	3.78E+03	1.07E+03	3.28E+03	4.64E-01	2.15E-08	3.15E-01	1.24E-03	3.39E-03	1.46E-04	2.43E-01	1.25E-01	8.47E-03	5.09E-04	1.41E-02
LL	LL-T004	13.86	1.38E+02	--	1.17E-02	--	7.08E-04	8.32E+01	3.25E+02	7.57E+01	1.82E+02	7.79E-03	--	--	1.15E-11	3.01E-07	1.42E-14	2.45E-08	4.00E-03	5.13E-06	3.59E-05	1.93E-11
LL	LL-W018-S5100	516.98	3.26E+01	--	8.03E-03	--	2.66E-04	2.06E+00	2.10E+01	6.28E+00	5.30E+01	1.36E-03	--	--	1.13E-11	2.07E-08	3.11E-15	1.49E-08	1.67E-04	5.38E-07	4.84E-06	5.48E-12
LL	LL-W018-SS	9.51	1.72E+02	2.35E-05	7.60E-04	1.99E-02	1.50E-03	2.42E+01	1.36E+00	4.34E-03	2.87E-01	--	3.91E-21	5.97E-02	6.64E-11	2.43E-07	2.14E-18	8.57E-08	1.97E-03	1.00E-06	3.34E-09	--
LL	LL-W019	73.27	9.27E+01	4.18E-05	1.12E-02	8.66E-05	6.94E-03	3.29E+02	1.93E+02	5.11E+01	2.84E+02	1.09E-02	--	8.45E-05	4.98E-03	1.29E-06	2.96E-05	3.54E+00	1.65E-02	6.53E-04	2.42E-05	4.40E-03
LL	WP-BLCHDN.001	1.68	1.05E-01	2.23E-03	7.23E-02	--	8.95E-04	7.10E-02	4.37E-06	4.05E-04	2.21E-04	--	--	--	1.43E-10	9.04E-10	1.06E-19	1.13E-07	6.53E-06	6.66E-14	2.06E-10	--
LL	WP-LL-M001-S5400	144.46	3.28E+02	1.35E-02	1.12E+01	1.13E-05	7.58E-02	2.90E+02	5.98E+02	1.68E+02	5.85E+02	3.17E-02	--	1.06E-05	1.18E-08	8.68E-06	1.03E-13	9.34E-06	4.54E-02	5.13E-04	1.44E-04	3.54E-03
ND	ND-T001	0.42	2.87E+01	--	--	--	2.08E-04	--	--	--	--	--	--	--	6.46E-12	--	--	9.97E-09	--	--	--	--
ND	ND-T002	1.68	3.64E+00	--	--	--	2.88E-05	--	--	--	--	--	--	--	1.07E-12	--	--	1.51E-09	--	--	--	--
NT	NT-JAS-01	133.30	1.15E+01	--	--	--	1.69E-04	3.71E+00	1.34E+02	3.04E+01	6.46E+01	1.71E-03	--	--	1.79E-11	5.08E-08	2.00E-14	1.55E-08	3.55E-04	3.95E-06	2.70E-05	7.94E-12
NT	NT-W021	5.46	8.33E+00	--	--	--	5.86E-05	1.14E+00	5.10E+01	1.17E+01	2.24E+01	1.04E-03	--	--	6.13E-12	1.49E-06	4.52E-15	4.94E-09	7.07E-03	4.92E-05	7.97E-06	2.48E-03
NT	WP-NT-RF-BERYLLIUM	29.61	4.68E+00	9.16E-07	--	--	7.77E-05	7.73E-01	2.43E+01	5.50E+00	1.22E+01	4.31E-04	--	--	1.46E-05	2.41E-07	3.15E-15	5.94E-03	9.70E-04	1.85E-05	4.56E-06	2.31E-04
NT	WP-NT-RF-GRAPHITE	3.78	4.72E+00	--	--	--	6.78E-05	9.75E-01	3.88E+01	7.19E+00	1.84E+01	5.25E-04	--	--	6.22E-12	2.61E-08	4.12E-15	5.82E-09	1.43E-04	1.07E-06	5.96E-06	2.84E-05
NT	WP-NT-RF-METAL	6.09	1.03E+00	2.71E-06	--	--	1.91E-05	1.74E-01	6.73E+00	1.67E+00	4.33E+00	1.35E-04	--	--	2.01E-12	1.15E-05	9.55E-16	1.79E-09	4.46E-02	2.76E-05	1.38E-06	2.23E-02
NT	WP-NTLBL-S5400	1.68	1.09E+00	5.79E-03	3.32E-01	2.84E-05	6.85E-04	1.19E-01	6.72E-01	1.54E-01	9.59E-01	2.12E-05	--	2.72E-05	1.01E-10	1.41E-09	8.75E-17	8.26E-08	1.05E-05	1.85E-08	1.27E-07	9.19E-14
NT	WP-NTLRC-S5400	3.15	5.38E+00	3.51E-05	--	6.15E-07	2.89E-04	4.68E-01	7.19E+00	2.63E+00	9.50E+00	2.93E-04	--	5.89E-07	3.85E-11	1.15E-06	1.51E-15	3.23E-08	4.48E-03	1.48E-04	2.19E-06	1.05E-04
NT	WP-NTS54332R0	309.83	1.40E+02	1.30E-02	1.13E+00	1.34E-04	1.54E-02	2.06E+01	3.69E+02	9.63E+01	3.16E+02	1.04E-02	--	1.31E-04	5.35E-04	7.39E-06	5.53E-14	2.17E-01	2.96E-02	3.41E-04	8.00E-05	1.01E-02

Table 5-1. CH Volume (m^3) and Activity (Ci) By Waste Stream and Radionuclide Decayed thru 2033
(Continued)

Site	Waste Stream ID	Scaled Vol (m^3)	Am-241	Am-243	Cm-244	Cs-137	Np-237	Pu-238	Pu-239	Pu-240	Pu-241	Pu-242	Pu-244	Sr-90	Th-229	Th-230	Th-232	U-233	U-234	U-235	U-236	U-238
NT	WP-NTS54COMR0	50.81	3.56E+01	2.09E-02	9.49E+00	4.64E-05	5.16E-03	1.76E+01	5.12E+01	1.22E+01	3.59E+01	1.84E-03	--	4.45E-05	6.42E-04	7.29E-07	6.99E-15	2.61E-01	3.58E-03	1.45E-05	1.01E-05	8.79E-04
NT	WP-NTS54MIX1R0	0.42	3.80E-03	9.54E-05	--	4.04E-05	8.23E-07	3.28E-04	2.89E-02	6.94E-03	6.43E-03	6.83E-07	--	--	1.46E-13	4.82E-12	4.88E-18	1.08E-10	3.25E-08	8.83E-10	6.38E-09	3.28E-15
OR	OR-CHEM-CH-HET	39.06	2.60E+01	3.55E-02	7.65E+00	5.81E+00	3.32E-04	2.38E+02	3.56E+00	1.30E+00	1.33E+01	1.40E-03	5.71E-10	4.19E+00	2.90E-03	6.59E-06	4.00E-07	2.06E+00	5.04E-02	3.84E-04	4.15E-03	1.81E-02
OR	OR-CRF-CH-HET	4.20	1.21E-01	8.48E-03	2.78E+00	3.51E-02	7.13E-06	2.23E+00	7.85E-03	4.15E-02	8.16E-02	3.58E-04	1.11E-13	2.47E-02	4.41E-06	9.66E-09	7.93E-17	2.22E-03	1.18E-04	1.14E-07	1.10E-07	3.09E-08
OR	OR-GENR-CH-HET	30.87	5.44E+00	4.79E-01	4.80E+00	1.58E-03	1.25E-01	2.60E+00	2.67E+00	2.82E+00	1.50E+01	1.48E-01	1.09E-03	2.50E-03	9.48E-06	7.39E-08	6.96E-06	3.75E-04	5.64E-04	1.10E-04	1.10E-04	3.99E-04
OR	OR-IFEL-CH-HET	32.76	1.29E+00	--	7.83E-01	1.27E-01	2.83E-04	9.52E-01	1.72E+00	3.06E-01	9.89E-01	8.75E-06	1.02E-13	2.55E-02	5.22E-04	4.67E-06	6.78E-05	1.24E-01	1.07E-02	2.04E-04	4.64E-04	2.56E-04
OR	OR-ISTP-CH-HET	134.40	2.54E+02	8.37E-01	6.25E+02	5.95E-02	7.56E-02	3.34E+02	2.71E+01	2.49E+01	1.86E+02	8.74E-01	4.38E-05	1.48E-02	7.49E-04	6.10E-05	3.62E-05	4.17E-01	9.37E-02	8.35E-04	1.50E-04	6.20E-04
OR	OR-MRF-CH-HET	8.61	8.72E-01	1.25E-03	6.30E-02	1.07E-03	5.61E-05	1.06E-01	1.13E+00	3.35E-01	3.20E-01	1.18E-04	--	1.04E-03	1.35E-06	5.22E-09	7.94E-17	8.52E-04	3.44E-05	9.75E-07	1.79E-07	1.93E-05
OR	OR-NBL-CH-HET	12.39	8.54E-01	4.89E-04	2.57E-02	1.27E-04	4.05E-05	1.29E-01	9.40E-01	3.68E-01	1.17E+00	9.83E-05	--	1.24E-04	8.20E-06	3.19E-08	1.47E-05	5.16E-03	1.96E-04	1.53E-05	1.96E-07	9.29E-05
OR	OR-NFS-CH-HET	107.10	4.92E+01	2.74E-04	2.61E-01	2.88E-04	8.84E-04	1.42E+01	1.28E+02	4.25E+01	1.58E+02	8.75E-03	--	2.82E-04	5.08E-04	2.05E-07	2.89E-04	1.98E-01	1.73E-03	7.57E-05	2.01E-05	2.96E-03
OR	OR-NFS-CH-HOM	9.24	6.61E+01	5.25E-03	--	1.26E-04	8.27E-04	1.14E+01	1.01E+02	3.39E+01	1.27E+02	6.34E-03	--	1.23E-04	1.06E-04	4.15E-08	9.47E-05	5.47E-03	5.50E-04	2.09E-06	1.60E-05	2.16E-04
OR	OR-NFS-CH-SOIL	48.72	3.56E+00	--	--	7.91E-05	4.07E-05	3.63E-01	5.71E+00	1.85E+00	3.64E+00	2.62E-04	--	7.72E-05	7.58E-07	3.85E-04	7.47E-06	3.32E-04	1.12E-04	5.88E-06	8.78E-07	2.57E-04
OR	OR-OXIDE-CH-HET	11.34	2.09E+03	1.57E-03	--	2.20E-05	2.68E-02	5.16E+02	2.17E+02	5.61E+02	5.18E+03	2.53E+00	--	2.14E-05	2.94E-03	2.39E-05	1.12E-12	2.09E+00	9.27E-02	6.36E-05	8.52E-04	1.11E-03
OR	OR-PGDP-CH-HET	6.72	3.50E-01	2.55E-05	--	1.24E-04	1.67E-01	1.76E-01	1.48E+00	3.35E-01	1.84E+00	3.51E-05	--	1.21E-04	1.58E-05	6.66E-07	3.22E-06	6.50E-03	4.53E-03	7.75E-04	1.59E-07	1.88E-02
OR	OR-RADP-CH-HET	39.27	1.56E+01	2.28E-01	2.01E+01	1.42E-01	2.11E-02	6.09E+00	1.64E+01	6.14E+00	1.58E+01	1.67E-03	5.80E-04	3.83E-02	1.39E-03	5.87E-07	2.42E-05	6.71E-01	2.94E-03	5.75E-05	4.15E-06	2.52E-04
OR	OR-REDC-CH-HET	991.58	2.19E+02	7.17E+00	2.67E+03	1.67E+01	1.12E+00	1.07E+02	3.06E+01	7.31E+01	1.69E+02	3.88E-01	7.12E-04	1.66E+02	2.51E-03	3.44E-03	1.61E-05	5.28E-01	2.40E-01	1.87E-04	5.90E-05	3.25E-03
OR	OR-RF-CH-HET	84.84	5.67E+01	2.02E-02	3.60E+00	1.29E+02	1.30E-03	3.86E+01	8.36E+01	3.09E+01	1.80E+02	1.11E-02	6.35E-15	1.53E+01	5.06E-02	4.72E-05	2.42E-04	2.84E+01	3.22E-01	1.19E-03	1.21E-04	4.76E-04
OR	OR-RF-CH-HOM	1.26	6.33E-02	--	--	1.13E-03	1.02E-06	4.35E-04	1.25E-03	--	--	--	--	1.88E-02	1.53E-13	1.68E-11	--	1.08E-10	7.17E-08	5.92E-11	--	--
OR	OR-SWSA-CH-HET	0.63	1.87E-01	1.90E-04	1.53E-01	8.73E-05	7.99E-05	6.26E-03	1.99E-03	8.83E-04	1.29E-03	4.62E-08	--	8.51E-05	2.67E-05	2.16E-08	1.37E-19	1.71E-02	1.39E-04	3.33E-11	3.58E-10	1.22E-16
OR	OR-SWSA-CH-SOIL	2.73	1.69E-01	1.63E-04	1.33E+01	1.08E-05	8.45E-06	1.04E-01	7.06E-02	5.71E-02	9.81E-02	1.75E-05	--	1.05E-05	1.23E-06	2.30E-09	1.01E-06	5.91E-10	1.73E-05	2.60E-07	2.12E-08	3.81E-14
OR	OR-TBD-CH-HET	25.83	1.00E+02	1.59E+00	7.30E-02	1.80E+00	3.59E-02	1.72E+02	3.19E+01	2.23E+01	1.20E+01	1.50E-02	3.34E-03	1.50E+00	2.95E-02	3.94E-04	5.80E-04	5.72E+00	8.41E-02	1.48E-03	5.49E-04	2.86E-03
OR	OR-WSTR-CH-HET	9.03	1.82E-01	3.08E-04	1.93E-02	1.02E+00	1.01E-04	1.05E-01	9.01E+00	1.14E-02	9.02E-02	2.54E-05	--	5.24E-01	1.85E-04	7.02E-05	1.07E-04	7.05E-03	3.44E-03	4.97E-05	4.24E-05	1.88E-04
OR	OR-Y12-CH-HET	0.63	--	--	--	--	6.34E-03	2.32E-04	3.10E-02	1.30E-05	--	--	--	--	3.53E-10	8.58E-08	2.74E-21	4.69E-07	5.49E-04	7.47E-05	6.54E-12	6.14E-04
OR	WA-OR-NFS-CH-SOIL	13.02	1.71E+00	8.82E-06	--	1.54E-05	2.70E-05	8.11E-02	2.83E+00	8.70E-01	1.83E+00	9.20E-05	--	1.50E-05	2.42E-05	2.68E-09	2.06E-16	1.53E-02	1.84E-05	2.47E-06	4.64E-07	1.58E-04
OR	WP-OR-CHEM-CH-HET	10.71	1.38E+00	9.28E-04	1.16E-01	1.94E-02	5.86E-04	2.32E+00	8.77E-01	3.79E-01	2.61E+00	7.69E-04	--	1.69E-02	5.94E-04	5.45E-08	1.34E-16	2.65E-01	3.46E-04	2.15E-06	2.47E-07	2.22E-06
OR	WP-OR-GENR-CH-HET	4.20	1.24E-01	3.62E-02	4.73E-01	1.80E-05	4.31E-04	1.58E+00	7.19E-02	3.01E-01	2.15E-02	5.65E-06	--	1.74E-05	4.34E-11	3.36E-07	1.16E-16	4.29E-08	1.64E-03	3.30E-05	2.05E-07	3.85E-05
OR	WP-OR-ISTP-CH-HET	23.73	4.00E+01	8.13E-02	5.04E+01	2.51E-04	6.50E-03	1.34E+02	6.49E+00	4.59E+00	3.34E+01	1.08E-02	--	2.43E-04	2.12E-06	6.54E-06	1.59E-15	6.84E-04	3.68E-02	8.33E-06	2.94E-06	3.25E-04
OR	WP-OR-NBL-CH-HET	2.73	7.82E-02	1.99E-04	--	1.53E-04	2.70E-06	1.83E-02	1.26E-01	3.67E-02	3.75E-01	5.86E-06	--	1.48E-04	4.24E-06	6.27E-09	1.30E-17	2.19E-03	3.16E-05	6.60E-07	2.40E-08	2.00E-14
OR	WP-OR-NFS-CH-HET	23.52	2.65E+00	2.24E-11	--	6.13E-07	3.54E-05	2.89E-01	4.41E+00	1.34E+00	3.54E+00	2.06E-04	--	5.90E-07	6.37E-07	1.15E-08	6.10E-16	2.90E-04	6.11E-05	1.62E-06	9.89E-07	9.27E-04
OR	WP-OR-NFS-CH-HET-A	46.62	1.41E+01	2.65E-04	2.57E-02	7.41E-02	2.24E-04	1.46E+00	2.96E+01	8.29E+00	1.84E+01	1.19E-03	--	6.70E-04	1.19E-05	4.77E-08	2.94E-15	6.16E-03	2.84E-04	4.54E-06	5.41E-06	2.25E-04
OR	WP-OR-NFS-CH-SOIL	191.92	1.45E+02	1.99E-05	--	5.51E-04	1.93E-03	1.45E+01	3.13E+02	1.04E+02	2.92E+02	1.09E-02	--	5.37E-04	1.56E-04	7.25E-08	9.01E-05	1.14E-07	8.28E-04	1.23E-05	5.25E-05	6.55E-04
OR	WP-OR-RADP-CH-HET	47.88	1.41E+01	8.81E-02	6.06E+00	8.22E-03	3.52E-03	1.31E+01	1.09E+01	2.02E+00	6.94E+00	3.94E-04	--	7.95E-03	7.72E-05	4.58E-07	1.36E-06	3.13E-02	2.70E-03	1.94E-05	1.31E-06	2.13E-04
OR	WP-OR-REDC-CH-HET	105.21	1.05E+01	2.80E-01	3.09E+02	2.60E-01	2.15E-03	6.61E+00	1.03E+01	1.09E+01	3.67E+01	1.83E-02	--	4.34E+00	2.34E-05	8.14E-07	3.62E-15	5.97E-03	4.24E-03	6.98E-05	6.78E-06	3.27E-04
OR	WP-OR-RF-CH-HET	41.37	3.31E+01	3.05E-03	1.95E+00	3.37E-03	6.12E-04	5.16E+00	3.63E+01	1.82E+01	1.32E+02	3.62E-03	--	3.26E-03	9.92E-04	8.87E-05	2.65E-04	2.17E-01	4.39E-01	3.45E-04	1.19E-05	4.99E-04
RF	WP-RF001.01	986.46	1.67E+03	1.18E-03	--	--	6.59E-02	1.23E+02	3.36E+03	7.80E+02	3.97E+03	1.18E-01	--	--	1.85E-04	5.27E-05	4.47E-13	7.53E-02	2.10E-01	9.65E-03	6.48E-04	2.21E-03
RF	WP-RF002.01	1459.51	1.60E+03	1.06E-03	--	1.87E-04	2.25E-02	1.81E+02	4.40E+03	1.04E+03	6.15E+03	1.23E-01	--	--	5.38E-05	3.52E-05	5.94E-13	2.19E-02	1.45E-01	7.12E-03	8.60E-04	2.83E-01
RF	WP-RF003.01	358.61	2.92E+03	--	--	--	2.82E-02	4.37E+02	1.27E+04	3.06E+03	1.19E+04	2.93E-01	--	--	2.57E-05	9.59E-06	1.88E-12	1.01E-02	5.53E-02	8.59E-04	2.63E-03	1.31E-03
RF	WP-RF004.01	285.55	2.66E+02	8.81E-07	--	--	3.33E-03	2.70E+01	6.86E+02	1.59E+02	9.85E+02	1.91E-02	--	--	2.76E-10	5.59E-06	9.10E-14	2.67E-07	2.29E-02	6.79E-04	1.32E-04	7.54E-04
RF	WP-RF005.01	120.54	5.26E+03	--	--	--	6.09E-02	1.68E+02	4.78E+03	1.23E+03	2.30E+03	1.01E-01	--	--	4.86E-09	3.02E-06	1.04E-12	4.68E-06	1.85E-02	2.42E-04	1.24E-03	5.33E-10
RF	WP-RF005.02	79.17	6.30E+03	--	--	--	6.87E-02	1.00E+02	2.90E+03	7.61E+02	1.33E+03	6.46E-02	--	--	4.81E-09	1.75E-06	5.70E-13	4.95E-06	1.09E-02	1.11E-04	7.22E-04	1.72E-07
RF	WP-RF006.01	237.93	2.18E+03	--	--	--	1.97E-02	4.08E+02	9.21E+03	2.22E+03	1.46E+04	2.97E-01	--	--	1.33E-09	6.49E-06	1.37E-12	1.38E-06	4.24E-02	4.54E-04	1.91E-03	1.39E-06
RF	WP-RF008.01	98.06	1.14E+03	--	--	--	2.28E-02	1.66E+02	3.39E+03	9.29E+02	3.70E+03	1.36E-01	--	--	2.59E-09	2.18E-06	5.71E-13	2.24E-06	1.55E-02	1.24E-04	7.98E-04	7.59E-08
RF	WP-RF009.01	1339.57	6.67E+04	--	--	--	9.58E-01	1.65E+03	5.50E+04	1.36E+04	3.29E+04	1.37E+00	--	--	8.27E-08	2.19E-05	7.81E-12	7.95E-05	1.55E-01	1.82E-03	1.13E-02	2.72E-06
RF	WP-RF010.01	630.50	1.76E+03	4.09E-05	--	--	1.98E-02	2.10E+02	6.26E+03	1.46E+03	6.14E+03	1.59E-01	--	--	1.47E-09	3.43E-05	8.36E-13	1.49E-06	1.42E-01	4.16E-03	1.21E-03	3.58E-03

Table 5-1. CH Volume (m^3) and Activity (Ci) By Waste Stream and Radionuclide Decayed thru 2033
(Continued)

Site	Waste Stream ID	Scaled Vol (m^3)	Am-241	Am-243	Cm-244	Cs-137	Np-237	Pu-238	Pu-239	Pu-240	Pu-241	Pu-242	Pu-244	Sr-90	Th-229	Th-230	Th-232	U-233	U-234	U-235	U-236	U-238
RF	WP-RF011.01	79.86	2.99E+02	--	--	--	2.72E-03	5.16E+01	1.49E+03	3.57E+02	1.18E+03	3.06E-02	--	--	1.62E-10	8.45E-07	2.19E-13	1.78E-07	5.45E-03	6.53E-05	3.07E-04	4.21E-06
RF	WP-RF015.01	1.68	5.53E+00	--	--	--	1.25E-04	7.68E-01	1.87E+01	4.37E+00	2.64E+01	5.82E-04	--	--	1.69E-11	1.13E-08	3.07E-15	1.35E-08	7.61E-05	5.73E-07	4.02E-06	2.80E-12
RF	WP-RF029.01	4324.01	2.85E+03	1.44E-03	--	1.50E-05	4.48E-02	3.04E+02	6.85E+03	1.65E+03	1.15E+04	2.21E-01	2.81E-16	9.83E-08	4.34E-09	2.45E-05	9.44E-13	3.99E-06	1.08E-01	2.82E-03	1.37E-03	1.26E-03
RF	WP-RF031.01	20.79	1.40E+01	--	--	--	1.55E-04	1.89E+00	4.81E+01	1.11E+01	6.54E+01	1.32E-03	--	--	1.23E-11	2.62E-07	6.85E-15	1.20E-08	1.07E-03	3.05E-05	9.56E-06	4.10E-05
RF	WP-RF032.01	211.26	2.62E+03	--	--	--	4.40E-02	2.59E+02	8.61E+03	2.02E+03	5.95E+03	1.51E-01	--	--	4.55E-09	3.77E-06	1.24E-12	4.05E-06	2.56E-02	3.03E-04	1.73E-03	5.04E-07
RF	WP-RF033.01	25.83	1.73E+02	--	--	--	1.97E-03	2.86E+01	7.99E+02	1.86E+02	8.77E+02	1.84E-02	--	--	1.63E-10	4.47E-07	1.14E-13	1.56E-07	2.94E-03	3.34E-05	1.60E-04	6.00E-05
RF	WP-RF036.01	44.52	7.60E+01	8.12E-05	--	--	9.02E-04	1.10E+01	2.64E+02	6.16E+01	4.08E+02	8.18E-03	--	--	7.80E-11	7.95E-07	3.79E-14	7.35E-08	3.47E-03	1.18E-04	5.30E-05	2.98E-03
RF	WP-RF101.01	175.94	4.82E+02	1.05E-03	--	--	5.54E-03	6.71E+01	1.69E+03	3.94E+02	2.23E+03	4.61E-02	--	--	4.37E-10	1.15E-05	2.26E-13	4.31E-07	4.75E-02	1.40E-03	3.27E-04	8.53E-04
RF	WP-RF101.29	30.65	4.26E+01	--	--	--	4.67E-04	6.45E+00	1.56E+02	3.63E+01	2.03E+02	4.24E-03	--	--	3.53E-11	1.50E-06	2.08E-14	3.53E-08	6.08E-03	1.84E-04	3.01E-05	2.04E-04
RF	WP-RF101.30	118.06	4.15E+02	3.13E-04	--	--	5.62E-03	3.21E+01	8.78E+02	2.06E+02	9.73E+02	2.54E-02	--	--	5.04E-10	4.79E-06	1.27E-13	4.71E-07	1.94E-02	5.54E-04	1.77E-04	1.85E-04
RF	WP-RF101.31	62.93	8.28E+01	1.36E-05	--	--	8.84E-04	8.90E+00	2.34E+02	5.54E+01	2.72E+02	8.25E-03	--	--	6.23E-11	1.55E-06	3.18E-14	6.43E-08	6.41E-03	1.89E-04	4.60E-05	8.29E-05
RF	WP-RF101.35	80.16	2.84E+02	--	--	--	4.00E-03	2.48E+01	6.38E+02	1.49E+02	8.54E+02	2.08E-02	--	--	3.56E-10	2.20E-05	8.53E-14	3.37E-07	8.67E-02	2.73E-03	1.23E-04	2.19E-04
RF	WP-RF102.01	223.13	2.06E+02	1.99E-04	--	5.78E-03	2.87E-03	2.46E+01	5.73E+02	1.36E+02	9.28E+02	1.77E-02	--	--	2.61E-10	1.35E-06	7.81E-14	2.44E-07	6.28E-03	1.52E-04	1.13E-04	3.99E-04
RF	WP-RF102.31	123.79	1.63E+02	1.92E-05	--	--	2.30E-03	1.13E+01	2.75E+02	6.48E+01	3.92E+02	8.46E-03	--	--	2.13E-10	2.26E-06	3.99E-14	1.97E-07	8.96E-03	2.83E-04	5.57E-05	2.14E-03
RF	WP-RF104.01	54.76	1.45E+02	2.28E-04	--	--	2.08E-03	1.33E+01	4.09E+02	9.62E+01	4.01E+02	9.38E-03	--	--	1.86E-10	3.74E-07	5.51E-14	1.76E-07	2.02E-03	3.97E-05	7.98E-05	1.40E-04
RF	WP-RF107.01	64.05	2.54E+03	--	--	--	3.83E-02	7.70E+00	1.91E+02	4.41E+01	2.89E+02	5.79E-03	--	--	3.56E-09	4.68E-06	2.71E-14	3.30E-06	1.79E-02	1.12E-03	3.79E-05	5.98E-02
RF	WP-RF107.03	61.53	1.66E+01	--	--	--	2.56E-04	9.43E-01	2.31E+01	5.37E+00	3.53E+01	7.07E-04	--	--	2.50E-11	2.06E-05	3.30E-15	2.27E-08	7.75E-02	9.13E-03	4.62E-06	6.86E-01
RF	WP-RF107.04	111.26	6.63E+01	--	--	--	1.02E-03	3.39E+00	8.32E+01	1.93E+01	1.32E+02	2.53E-03	--	--	9.39E-11	5.83E-07	1.10E-14	8.79E-08	2.41E-03	2.13E-04	1.60E-05	1.54E-02
RF	WP-RF107.05	4.41	7.02E+00	--	--	--	7.85E-05	8.28E-01	2.04E+01	4.73E+00	3.10E+01	6.22E-04	--	--	6.24E-12	2.64E-06	2.91E-15	6.08E-09	9.93E-03	3.18E-04	4.07E-06	2.81E-06
RF	WP-RF107.06	14.49	7.75E-01	--	--	--	6.23E-06	1.23E-01	3.05E+00	7.07E-01	4.63E+00	9.27E-05	--	--	3.32E-13	6.17E-07	4.35E-16	3.82E-10	2.32E-03	2.63E-04	6.07E-07	2.01E-02
RF	WP-RF107.07	59.42	3.61E+02	1.69E-03	--	--	5.14E-03	3.01E+01	7.24E+02	1.69E+02	1.17E+03	2.23E-02	--	--	4.63E-10	3.55E-05	9.66E-14	4.36E-07	1.39E-01	4.44E-03	1.40E-04	2.20E-03
RF	WP-RF110.01	9.24	7.39E+01	1.72E-03	--	--	7.69E-04	5.16E+00	1.25E+02	2.92E+01	1.66E+02	6.56E-03	--	--	5.08E-11	2.86E-07	1.67E-14	5.41E-08	1.33E-03	3.33E-05	2.42E-05	1.94E-04
RF	WP-RF110.05	31.64	1.02E+02	--	--	--	9.14E-04	1.70E+01	4.61E+02	1.06E+02	3.78E+02	1.03E-02	--	--	5.26E-11	1.53E-06	6.55E-14	5.90E-08	6.50E-03	1.72E-04	9.14E-05	1.67E-05
RF	WP-RF113.01	0.42	9.74E-02	--	--	--	1.67E-06	1.49E-02	3.70E-01	8.58E-02	5.37E-01	1.13E-05	--	--	1.93E-13	2.04E-10	5.65E-17	1.63E-10	1.42E-06	1.09E-08	7.63E-08	5.25E-14
RF	WP-RF115.01	115.87	5.70E+02	--	--	--	5.91E-03	8.60E+01	2.53E+03	5.88E+02	1.57E+03	4.93E-02	--	--	4.08E-10	1.31E-06	3.62E-13	4.23E-07	8.71E-03	1.04E-04	5.05E-04	6.25E-04
RF	WP-RF116.01	3.99	2.35E+01	--	--	--	3.28E-04	2.09E+00	9.79E+01	2.27E+01	3.73E+01	1.52E-03	--	--	3.08E-11	2.86E-08	1.49E-14	2.81E-08	2.00E-04	2.89E-06	2.02E-05	7.06E-12
RF	WP-RF117.01	1.89	7.43E+00	--	--	--	9.32E-05	1.00E+00	2.44E+01	5.68E+00	3.63E+01	7.30E-04	--	--	8.32E-12	4.02E-07	3.49E-15	7.76E-09	1.55E-03	4.76E-05	4.88E-06	4.15E-07
RF	WP-RF118.01	1446.06	1.69E+04	1.25E-03	--	--	1.91E-01	3.48E+03	6.66E+04	1.79E+04	6.76E+04	2.18E+00	--	--	1.53E-08	1.18E-04	1.10E-11	1.49E-05	5.96E-01	1.08E-02	1.54E-02	2.00E-04
RF	WP-RF119.01	24.36	5.14E+01	--	--	--	6.60E-04	6.02E+00	1.47E+02	3.45E+01	2.15E+02	4.46E-03	--	--	5.91E-11	2.02E-07	2.12E-14	5.51E-08	1.02E-03	2.13E-05	2.97E-05	2.13E-04
RF	WP-RF121.01	46.41	2.99E+02	--	--	--	2.57E-03	5.24E+01	1.97E+03	4.71E+02	9.33E+02	3.05E-02	--	--	1.32E-10	8.36E-07	2.90E-13	1.56E-07	5.46E-03	7.68E-05	4.05E-04	1.81E-07
RF	WP-RF122.01	35.91	2.94E+02	--	--	--	5.87E-02	5.16E+01	1.37E+03	3.29E+02	8.61E+02	3.48E-02	--	--	9.14E-09	6.57E-07	2.03E-13	7.23E-06	4.75E-03	3.92E-05	2.83E-04	1.57E-10
RF	WP-RF122.03	4.41	3.37E+01	--	--	--	6.90E-04	5.71E-01	1.42E+01	3.28E+00	2.15E+01	4.30E-04	--	--	7.68E-11	2.41E-06	2.02E-15	6.69E-08	9.08E-03	6.06E-04	2.82E-06	3.39E-02
RF	WP-RF122.04	54.60	3.17E+02	--	--	--	6.38E-03	6.52E+00	1.61E+02	3.73E+01	2.45E+02	4.90E-03	--	--	7.06E-10	8.90E-06	2.30E-14	6.16E-07	3.37E-02	3.50E-03	3.21E-05	2.34E-01
RF	WP-RF122.05	16.38	3.49E+00	--	--	--	4.12E-05	2.23E-01	5.46E+00	1.27E+00	8.34E+00	1.67E-04	--	--	3.26E-12	5.36E-06	7.80E-16	3.20E-09	2.01E-02	1.05E-03	1.09E-06	3.90E-02
RF	WP-RF122.06	7.35	6.57E+01	--	--	--	8.95E-04	8.23E+00	2.52E+02	5.95E+01	1.55E+02	6.37E-03	--	--	8.06E-11	1.90E-07	3.66E-14	7.53E-08	1.08E-03	2.01E-05	5.11E-05	2.81E-04
RF	WP-RF123.01	9.44	7.46E+01	--	--	--	7.11E-04	8.33E+00	3.02E+02	7.03E+01	1.94E+02	4.97E-03	--	--	4.31E-11	1.98E-07	4.32E-14	4.73E-08	1.11E-03	2.19E-05	6.04E-05	9.90E-08
RF	WP-RF123.02	0.84	2.44E-02	--	--	--	1.87E-07	3.42E-03	8.30E-02	1.93E-02	1.28E-01	2.55E-06	--	--	8.48E-15	6.24E-08	1.19E-17	1.06E-11	2.34E-04	2.70E-05	1.66E-08	2.10E-03
RF	WP-RF123.03	12.18	3.12E+02	--	--	--	5.11E-03	8.44E+00	2.06E+02	4.78E+01	3.15E+02	6.31E-03	--	--	5.09E-10	1.51E-07	2.94E-14	4.60E-07	9.40E-04	2.48E-05	4.11E-05	1.47E-03
RF	WP-RF123.04	44.94	2.26E+02	--	--	--	2.48E-03	3.36E+01	8.06E+02	1.88E+02	1.30E+03	2.49E-02	--	--	1.94E-10	6.01E-07	1.08E-13	1.91E-07	3.76E-03	5.03E-05	1.56E-04	2.61E-04
RF	WP-RF124.01	95.12	6.87E+01	4.49E-06	--	--	1.90E-03	9.45E+00	2.47E+02	5.67E+01	3.53E+02	6.59E-03	--	--	2.29E-10	1.91E-06	3.25E-14	1.96E-07	7.83E-03	1.31E-04	4.71E-05	1.42E-04
RF	WP-RF124.02	13.44	1.82E+01	--	--	--	2.63E-04	2.65E+00	6.66E+01	1.52E+01	9.31E+01	1.84E-03	--	--	2.61E-11	1.16E-07	9.37E-15	2.35E-08	5.51E-04	1.18E-05	1.31E-05	8.78E-08
RF	WP-RF125.01	14.47	2.37E+02	--	--	--	6.46E-03	1.27E+01	3.86E+02	8.92E+01	3.19E+02	7.66E-03	--	--	8.01E-10	2.49E-06	5.49E-14	6.74E-07	9.90E-03	2.97E-04	7.67E-05	6.28E-04
RF	WP-RF126.01	1.05	6.23E+00	--	--	--	5.22E-05	1.23E+00	3.87E+01	8.66E+00	2.41E+01	5.44E-04	--	--	2.66E-12	2.78E-08	5.70E-15	3.16E-09	1.57E-04	2.43E-06	7.70E-06	1.14E-08
RF	WP-RF126.04	2.10	1.41E+01	--	--	--	1.24E-04	2.03E+00	7.07E+01	1.63E+01	4.09E+01	1.27E-03	--	--	6.55E-12	6.35E-08	1.07E-14	7.66E-09	3.23E-04	5.48E-06	1.45E-05	3.15E-08
RF	WP-RF128.01	200.13	1.33E+03	--	--	--	1.32E-02	3.10E+02	8.50E+03	2.06E+03	5.58E+03	1.51E-01	--	--	9.32E-10	4.27E-06	1.35E-12	9.47E-07	2.97E-02	2.54E-04	1.83E-03	2.97E-08
RF	WP-RF129.01	465.47	3.51E+02	1.02E-04	--	5.85E-05	4.75E-03	3.71E+01	8.67E+02	2.07E+02	1.33E+03	2.72E-02	1.21E-19	--	4.40E-10	1.08E-05	1.28E-13	4.06E-07	4.23E-02	1.39E-03	1.78E-04	6.21E-04
RF	WP-RF129.05	445.99	4.20E+02	3.42E-04	--	--	1.33E-02	3.35E+01	7.51E+02	1.81E+02	1.23E+03	2.47E-02	--	--	1.73E-09	1.96E-06	1.11E-13	1.43E-06	8.82E-03	2.07E-04	1.55E-04	6.31E-05
RF	WP-RF130.01	38.79	3.26E+02	--	5.35E-08	3.86E-04	1.06E-02	2.06E+01	4.95E+02	1.15E+02	8.00E+02	1.53E-02	1.86E-15	1.80E-02	1.30E-09	1.45E-05	4.56E-09	1.11E-06	4.21E-02	1.60E-03	9.56E-05	2.29E-03
RF	WP-RF134.02	11.28	3.13E-01	--	--	--	2.56E-06	3.74E-02	9.25E-01	2.14E-01	1.34E+00	2.82E-05	--	--	1.28E-13	5.11E-10	1.41E-16	1.53E-10	3.57E-06	2.73E-08	1.91E-07	1.31E-13
RF	WP-RF135.01	2.31	5.19E+00	--	--	--	9.32E-05	1.33E-01	3.31E+00	7.65E-01	5.00E+00	1.00E-04	--	--	9.78E-12	8.75E-08	4.71E-16	8.68E-09	3.34E-04	3.73E-05	6.58E-07	2.89E-03
RF	WP-RF135.02	10.50	2.07E+00	--	--	--	2.84E-05	2.50E-01	6.17E+00	1.43E+00	9.37E+00	1.88E-04	--	--	2.68E-12	1.10E-06	8.79E-16	2.45E-09	4.14E-03	1.33E-04	1.23E-06	1.17E-06
RF	WP-RF137.01	0.42	3.30E-01	--	--	--	6.11E-06	2.68E-02	6.81E-01	1.57E-01	9.72E-01	2.05E-05	--	--	7.05E-13	3.67E-10	1.04E-16	5.98E-10	2.56E-06	2.01E-08	1.40E-07	9.52E-14
RF	WP-RF139.01	11.76	3.54E+02	--	--	--	6.36E-03	1.34E+00	3.34E+01	7.73E+00	5.04E+01	1.01E-03	--	--	6.60E-10	6.68E-07	4.76E-15	5.89E-07	2.57E-03	2.00E-04	6.65E-06	1.30E-02
RF	WP-RF140.01	171.31	7.87E+01	1.36E-05	--	--	9.66E-04	1.10E+01	2.47E+02	5.99E+01	4.06E+02	8.12E-03	--	--	8.54E-11	1.73E-07	3.69E-14	7.98E-08	1.14E-03	1.10E-05	5.15E-05	3.50E-08
RF	WP-RF141.01	45.99	2.65E+02	--	--	--	2.14E-03	5.81E+01	1.82E+03	4.25E+02	1.22E+03	2.81E-02	--	--	1.05E-10	7.42E-05	2.80E-13	1.27E-07	2.72E-01	8.62E-03	3.78E-04	7.58E-05
RF	WP-RF141.02	177.66	1.92E+03	--	--	--	2.60E-01	2.27E+02	7.42E+03	1.77E+03	4.46E+03	1.52E-01	--	--	4.26E-08	8.36E-05	1.16E-12	3.27E-05	3.14E-01	9.63E-03	1.57E-03	8.32E-05
RL	RL105-01	59.11	1.82E+00	--	--	1.13E-01	1.26E-05	2.48E-01	1.47E+00	7.04E-01	7.79E+00	3.18E-05	--	2.09E-01	4.27E-13	4.40E-09	2.97E-16	6.24E-10	2.89E-05	2.95E-07	5.01E-07	5.56E-06

Table 5-1. CH Volume (m^3) and Activity (Ci) By Waste Stream and Radionuclide Decayed thru 2033
(Continued)

Site	Waste Stream ID	Scaled Vol (m^3)	Am-241	Am-243	Cm-244	Cs-137	Np-237	Pu-238	Pu-239	Pu-240	Pu-241	Pu-242	Pu-244	Sr-90	Th-229	Th-230	Th-232	U-233	U-234	U-235	U-236	U-238
RL	RL105-03	69.30	4.54E+01	--	--	6.65E+01	9.18E-04	3.88E+00	2.31E+01	1.27E+01	1.82E+02	6.06E-03	--	3.21E+02	8.22E-11	9.42E-06	1.15E-13	8.08E-08	4.11E-02	1.54E-03	9.76E-05	3.29E-02
RL	RL200-01	75.79	4.56E+00	--	--	6.66E-03	3.74E-05	3.23E-01	1.51E+01	3.43E+00	1.10E+01	2.94E-04	--	4.81E-04	1.65E-12	4.00E-09	1.83E-15	2.12E-09	2.94E-05	4.49E-07	2.74E-06	1.02E-06
RL	RL200-02	6850.02	2.22E+03	--	--	3.30E+00	2.37E-02	5.89E+01	1.15E+03	3.44E+02	9.35E+02	2.72E-02	--	4.87E+01	9.17E-08	1.13E-04	4.88E-05	4.63E-05	1.03E-02	3.12E-04	5.51E-04	5.97E-03
RL	RL201-03	14.49	2.74E+01	--	--	1.62E+00	1.99E-04	7.81E-04	1.88E+00	4.63E-01	1.63E-02	6.76E-07	--	4.07E+01	6.18E-12	4.93E-11	1.64E-16	9.54E-09	4.86E-07	4.08E-08	3.02E-07	7.00E-03
RL	RL202S-01	1.26	5.06E-02	--	--	6.94E-08	2.28E-06	9.46E-03	6.53E-02	2.44E-02	5.47E-02	2.81E-06	--	6.07E-08	2.05E-13	7.34E-11	9.45E-18	2.09E-10	6.73E-07	1.48E-09	1.66E-08	1.00E-14
RL	RL209E-01	101.18	2.82E+03	--	--	3.25E-06	4.08E-02	4.55E+02	3.83E+03	1.39E+03	5.62E+03	2.05E-01	--	2.85E-06	2.56E-09	1.88E-05	4.94E-13	2.95E-06	1.08E-01	2.91E-03	9.09E-04	7.24E-03
RL	RL216Z-02	342.30	1.60E+03	--	--	--	1.10E-02	3.17E+02	4.49E+03	1.06E+03	5.75E+03	6.32E-02	--	--	3.48E-10	2.23E-06	3.74E-13	5.28E-07	2.15E-02	9.73E-05	6.88E-04	2.16E-10
RL	RL221U-03	0.42	1.32E-04	--	--	1.88E-04	8.92E-10	1.35E-05	6.79E-04	1.55E-04	3.35E-04	1.32E-08	--	1.65E-04	2.65E-17	9.55E-14	5.47E-20	4.16E-14	9.17E-10	1.47E-11	1.01E-10	4.51E-17
RL	RL222S-01	88.29	1.46E+01	2.44E-05	--	5.83E-02	1.89E-03	9.29E-01	6.33E+00	2.70E+00	2.57E+01	1.85E-04	--	5.04E-02	3.74E-05	9.20E-09	1.04E-15	1.85E-02	7.58E-05	4.69E-07	1.84E-06	8.07E-03
RL	RL231Z-01	608.05	3.65E+02	5.31E-05	--	1.41E-02	8.41E-03	5.07E+01	4.70E+02	1.50E+02	1.15E+03	1.28E-02	--	1.22E-02	6.73E-10	1.24E-05	9.06E-05	7.08E-07	6.05E-02	1.10E-03	1.02E-04	4.59E-02
RL	RL231Z-03	0.84	1.14E-01	--	--	--	1.98E-06	6.98E-05	3.09E-01	1.06E-01	4.50E-02	9.52E-06	--	--	3.61E-13	3.52E-12	2.27E-16	2.30E-10	1.33E-08	1.64E-08	1.71E-07	7.98E-14
RL	RL233S-01	41.85	1.53E+01	--	--	1.76E-03	3.12E-03	1.95E+00	1.59E+01	7.13E+00	4.16E+01	1.46E-03	--	1.54E-03	3.07E-10	2.16E-08	2.76E-15	3.06E-07	1.69E-04	1.38E-06	4.86E-06	1.53E-05
RL	RL233S-03	5.25	3.88E-01	--	--	3.63E-06	3.15E-04	7.74E-02	3.65E-01	1.47E-01	2.78E-01	9.33E-05	--	2.92E-06	3.43E-11	6.57E-10	6.18E-17	3.26E-08	5.77E-06	8.63E-09	1.04E-07	3.47E-13
RL	RL300-01	114.03	5.17E+02	3.34E-02	1.84E+00	1.22E+02	6.42E-03	7.17E+01	1.21E+03	3.84E+02	2.36E+03	1.29E-01	--	1.34E-02	1.55E-04	2.39E-05	6.23E-03	8.04E-02	1.02E-01	4.30E-03	2.50E-04	3.68E-02
RL	RL300-03	5.67	1.40E+01	--	--	1.31E-03	1.66E-04	2.40E+00	1.50E+01	7.66E+00	4.22E+01	1.27E-03	--	1.57E-03	9.41E-12	5.33E-08	2.71E-15	1.12E-08	3.43E-04	6.61E-06	4.99E-06	1.09E-04
RL	RL308-01	347.76	2.18E+04	1.85E-03	--	1.14E-01	1.53E-01	5.04E+03	9.46E+03	6.12E+03	4.61E+04	5.80E+00	--	1.01E-01	1.45E-04	6.42E-05	5.30E-04	7.48E-02	4.83E-01	1.42E-02	3.99E-03	2.03E-01
RL	RL308-03	0.42	2.58E-01	--	--	--	3.68E-06	4.03E-02	3.34E-01	1.27E-01	2.28E-01	1.53E-05	--	--	4.74E-13	1.42E-09	1.96E-16	3.58E-10	6.31E-06	1.51E-08	1.73E-07	1.09E-13
RL	RL325-01	817.68	6.37E+02	4.10E-02	2.06E+00	4.04E+00	3.63E-02	1.09E+02	5.03E+02	2.30E+02	2.21E+03	3.21E-02	--	1.08E+01	2.99E-04	1.71E-04	7.94E-03	1.55E-01	8.50E-01	2.49E-02	1.50E-04	5.20E-01
RL	RL325-03	10.29	2.71E+01	1.22E-01	2.67E+01	8.28E-02	4.33E-03	8.07E+00	2.47E+01	9.67E+00	1.24E+02	2.72E-03	--	8.16E-02	3.88E-10	1.24E-07	3.43E-15	4.04E-07	8.79E-04	1.75E-05	6.30E-06	2.22E-04
RL	RL325-05	176.33	4.06E+01	3.23E-01	5.51E+01	6.30E+00	5.27E-02	1.83E+03	1.93E+02	3.98E+01	3.03E+02	1.11E-02	7.35E-11	2.32E+01	5.07E-05	6.86E-06	6.27E-07	3.62E-05	8.97E-02	7.67E-05	3.53E-05	2.38E-04
RL	RL618-01	5.64	3.28E+00	4.34E-04	--	5.63E-02	4.09E-04	9.78E-01	6.54E+00	2.52E+00	5.72E+00	2.90E-04	--	6.33E-02	5.42E-11	1.07E-08	1.34E-15	4.62E-08	8.31E-05	9.65E-05	2.01E-06	7.64E-04
RL	RLALE-02	0.63	2.51E-04	--	--	2.08E-07	1.47E-09	2.21E-05	5.29E-02	1.71E-03	1.89E-03	1.68E-07	2.27E-11	1.83E-07	3.91E-17	1.56E-13	6.06E-19	6.39E-14	1.50E-09	1.15E-09	1.12E-09	5.72E-16
RL	RLARG-01	11.13	6.41E+01	--	--	5.08E-07	9.25E-04	1.94E+02	4.56E+01	2.32E+01	7.94E+01	8.11E-04	--	4.38E-07	1.28E-10	1.79E-05	1.45E-05	9.28E-08	5.55E-02	1.07E-03	3.31E-05	1.51E-03
RL	RLBAT-01	30.18	1.70E+01	--	--	--	1.19E-03	7.72E+01	1.49E+01	6.67E+00	6.91E+01	3.22E-04	--	--	1.12E-10	4.73E-06	4.04E-06	1.12E-07	2.51E-02	6.82E-04	4.55E-06	3.52E-03
RL	RLBW-01	144.23	3.18E+02	--	--	1.34E-01	2.55E-03	4.39E+01	2.50E+02	1.25E+02	1.18E+03	1.12E-02	--	1.18E-01	1.04E-10	2.30E-06	4.42E-14	1.40E-07	1.28E-02	2.66E-04	8.15E-05	1.15E-02
RL	RLBW-03	11.13	4.37E+01	--	--	2.05E-06	4.36E-04	6.50E+00	4.28E+01	2.16E+01	1.25E+02	2.90E-03	--	1.81E-06	2.29E-11	2.19E-07	8.36E-15	2.78E-08	1.26E-03	2.99E-05	1.47E-05	4.79E-04
RL	RLCFF-01	4.62	5.21E+00	--	--	--	3.57E-05	7.36E-01	4.12E+00	2.16E+00	1.97E+01	2.41E-04	--	--	1.14E-12	7.17E-09	8.37E-16	1.72E-09	5.93E-05	3.27E-07	1.47E-06	3.50E-06
RL	RLCFF-03	5.04	6.53E+00	--	--	--	4.61E-05	1.50E+01	7.16E+00	3.51E+00	1.66E+01	4.45E-04	--	--	1.49E-12	1.27E-07	1.36E-15	2.24E-09	1.12E-03	2.45E-06	2.39E-06	4.90E-05
RL	RLCH2-01	14.36	5.38E-02	--	--	2.26E-01	4.02E-07	4.25E-03	3.78E-02	9.66E-03	3.05E-02	--	--	1.98E-01	1.35E-14	3.30E-11	3.74E-18	2.00E-11	3.02E-07	8.56E-10	6.59E-09	--
RL	RLESG-01	25.79	2.35E+01	--	--	1.29E+00	1.84E-04	3.97E+00	2.63E+01	1.28E+01	1.17E+02	3.22E-03	--	1.21E+00	2.44E-07	5.55E-06	4.53E-15	1.26E-04	2.75E-02	5.18E-04	8.35E-06	3.59E-04
RL	RLESG-03	1.05	3.63E-02	--	--	2.33E-03	2.18E-07	7.45E-03	1.82E-01	4.90E-02	2.45E-01	5.39E-05	--	2.05E-03	5.90E-15	4.22E-09	1.73E-17	9.58E-12	2.11E-05	7.61E-07	3.20E-08	8.01E-09
RL	RLEXX-01	134.61	3.24E+02	--	--	--	3.08E-03	1.03E+02	7.69E+01	6.56E+01	7.03E+02	8.00E-02	--	--	1.46E-10	2.24E-06	2.32E-14	1.86E-07	1.45E-02	1.00E-04	4.28E-05	3.94E-03
RL	RLFFTF-01	1.05	1.36E-02	--	--	6.98E-03	9.22E-08	3.05E-03	1.10E-02	9.50E-03	3.36E-02	--	--	4.58E-03	2.75E-15	2.15E-11	3.36E-18	4.31E-12	2.07E-07	2.39E-10	6.19E-09	--
RL	RLGEV-01	109.81	1.26E+02	--	--	1.85E-05	1.30E-03	2.26E+01	1.42E+02	6.16E+01	3.62E+02	9.74E-03	--	1.62E-05	6.68E-11	1.37E-05	2.18E-14	8.25E-08	6.83E-02	1.42E-03	4.02E-05	4.85E-02
RL	RLGEV-03	1.89	1.11E+01	--	--	4.46E-08	7.37E-05	1.54E+00	7.01E+00	3.96E+00	5.01E+01	1.60E-04	--	4.00E-08	2.30E-12	1.41E-07	1.53E-15	3.50E-09	7.22E-04	2.05E-05	2.70E-06	3.06E-04
RL	RLHAN-01	527.52	4.93E+02	6.98E-03	4.60E-01	1.98E+00	1.43E-02	7.48E+01	3.83E+02	1.78E+02	1.81E+03	1.31E-02	--	1.72E+00	4.91E-04	5.90E-06	7.62E-05	2.15E-01	3.05E-02	9.04E-04	1.21E-04	1.36E-02
RL	RLHAN-03	0.21	3.69E-02	--	--	--	2.47E-07	3.32E-03	1.50E-02	8.45E-03	1.12E-01	--	--	--	7.28E-15	2.34E-11	2.99E-18	1.14E-11	2.25E-07	3.25E-10	5.51E-09	--
RL	RLIAEA-03	0.42	7.94E-01	--	--	1.06E-05	5.90E-06	3.55E-01	2.21E-01	2.83E-01	6.12E-01	4.19E-04	--	9.31E-06	1.98E-13	2.75E-09	1.10E-16	2.93E-10	2.53E-05	5.00E-09	1.93E-07	1.50E-12
RL	RLMLL-01	2.30	2.45E-01	--	--	--	4.43E-06	2.29E-02	4.58E-01	1.39E-01	1.77E-01	9.27E-06	--	--	9.33E-13	2.66E-07	3.66E-16	5.50E-10	4.85E-04	2.19E-05	2.47E-07	6.76E-04
RL	RLP11-01	24.44	1.90E+00	--	--	--	1.26E-05	2.63E-01	1.20E+00	6.75E-01	8.58E+00	2.73E-05	--	--	3.91E-13	2.04E-09	2.61E-16	5.97E-10	1.87E-05	2.71E-08	4.60E-07	9.74E-14
RL	RLPFP-01	7969.56	1.94E+04	2.10E-01	--	6.23E-01	3.59E-01	3.12E+03	1.73E+04	7.89E+03	6.05E+04	2.38E+00	--	5.60E-01	2.82E-03	1.13E-04	4.27E-04	1.46E+00	6.63E-01	1.49E-02	5.14E-03	2.28E-01
RL	RLPFP-03	36.75	1.35E+02	--	--	3.30E-05	1.45E-03	2.43E+01	2.13E+02	6.83E+01	3.33E+02	1.36E-02	--	2.90E-05	7.68E-11	3.21E-06	2.42E-14	9.39E-08	1.67E-02	8.74E-05	4.45E-05	7.22E-04
RL	RLPFP-04	66.36	5.77E+02	--	--	1.90E-03	5.53E-03	8.34E+01	9.92E+02	3.23E+02	2.07E+03	3.74E-02	--	1.67E-03	2.70E-10	1.36E-06	1.14E-13	3.40E-07	9.49E-03	1.57E-04	2.11E-04	1.94E-03
RL	RLPFP-05	2180.05	1.29E+03	2.90E-05	--	3.08E-05	4.97E-02	2.14E+02	2.31E+03	6.70E+02	3.83E+03	1.50E-01	--	2.78E-05	2.21E-09	7.79E-07	1.25E-13	3.21E-06	1.03E-02	4.60E-04	3.17E-04	6.52E-04
RL	RLPURX-01	956.84	9.58E+03	9.65E-04	--	1.43E+01	7.10E-02	2.45E+03	1.50E+04	5.71E+03	6.49E+04	1.35E+00	--	1.26E+01	6.89E-03	1.90E-05	2.02E-12	3.56E+00	1.74E-01	5.99E-04	3.72E-03	4.50E-03
RL	RLRFET-01	203.68	1.01E+02	--	--	--	1.61E-03	2.94E+00	1.27E+02	3.03E+01	3.93E+01	2.50E-03	--	--	2.43E-10	1.42E-03	5.32E-14	1.70E-07	3.16E+00	1.44E-01	4.40E-05	4.41E+00
RL	RLSAN-01	3.36	5.57E+01	--	--	--	8.25E-04	5.85E+00	3.30E+01	1.86E+01	6.42E+01	7.46E-04	--	--	1.20E-10	2.92E-06	3.40E-14	8.50E-08	6.82E-03	2.55E-04	2.76E-05	6.24E-04
RL	RLSWO-01	127.73	3.28E+02	3.39E-06	--	3.77E-01	2.18E-03	5.48E+01	2.33E+02	1.25E+02	1.47E+03	1.77E-01	--	4.57E-04	3.37E-06	4.39E-07	4.42E-14	1.75E-03	3.97E-03	1.43E-05	8.13E-05	3.13E-05
RL	RLSWO-05	136.32	1.07E+01	4.72E-11	--	4.22E-05	1.06E-03	3.47E+00	2.68E+01	8.42E+00	2.53E+01	8.09E-04	--	4.11E-05	5.83E-06	1.93E-08	3.83E-08	4.14E-03	2.13E-04	2.01E-06	3.99E-06	2.28E-05
RL	RLWAR-01	213.70	6.86E+01	--	--	1.19E-07	1.15E-02	1.13E+01	4.58E+01	2.38E+01	2.36E+02	4.82E-03	--	1.05E-07	1.03E-09	3.70E-06	8.44E-15	1.07E-06	1.87E-02	6.40E-04	1.55E-05	2.90E-03
RL	RLWAR-03	7.98	1.32E+02	--	--	4.55E-07	1.03E-03	2.13E+01	5.90E+01	3.89E+01	2.99E+02	3.16E-02	--	--	4.03E-11	3.75E-07	1.78E-14	5.50E-08	2.43E-03	3.94E-05	2.88E-05	3.64E-05
RL	WP-RLBWD.001	91.98	2.64E+02	--	--	1.85E-03	3.39E-03	4.63E+01	3.13E+02	1.52E+02	6.11E+02	3.21E-02	--	1.97E-03	2.00E-10	3.62E-06	5.37E-14	2.35E-07	1.94E-02	7.53E-05	9.90E-05	5.87E-03
RL	WP-RLCBWD.001	207.48	3.75E+02	2.05E-05	--	6.87E-03	4.84E-03	6.32E+01	4.32E+02	2.05E+02	9.00E+02	3.63E-02	--	6.01E-03	7.52E-05	2.69E-06	9.38E-14	3.42E-02	1.41E-02	2.54E-04	1.52E-04	5.25E-03
RL	WP-RLCCP300D1	17.01	4.19E+01	7.10E-05	3.11E-01	1.52E-04	9.06E-04	9.91E+00	3.64E+01	1.85E+01	8.16E+01	5.84E-03	--	1.62E-04	1.17E-05	3.01E-06	6.54E-15	6.06E-03	1.52E-02	3.43E-04	1.20E-05	1.20E-03
RL	WP-RLCCP308D1	37.60	1.68E+01	1.35E-05	--	1.82E-05	2.60E-04	1.45E+00	1.94E+01	4.18E+00	2.62E+01	2.63E-04	--	1.94E-05	1.67E-11	2.60E-06	1.48E-15	1.91E-08	1.29E-02	4.27E-04	2.72E-06	8.99E-13
RL	WP-RLCFFD.001	286.43	5.73E+02	--	--	1.35E-05	4.50E-03	8.26E+01	6.07E+02	3.07E+02	1.35E+03	4.73E-02	--	1.18E-05	1.81E-10	1.72E-06	1.31E-06	2.44E-07	1.06E-02	1.52E-04	2.27E-04	3.04E-03
RL	WP-RLETECD.001	35.10	1.79E+01	--	--	3.94E-02	2.74E-04	2.01E+00	1.47E+01	6.68E+00	3.28E+01	1.23E-03	--	3.45E-02	2.14E-11	5.25E-06	5.86E-06	2.20E-08	2.29E-02	5.94E-04	4.95E-06	5.90E-04

Table 5-1. CH Volume (m^3) and Activity (Ci) By Waste Stream and Radionuclide Decayed thru 2033
(Continued)

Site	Waste Stream ID	Scaled Vol (m^3)	Am-241	Am-243	Cm-244	Cs-137	Np-237	Pu-238	Pu-239	Pu-240	Pu-241	Pu-242	Pu-244	Sr-90	Th-229	Th-230	Th-232	U-233	U-234	U-235	U-236	U-238
RL	WP-RLEXXOD.001	12.14	5.88E+01	--	--	--	6.11E-04	1.83E+01	1.39E+01	1.19E+01	1.10E+02	1.44E-02	--	--	3.59E-11	4.88E-07	5.42E-15	4.09E-08	2.81E-03	1.81E-05	8.79E-06	7.31E-04
RL	WP-RLHMOX.001	195.72	9.98E+03	4.29E-04	--	3.48E-04	4.91E-01	1.38E+03	7.75E+03	3.92E+03	1.78E+04	1.96E+00	--	3.00E-04	6.90E-08	2.18E-04	2.41E-12	5.60E-05	8.79E-01	4.87E-02	3.37E-03	5.96E-01
RL	WP-RLM209ED.001	27.16	8.42E+01	--	--	1.02E-07	1.33E-03	1.30E+01	1.14E+02	4.20E+01	1.45E+02	6.10E-03	--	8.95E-08	1.05E-10	7.03E-07	1.92E-14	1.07E-07	3.55E-03	9.57E-05	3.11E-05	1.83E-04
RL	WP-RLM231ZD.001	22.34	2.28E+01	2.67E-05	--	8.51E-04	1.45E-02	2.80E+00	6.22E+01	1.52E+01	3.81E+01	1.53E-03	--	8.70E-04	1.33E-09	7.34E-07	5.38E-15	1.38E-06	3.72E-03	3.92E-05	9.91E-06	9.78E-04
RL	WP-RLM233SD.001	50.96	3.07E+01	--	--	1.67E-03	1.30E-02	4.98E+00	4.39E+01	1.32E+01	4.26E+01	1.01E-02	--	1.46E-03	1.53E-09	1.01E-07	6.01E-15	1.40E-06	6.28E-04	9.09E-06	9.75E-06	1.20E-04
RL	WP-RLM300D.001	31.34	3.60E+01	6.76E-04	--	4.12E-05	1.10E-03	7.10E+00	4.16E+01	1.95E+01	8.93E+01	3.87E-03	--	3.61E-05	1.08E-10	2.36E-06	4.59E-05	1.04E-07	1.05E-02	4.60E-04	1.45E-05	1.14E-02
RL	WP-RLM308D.001	82.51	2.14E+03	1.42E-03	--	2.49E-02	3.56E-02	4.81E+02	1.01E+03	6.31E+02	4.04E+03	5.82E-01	--	2.17E-02	3.38E-05	1.76E-05	1.97E-04	1.54E-02	9.45E-02	2.01E-03	4.67E-04	2.61E-02
RL	WP-RLM325D.001	231.51	8.84E+02	6.59E-02	4.50E+00	5.79E-02	2.33E-02	1.48E+02	3.79E+02	1.74E+02	9.23E+02	5.97E-01	--	5.14E-02	2.35E-05	2.20E-05	2.35E-04	1.22E-02	1.14E-01	2.79E-03	1.13E-04	1.78E-02
RL	WP-RLMGEVALD.001	26.32	8.94E+00	--	--	1.40E-06	1.08E-04	1.59E+00	1.00E+01	4.25E+00	2.17E+01	7.04E-04	--	1.23E-06	7.28E-12	4.76E-07	1.94E-15	7.86E-09	2.13E-03	1.12E-04	3.15E-06	1.39E-03
RL	WP-RLMHASH.001	62.79	8.01E+02	--	--	2.10E-06	7.58E-03	6.38E+01	2.44E+03	6.03E+02	1.05E+03	8.17E-02	--	9.54E-07	4.56E-06	8.74E-07	3.97E-13	1.73E-03	6.09E-03	7.28E-05	5.37E-04	3.80E-10
RL	WP-RLMPDT.001	2130.11	5.55E+03	3.88E-03	--	1.59E-02	2.22E-01	1.08E+03	9.06E+03	3.02E+03	1.43E+04	5.71E-01	--	1.39E-02	1.25E-03	2.21E-05	8.97E-05	5.70E-01	1.37E-01	1.91E-03	2.24E-03	1.83E-02
RL	WP-RLMPFPDD	451.49	8.83E+02	1.60E-04	--	9.17E-03	1.49E-02	1.46E+02	1.43E+03	5.06E+02	1.74E+03	3.52E+00	--	5.37E-04	6.91E-05	5.30E-06	1.79E-13	3.58E-02	3.10E-02	1.30E-04	3.30E-04	7.28E-03
RL	WP-RLMPURX.001	149.84	8.29E+02	1.15E-04	--	1.85E+00	7.56E-03	1.97E+02	1.30E+03	4.84E+02	4.56E+03	1.10E-01	--	1.62E+00	8.14E-04	1.94E-06	2.21E-13	3.70E-01	1.59E-02	4.94E-05	3.59E-04	2.65E-04
RL	WP-RLMSSC.001	65.31	8.81E+02	--	--	--	7.58E-03	1.74E+02	2.79E+03	6.18E+02	3.21E+03	7.24E-02	--	--	4.04E-10	2.43E-06	4.07E-13	4.69E-07	1.68E-02	8.89E-05	5.50E-04	3.93E-04
RL	WP-RLMWARD.001	106.65	1.18E+02	1.03E-11	--	3.53E-06	1.48E-03	3.19E+01	4.76E+01	3.04E+01	2.46E+02	2.37E-02	--	3.09E-06	1.02E-10	4.69E-06	1.92E-06	1.10E-07	2.16E-02	7.38E-04	2.25E-05	3.92E-03
RL	WP-RLNPDT.002	441.48	7.36E+02	3.48E-03	--	8.46E-04	7.75E-03	1.67E+02	2.01E+03	4.79E+02	2.42E+03	8.39E-02	--	5.60E-04	5.37E-10	3.10E-06	6.21E-08	5.59E-07	1.92E-02	2.13E-04	3.98E-04	4.35E-04
RL	WP-RLNPURX.001	39.15	3.29E+02	4.13E-05	--	1.11E-03	2.42E-03	8.21E+01	4.12E+02	1.60E+02	1.99E+03	5.02E-02	--	6.81E-04	1.05E-10	1.04E-06	9.83E-14	1.34E-07	7.55E-03	1.18E-05	1.37E-04	2.26E-10
RL	WP-RLRFETS.001	64.47	6.44E+02	--	--	1.09E-05	5.77E-03	6.63E+01	3.81E+03	6.32E+02	1.57E+03	6.53E-02	--	1.07E-06	1.98E-05	2.28E-06	4.16E-13	7.51E-03	1.13E-02	2.88E-04	5.62E-04	3.04E-10
RL	WP-RLSWOCD.001	39.74	2.06E+01	5.56E-06	--	8.50E-04	3.74E-04	4.16E+00	3.82E+01	1.25E+01	5.74E+01	1.89E-03	--	7.43E-04	3.19E-11	1.07E-07	5.70E-15	3.18E-08	6.23E-04	1.19E-05	9.24E-06	7.92E-06
RL	WP-RLVIPAC.001	154.16	3.79E+02	1.69E-05	--	1.07E-03	6.29E-03	1.26E+02	9.77E+02	2.98E+02	4.29E+02	8.82E-02	--	9.30E-04	3.68E-05	1.31E-04	1.59E-13	1.55E-02	5.32E-01	1.37E-02	2.39E-04	2.62E-01
SA	SA-W134	1.47	3.22E-02	--	--	2.36E-01	1.75E-07	1.05E-02	5.82E-02	3.27E-02	1.34E-01	8.45E-06	--	1.03E-02	4.94E-12	2.49E-08	2.42E-05	3.13E-09	1.51E-04	5.05E-06	1.75E-08	1.84E-06
SA	SA-W136	59.58	4.73E+02	--	--	--	2.96E-03	1.20E-01	4.51E+00	1.19E+00	3.35E+00	1.41E-04	--	--	6.85E-11	6.23E-10	3.13E-16	1.22E-07	6.96E-06	8.45E-08	6.68E-07	4.17E-13
SA	SA-W137	0.84	3.39E-01	--	--	4.47E-03	2.33E-06	1.53E-01	4.91E-01	2.16E-01	7.15E-01	2.02E-04	--	--	6.98E-14	2.94E-09	7.66E-17	1.09E-10	1.96E-05	4.34E-07	1.41E-07	9.11E-06
SA	SA-W138M	0.21	1.36E-03	--	--	1.20E-07	1.00E-08	7.24E-08	1.58E-05	--	--	--	--	--	3.22E-16	5.10E-16	--	4.89E-13	4.91E-12	3.43E-13	--	--
SA	SA-W139	1.66	2.53E+01	--	--	1.79E+02	1.23E-04	9.88E+00	2.97E+01	1.89E+01	1.20E+02	8.89E-03	--	1.31E+02	2.44E-09	1.54E-05	3.54E-15	1.74E-06	1.05E-01	3.36E-03	8.97E-06	1.12E-03
SP	SP-CHHD	6.27	2.78E-02	--	--	2.15E+00	1.63E-07	2.47E-03	2.58E-01	--	1.47E-02	6.86E-04	--	8.30E-02	3.36E-15	3.46E-07	--	6.35E-12	2.09E-03	1.31E-04	--	2.26E-03
SR	SR-221H-EUOx	6.30	7.48E-03	6.90E-09	8.98E-04	1.22E-03	1.93E-03	6.59E-03	5.06E-01	2.85E-06	--	1.93E-03	--	1.18E-03	4.17E-02	7.73E-03	1.93E-03	7.27E+00	1.06E+01	8.48E-01	9.49E-13	2.51E-02
SR	SR-AGNS-HOM	2.30	7.83E-01	--	--	--	6.75E-04	6.80E-01	1.34E+00	3.17E-01	5.27E+00	5.52E-05	--	--	5.64E-11	2.11E-08	1.02E-16	6.12E-08	1.31E-04	4.35E-06	1.97E-07	9.27E-05
SR	SR-BCLDP-HET	3.76	1.12E-01	--	--	--	6.74E-07	2.53E+01	1.00E-01	4.63E-02	4.08E-01	1.43E-05	--	--	1.64E-14	1.46E-07	1.35E-17	2.84E-11	1.55E-03	1.97E-09	2.74E-08	4.44E-14
SR	SR-BCLDP.003.001	0.21	3.39E-02	2.28E-05	9.33E-04	5.26E-03	4.78E-07	2.13E-02	3.24E-03	5.29E-03	1.62E-01	1.58E-05	--	5.10E-03	8.48E-14	9.41E-10	2.05E-16	6.59E-11	5.75E-06	7.75E-08	2.10E-07	4.58E-07
SR	SR-BCLDP.004.004	0.21	9.82E-03	2.74E-05	--	6.90E-04	3.98E-06	4.16E-02	8.23E-04	1.35E-03	--	1.61E-08	--	6.59E-04	1.60E-12	3.17E-09	8.91E-19	8.63E-10	1.34E-05	1.69E-07	1.20E-09	3.26E-06
SR	SR-DWPF-HET	0.21	9.34E-02	--	--	1.85E-03	1.56E-06	1.68E-02	3.10E-03	4.88E-02	2.85E-02	--	--	1.78E-03	7.02E-06	1.83E-10	2.60E-17	2.96E-03	1.43E-06	4.10E-07	3.90E-08	1.16E-05
SR	SR-HBL-235F-HET	2.51	5.70E-04	--	--	--	1.72E-04	1.16E+00	9.41E-04	5.14E-04	1.07E-02	6.13E-07	--	--	1.31E-11	6.71E-09	1.50E-19	1.49E-08	7.11E-05	1.86E-11	3.05E-10	1.90E-15
SR	SR-KAC-HET	292.17	2.38E+02	--	--	--	2.87E-03	6.05E+01	5.86E+02	1.51E+02	6.18E+02	5.01E-02	--	--	1.43E-10	3.49E-07	4.43E-14	1.84E-07	3.70E-03	1.12E-03	8.98E-05	3.92E-05
SR	SR-KAC-PuOx	6068.42	3.70E+05	--	--	--	7.27E+00	8.16E+04	3.51E+05	1.70E+05	9.90E+05	7.92E+01	--	--	3.48E-04	2.67E-02	1.79E-11	3.30E-01	2.43E+02	2.26E+00	6.06E-02	8.88E-01
SR	SR-LA-PAD1	4.62	4.63E+00	1.73E-06	--	7.74E-06	2.39E-04	1.63E+03	2.16E+00	3.41E+00	1.39E+01	4.34E-03	--	9.00E-06	1.17E-06	7.15E-05	2.98E-07	6.66E-04	4.37E-01	5.19E-06	2.02E-06	1.35E-11
SR	SR-MD-HET	14.63	5.56E-01	1.20E-06	2.87E-05	6.21E-05	1.03E-04	7.47E+01	1.22E+00	1.88E-01	2.06E+00	1.19E-04	--	6.04E-05	4.25E-05	3.75E-05	3.64E-06	2.55E-02	1.92E-02	6.81E-06	1.06E-07	1.22E-04
SR	SR-MD-PAD1	62.08	3.74E+01	1.18E-04	3.52E-02	1.10E-01	3.65E-03	1.49E+04	2.05E+01	2.79E+01	1.17E+02	3.41E-02	--	1.07E-01	2.43E-10	6.15E-04	1.00E-04	2.93E-07	3.94E+00	6.48E-05	1.57E-05	2.37E-04
SR	SR-MD-SOIL	2.10	1.60E-02	--	--	3.00E-06	2.24E-06	9.31E-01	2.60E-02	3.76E-03	1.91E-02	5.02E-06	--	2.92E-06	1.65E-13	3.93E-08	1.10E-18	1.90E-10	2.41E-04	5.13E-10	2.23E-09	1.56E-14
SR	SR-NIST-HET	0.21	6.61E+00	--	--	--	4.40E-05	7.10E+00	2.57E+00	6.09E-01	1.01E+01	1.09E-04	--	--	1.22E-12	1.29E-07	8.17E-14	1.98E-09	8.89E-04	6.32E-06	7.90E-05	2.50E-07
SR	SR-SDD-HET-A	5.65	1.78E-02	3.01E-06	1.51E-04	8.79E-05	4.25E-05	3.00E+00	1.91E-01	2.68E-02	2.06E-01	2.37E-05	--	2.09E-02	5.00E-09	1.94E-08	3.19E-16	3.00E-06	1.96E-04	4.83E-08	3.48E-07	9.58E-07
SR	SR-SDD-HOM-A	3.99	1.47E-01	5.78E-04	--	--	8.10E-02	8.44E+00	8.68E-01	1.65E-01	9.93E-01	3.77E-01	--	--	6.16E-04	1.45E-04	2.32E-12	3.69E-01	8.33E-01	6.60E-04	2.47E-03	4.01E-02
SR	SR-SDD-HOM-B	10.70	2.55E+00	6.20E-04	1.57E-02	3.22E-03	6.25E-03	4.38E+02	2.81E+01	3.93E+00	2.82E+01	1.36E-02	--	1.35E-03	4.75E-10	3.14E-06	5.11E-14	5.41E-07	3.01E-02	2.78E-05	5.30E-05	8.03E-04
SR	SR-SWMF-HET-A	77.55	5.94E+00	4.12E-04	7.20E-02	3.09E-03	5.20E-03	4.90E+02	1.13E+01	3.19E+00	1.92E+01	8.27E-03	--	3.00E-03	7.90E-07	1.55E-05	1.31E-07	4.50E-04	9.89E-02	1.08E-05	1.89E-06	3.90E-04
SR	SR-SWMF-HET-B	1.05	3.55E-01	4.43E-01	2.06E+01	3.86E-06	2.32E-06	6.13E-01	1.15E-03	2.17E-01	1.19E-01	1.40E-04	2.49E-14	3.74E-06	5.91E-14	3.53E-09	5.21E-17	1.01E-10	3.74E-05	2.02E-11	1.12E-07	4.35E-13
SR	SR-T001-WSB-1	6295.93	1.55E+05	--	--	--	6.58E-01	3.81E+01	2.77E+02	1.05E+02	2.72E+04	--	--	--	7.06E-09	9.84E-04	2.74E-12	1.85E-05	8.23E+00	2.65E-01	4.30E-03	2.39E-03
SR	SR-W026-221F-HEPA	0.84	2.59E-01	3.15E-14	--	1.18E-07	2.84E-06	5.35E-02	7.83E-01	2.10E-01	1.01E+00	2.66E-05	--	1.14E-07	3.47E-07	5.28E-09	6.15E-17	1.97E-04	3.03E-05	6.02E-07	1.25E-07	4.28E-08
SR	SR-W026-221F-HET	6.48	2.97E+00	5.00E-06	1.66E-02	3.75E-04	4.47E-05	2.21E+00	9.85E+00	2.71E+00	1.80E+01	1.68E-03	--	3.64E-04	2.32E-12	2.00E-07	3.10E-07	2.99E-09	1.21E-03	1.46E-05	1.53E-06	9.61E-05

Table 5-1. CH Volume (m^3) and Activity (Ci) By Waste Stream and Radionuclide Decayed thru 2033
(Continued)

Site	Waste Stream ID	Scaled Vol (m^3)	Am-241	Am-243	Cm-244	Cs-137	Np-237	Pu-238	Pu-239	Pu-240	Pu-241	Pu-242	Pu-244	Sr-90	Th-229	Th-230	Th-232	U-233	U-234	U-235	U-236	U-238
SR	SR-W026-221F-HET-A	12.01	1.30E+00	--	1.44E-02	5.34E-01	1.61E-05	1.18E-01	2.42E+00	6.09E-01	7.49E+00	1.06E-04	--	1.46E-01	5.56E-08	1.42E-07	3.62E-15	3.16E-05	7.76E-04	2.44E-05	3.85E-06	9.29E-06
SR	SR-W026-221F-HOM	1.47	7.54E-01	1.70E-07	--	2.30E-02	2.56E-05	4.57E-01	2.69E+00	6.03E-01	2.58E+00	8.55E-05	--	1.17E-05	1.87E-12	1.12E-08	1.95E-16	2.10E-09	7.25E-05	8.66E-08	3.75E-07	4.53E-07
SR	SR-W026-772F-HET	114.29	2.91E+01	2.39E-04	1.78E-01	6.89E-02	2.72E-02	8.65E+02	4.42E+01	1.10E+01	9.41E+01	5.06E-03	--	6.66E-02	1.49E-05	3.37E-05	5.78E-05	8.59E-03	2.17E-01	1.76E-04	6.19E-06	1.47E-04
SR	SR-W026-MFFF-1	4351.83	3.30E+03	--	--	--	7.71E-03	1.62E+03	1.21E+04	2.78E+03	1.15E+05	8.23E-01	--	--	4.48E-11	3.80E-06	3.86E-13	1.52E-07	6.25E-02	4.23E-03	1.14E-03	3.69E-05
SR	SR-W026-WSB-2	821.81	5.67E+04	--	--	--	2.41E-01	1.30E+00	9.98E+00	3.44E+00	9.17E+01	6.55E-03	--	--	2.60E-09	1.40E-08	8.73E-14	6.80E-06	1.42E-04	8.39E-03	1.37E-04	7.88E-05
SR	SR-W027-221F-HET-A	7.74	1.70E+00	1.53E-06	1.10E-04	2.46E-06	2.24E-05	3.59E-01	4.94E+00	1.24E+00	6.05E+00	1.18E-04	--	2.39E-06	1.26E-07	3.85E-08	3.64E-16	7.14E-05	2.20E-04	8.94E-07	7.37E-07	2.48E-06
SR	SR-W027-221H-HEPA	84.99	1.44E+00	1.01E-05	--	8.17E-02	3.38E-03	6.86E+02	3.02E+00	8.48E-01	7.42E+00	1.53E-03	--	7.93E-02	2.57E-10	2.97E-05	2.48E-16	2.92E-07	1.82E-01	9.36E-06	5.02E-07	4.73E-12
SR	SR-W027-221H-HET	78.98	1.81E+01	1.40E-04	1.12E-01	7.63E-04	1.17E-01	5.32E+03	1.97E+01	5.53E+00	1.97E+02	1.25E-02	--	7.39E-04	4.64E-05	2.18E-04	1.77E-04	2.78E-02	1.40E+00	1.80E-04	3.11E-06	1.87E-04
SR	SR-W027-221H-HET-C	129.20	3.28E+01	9.06E-04	--	2.67E-03	3.00E-01	1.99E+02	1.10E+02	2.63E+01	9.03E+01	1.50E-02	--	2.59E-03	3.75E-06	1.12E-05	6.95E-15	2.26E-03	6.98E-02	9.17E-04	1.48E-05	5.59E-05
SR	SR-W027-221H-HOM	0.84	3.07E-01	9.67E-08	--	2.99E-03	1.18E-04	5.57E-01	6.70E-01	1.82E-01	8.76E-01	6.51E-05	--	2.90E-03	8.22E-09	2.35E-07	5.27E-15	4.68E-06	1.29E-03	2.42E-05	5.40E-06	1.27E-06
SR	SR-W027-235F-HEPA	9.82	1.12E-01	8.47E-13	--	4.59E-07	1.67E-03	8.35E+00	6.38E-02	2.76E-02	1.91E-01	4.89E-05	--	4.46E-07	1.16E-10	5.35E-07	7.29E-18	1.39E-07	3.30E-03	2.46E-05	1.55E-08	1.44E-13
SR	SR-W027-235F-HET	7.12	2.27E+00	1.05E-05	1.21E-03	1.18E-05	3.05E-02	7.60E+02	1.15E+00	4.96E-01	1.69E+01	9.51E-04	--	1.15E-05	2.63E-06	4.21E-05	1.07E-05	1.58E-03	2.62E-01	2.26E-05	2.79E-07	1.03E-05
SR	SR-W027-235F-HOM	0.21	4.30E-02	--	--	--	2.31E-07	4.49E+01	3.66E-02	2.00E-02	3.98E-01	2.38E-05	--	--	5.41E-15	2.87E-07	6.45E-18	9.39E-12	2.89E-03	7.57E-10	1.24E-08	7.77E-14
SR	SR-W027-235F-IR	82.25	1.47E+01	9.61E-05	2.13E-02	1.60E-04	2.79E-01	7.96E+03	1.06E+01	4.56E+00	3.53E+02	8.72E-03	--	1.60E-04	2.54E-06	3.72E-05	9.83E-05	1.44E-02	2.05E+00	2.07E-04	2.70E-07	9.43E-05
SR	SR-W027-321-322M-HET	1.26	4.60E+00	--	--	--	6.44E-04	2.68E-02	5.26E-02	1.24E-02	7.21E+01	2.16E-06	--	--	4.79E-11	1.55E-10	3.63E-18	5.47E-08	1.64E-06	1.04E-09	7.35E-09	6.71E-15
SR	SR-W027-773A-HET	227.13	4.20E+01	2.35E-01	1.08E+01	1.18E-01	5.30E-02	1.96E+03	9.44E+01	2.17E+01	1.66E+02	4.68E-03	2.56E-12	1.15E-01	1.70E-05	8.05E-05	1.17E-04	1.02E-02	5.16E-01	2.46E-04	1.22E-05	2.32E-03
SR	SR-W027-773A-HOM	1.05	6.16E-04	--	--	4.74E-03	1.41E-05	6.01E+01	4.37E-05	2.23E-05	1.93E-04	2.14E-05	--	4.60E-03	1.07E-12	2.63E-06	6.51E-21	1.22E-09	1.61E-02	8.61E-13	1.32E-11	6.64E-14
SR	SR-W027-FB-Pre86-C	67.43	6.58E+01	8.70E-05	1.06E-01	2.11E-04	3.59E-03	2.17E+01	1.70E+02	4.86E+01	2.77E+02	8.94E-03	--	2.05E-04	1.41E-06	8.49E-07	4.76E-06	8.04E-04	5.26E-03	1.50E-05	2.88E-05	5.15E-05
SR	SR-W027-HBL-Box	86.67	4.49E-01	3.27E-08	2.09E-03	9.69E-04	2.80E-03	1.53E+02	9.10E-01	2.71E-01	2.07E+00	5.27E-04	--	9.42E-04	1.95E-10	6.00E-06	7.14E-17	2.32E-07	3.87E-02	3.09E-07	1.52E-07	1.55E-12
SR	WP-SR-221H-PUOX	145.50	9.23E+02	--	--	1.04E-03	1.27E-02	1.99E+02	4.40E+03	1.06E+03	2.63E+03	3.05E-01	--	1.01E-03	6.27E-10	1.61E-06	2.81E-13	8.23E-07	1.48E-02	1.54E-04	5.98E-04	6.34E-06
SR	WP-SR-AGNS-HET	59.17	4.46E+00	4.62E-05	8.85E-04	1.55E-04	2.24E-03	1.10E+01	3.08E+00	1.92E+00	1.39E+01	9.15E-04	--	1.49E-04	8.66E-07	5.77E-07	2.86E-06	4.11E-04	3.01E-03	2.43E-05	1.36E-06	4.95E-04
SR	WP-SR-AGNS-HOM	4.81	3.02E+00	--	--	2.14E-04	9.46E-04	1.40E+00	2.40E+00	8.89E-01	6.45E+00	2.05E-04	--	2.06E-04	9.39E-11	1.02E-07	1.52E-07	9.32E-08	5.33E-04	3.20E-05	6.06E-07	1.22E-03
SR	WP-SR-BCLDP-HET	7.32	8.97E-02	--	--	2.87E-06	3.64E-06	5.23E+00	1.86E-01	5.14E-02	1.65E-01	1.13E-05	--	2.78E-06	2.72E-13	1.85E-07	1.66E-17	3.04E-10	1.12E-03	2.88E-06	3.20E-08	3.68E-14
SR	WP-SR-BCLDP.003.001	1.88	8.65E-02	--	--	1.08E-02	5.33E-07	5.40E-02	8.22E-03	1.34E-02	3.90E-01	4.00E-05	--	1.05E-02	1.40E-14	2.53E-09	4.31E-18	2.32E-11	1.48E-05	1.70E-10	8.31E-09	1.30E-13
SR	WP-SR-HBL-235F-HET	44.49	5.59E+00	--	--	1.20E-05	5.69E-02	3.04E+01	3.35E+00	1.74E+00	8.36E+00	5.97E-04	--	1.16E-05	4.77E-09	1.26E-06	5.60E-16	5.17E-06	7.48E-03	1.45E-05	1.08E-06	1.95E-12
SR	WP-SR-KAC-HET	0.21	2.40E-02	--	--	2.69E-07	4.60E-07	5.94E-03	9.22E-02	2.03E-02	5.98E-02	1.74E-06	--	2.61E-07	2.98E-14	1.36E-09	6.55E-18	3.46E-11	7.22E-06	1.49E-07	1.26E-08	5.68E-15
SR	WP-SR-LA-PAD1	149.25	8.67E+01	3.23E-05	--	1.42E-04	4.24E-03	3.00E+04	1.66E+02	6.18E+01	2.46E+02	8.15E-02	--	1.62E-04	2.35E-05	1.41E-03	5.21E-06	1.27E-02	8.23E+00	9.60E-05	3.85E-05	2.65E-10
SR	WP-SR-MD-HET	275.81	8.41E+00	1.58E-05	3.79E-04	8.86E-04	1.46E-03	1.05E+03	1.94E+01	3.58E+00	2.97E+01	1.68E-03	--	8.60E-04	7.74E-04	5.42E-04	5.36E-05	3.55E-01	2.73E-01	1.01E-04	2.12E-06	1.82E-03
SR	WP-SR-MD-HOM-A	5.64	7.85E-01	--	--	3.48E-08	4.87E-04	1.39E+02	3.05E-01	1.27E-02	1.81E+00	5.22E-05	--	3.35E-08	2.60E-06	8.08E-06	5.81E-18	1.18E-03	4.04E-02	1.61E-06	9.42E-09	4.47E-04
SR	WP-SR-MD-HOM-C	1.88	1.41E-02	--	--	1.98E-06	9.15E-06	1.81E+00	2.78E-02	--	--	6.65E-07	--	1.91E-06	9.15E-13	9.44E-08	--	9.07E-10	5.09E-04	5.75E-07	--	2.37E-15
SR	WP-SR-MD-PAD1	616.27	2.46E+02	7.29E-04	2.13E-01	5.80E-01	2.19E-02	9.50E+04	1.35E+02	1.74E+02	6.92E+02	2.23E-01	--	5.62E-01	1.75E-09	4.44E-03	5.86E-04	1.92E-06	2.60E+01	3.92E-04	1.08E-04	1.41E-03
SR	WP-SR-MD-SOIL	29.36	1.17E-01	--	--	2.55E-05	1.55E-05	8.46E+00	1.86E-01	2.77E-02	1.37E-01	3.76E-05	--	2.47E-05	1.26E-12	3.70E-07	8.94E-18	1.38E-09	2.18E-03	3.85E-09	1.73E-08	1.22E-13
SR	WP-SR-SDD-HET-A	3.76	5.08E-03	--	--	2.24E-04	2.30E-05	4.40E-03	1.39E-01	3.20E-02	8.88E-02	5.22E-06	--	2.17E-04	1.93E-12	2.82E-11	1.03E-17	2.09E-09	2.84E-07	2.87E-09	1.99E-08	1.70E-14
SR	WP-SR-SDD-HOM-A	3.76	8.88E-02	1.08E-05	--	2.42E-03	1.27E-05	8.27E-02	7.78E-01	1.79E-01	1.24E+00	2.34E-05	--	2.34E-03	1.14E-12	4.04E-08	6.35E-17	1.19E-09	2.02E-04	2.05E-05	1.17E-07	8.82E-04
SR	WP-SR-SDD-HOM-B	16.32	4.32E-01	7.08E-05	--	7.33E-03	3.43E-04	8.94E+00	2.59E+00	7.74E-01	2.87E+00	2.69E-04	--	7.10E-03	2.86E-11	4.14E-07	2.50E-16	3.11E-08	2.42E-03	4.22E-05	4.82E-07	1.67E-03

Table 5-1. CH Volume (m^3) and Activity (Ci) By Waste Stream and Radionuclide Decayed thru 2033
(Continued)

Site	Waste Stream ID	Scaled Vol (m^3)	Am-241	Am-243	Cm-244	Cs-137	Np-237	Pu-238	Pu-239	Pu-240	Pu-241	Pu-242	Pu-244	Sr-90	Th-229	Th-230	Th-232	U-233	U-234	U-235	U-236	U-238
SR	WP-SR-SWMF-HET-A	304.83	2.29E+01	1.58E-03	2.69E-01	1.29E-02	1.91E-02	1.89E+03	4.23E+01	1.20E+01	7.71E+01	3.07E-02	--	1.25E-02	3.25E-06	6.04E-05	5.03E-07	1.85E-03	3.85E-01	4.53E-05	7.10E-06	1.49E-03
SR	WP-SR-W026-221F-HEPA	409.84	1.49E+02	1.82E-11	--	6.62E-05	1.62E-03	2.95E+01	4.48E+02	1.19E+02	5.32E+02	1.51E-02	--	6.41E-05	2.08E-04	2.88E-06	3.83E-14	1.12E-01	1.59E-02	3.12E-04	7.39E-05	2.26E-05
SR	WP-SR-W026-221F-HET	1158.22	4.58E+02	6.43E-04	1.99E+00	4.45E-02	8.50E-03	3.03E+02	1.39E+03	3.89E+02	2.38E+03	2.37E-01	--	4.31E-02	5.53E-10	3.29E-05	4.37E-05	6.41E-07	1.80E-01	2.04E-03	2.42E-04	1.31E-02
SR	WP-SR-W026-221F-HET-A	2.51	5.42E-02	--	--	3.43E-02	1.03E-06	1.87E-02	2.64E-01	6.12E-02	1.64E-01	6.24E-06	--	3.32E-02	7.24E-14	1.32E-10	2.17E-17	8.06E-11	1.27E-06	5.73E-09	3.99E-08	2.13E-14
SR	WP-SR-W026-221F-HOM	13.21	6.83E+00	1.74E-06	--	9.71E-05	2.44E-04	4.13E+00	2.42E+01	5.42E+00	2.14E+01	7.49E-04	--	9.38E-05	2.13E-11	1.17E-07	2.10E-15	2.19E-08	6.97E-04	8.50E-07	3.69E-06	5.03E-06
SR	WP-SR-W026-772F-HET	1741.15	2.78E+02	2.32E-03	1.47E+00	5.49E-01	2.47E-01	7.83E+03	4.12E+02	1.06E+02	8.27E+02	4.71E-02	--	5.29E-01	1.52E-04	3.46E-04	5.53E-04	7.93E-02	2.04E+00	1.66E-03	6.59E-05	1.36E-03
SR	WP-SR-W027-221F-HET-A	107.34	2.69E+01	--	--	3.81E-05	3.76E-04	5.84E+00	7.52E+01	1.94E+01	9.14E+01	1.91E-03	--	3.69E-05	5.12E-06	1.37E-06	6.25E-15	2.77E-03	7.27E-03	1.39E-05	1.21E-05	9.65E-05
SR	WP-SR-W027-221F-HETA	2225.54	1.02E+03	1.07E-04	2.98E-03	4.78E-04	1.63E-02	2.67E+02	2.53E+03	7.86E+02	5.82E+03	1.27E-01	--	4.34E-04	3.03E-04	5.26E-05	1.25E-04	1.57E-01	2.69E-01	1.96E-04	5.12E-04	2.26E-03
SR	WP-SR-W027-221H-HEPA	344.39	7.34E+00	4.03E-05	--	3.41E-01	1.34E-02	3.76E+03	1.26E+01	3.84E+00	3.72E+01	7.02E-03	--	3.30E-01	1.12E-09	1.73E-04	1.24E-15	1.22E-06	1.01E+00	4.01E-05	2.39E-06	2.29E-11
SR	WP-SR-W027-221H-HET	3415.67	5.04E+02	2.64E-02	2.39E+00	1.79E-02	2.95E+00	1.35E+05	5.18E+02	1.50E+02	4.88E+03	3.22E-01	--	1.73E-02	1.37E-03	6.24E-03	5.23E-03	7.45E-01	3.66E+01	4.65E-03	9.35E-05	5.08E-03
SR	WP-SR-W027-221H-HET-C	61.08	1.58E+01	4.75E-04	--	1.23E-03	1.44E-01	9.51E+01	5.24E+01	1.27E+01	3.96E+01	7.24E-03	--	1.19E-03	1.99E-06	6.16E-06	4.08E-15	1.09E-03	3.49E-02	4.56E-04	7.87E-06	2.96E-05
SR	WP-SR-W027-221H-HET-D	8.81	3.15E-01	--	--	1.26E-06	5.62E-03	2.14E+00	6.03E-01	1.71E-01	5.95E-01	7.19E-05	--	1.22E-06	5.67E-10	7.42E-06	6.61E-17	5.61E-07	3.52E-02	4.73E-03	1.17E-07	1.09E-04
SR	WP-SR-W027-221H-HOM	4.60	1.83E+00	--	--	3.46E-06	2.25E-04	9.04E-01	8.62E+00	2.08E+00	7.69E+00	3.62E-04	--	3.35E-06	2.00E-11	9.18E-08	7.37E-16	2.09E-08	4.84E-04	1.01E-05	1.36E-06	1.24E-12
SR	WP-SR-W027-235F-HEPA	80.84	1.30E+00	8.17E-12	--	4.40E-06	1.48E-02	1.85E+02	7.00E-01	3.58E-01	2.29E+00	8.37E-04	--	4.26E-06	1.24E-09	1.04E-05	1.15E-16	1.34E-06	5.98E-02	2.17E-04	2.23E-07	2.73E-12
SR	WP-SR-W027-235F-HET	810.19	1.93E+02	8.84E-04	8.90E-02	9.17E-04	2.37E+00	6.15E+04	9.63E+01	4.17E+01	1.31E+03	8.49E-02	--	8.88E-04	2.78E-04	3.67E-03	9.09E-04	1.51E-01	2.10E+01	1.82E-03	2.60E-05	8.63E-04
SR	WP-SR-W027-235F-HOM	5.24	1.42E-01	1.42E-06	--	1.25E-05	8.45E-03	3.82E+00	3.85E-02	1.02E-02	2.17E+00	1.93E-05	--	1.21E-05	7.79E-10	1.88E-07	3.61E-18	8.06E-07	1.05E-03	8.34E-10	6.64E-09	6.59E-14
SR	WP-SR-W027-321-322M-HET	3.15	9.09E-02	9.15E-11	--	2.03E-07	7.55E-04	3.62E-02	6.75E-02	5.13E-02	2.44E-01	1.02E-04	--	1.97E-07	6.33E-11	9.75E-10	1.66E-17	6.86E-08	6.19E-06	1.40E-09	3.19E-08	3.32E-13
SR	WP-SR-W027-321M-HOM	1.88	--	--	--	6.58E-07	3.75E-06	3.78E-02	1.26E-03	--	--	1.36E-08	--	6.37E-07	3.15E-13	1.76E-09	--	3.41E-10	1.03E-05	2.62E-11	--	4.43E-17
SR	WP-SR-W027-773A-HET	887.32	1.12E+02	5.85E-01	4.14E+01	4.14E-01	2.31E-01	5.34E+03	2.35E+02	5.56E+01	4.10E+02	4.76E-01	1.09E-14	4.01E-01	5.09E-05	2.33E-04	3.01E-04	2.90E-02	1.43E+00	8.00E-04	3.29E-05	1.06E-02
SR	WP-SR-W027-773A-HOM	1.88	3.69E-04	--	--	2.78E-03	8.46E-06	3.58E+01	2.62E-05	1.34E-05	1.10E-04	1.29E-05	--	2.69E-03	7.10E-13	1.67E-06	4.31E-21	7.69E-10	9.75E-03	5.42E-13	8.31E-12	4.19E-14
SR	WP-SR-W027-FB-PRE86-C	3171.54	1.96E+03	2.51E-03	3.10E+00	5.71E-03	1.02E-01	6.35E+02	4.86E+03	1.41E+03	7.85E+03	2.55E-01	--	5.51E-03	4.46E-05	3.35E-05	1.33E-04	2.42E-02	1.94E-01	4.30E-04	8.76E-04	1.46E-03
SR	WP-SR-W027-HBL-BOX	1386.62	1.27E+01	1.33E-06	3.21E-02	1.84E-02	2.22E-01	7.41E+03	2.08E+01	7.18E+00	6.41E+01	5.22E-01	--	1.79E-02	1.69E-08	3.05E-04	2.10E-15	1.93E-05	1.88E+00	2.65E-05	4.26E-06	4.85E-05
SR	WP-SR2001.001.00	61.74	1.38E+00	--	--	2.75E-06	1.09E-05	8.74E-01	9.65E+00	1.91E+00	7.73E+00	1.93E-04	--	--	5.58E-13	1.38E-08	1.43E-15	6.54E-10	8.97E-05	3.04E-07	1.82E-06	9.61E-13
SR	WP-SR2002.002.00	70.56	4.78E+00	--	--	9.39E-06	4.10E-05	3.80E-01	1.13E+01	2.62E+00	1.84E+01	3.57E-04	--	7.60E-07	2.41E-04	5.58E-09	1.84E-15	8.86E-02	3.76E-05	3.46E-07	2.40E-06	1.72E-12
Grand Total		**1.68E+05**	**1.13E+06**	**2.24E+01**	**6.19E+03**	**6.16E+02**	**2.75E+01**	**9.42E+05**	**8.70E+05**	**3.16E+05**	**1.82E+06**	**1.48E+02**	**5.80E-03**	**8.18E+02**	**3.80E-01**	**3.98E-01**	**9.60E-02**	**1.10E+02**	**4.77E+02**	**4.56E+00**	**4.24E-01**	**3.92E+01**

Table 5-2. RH Volume (m^3) and Activity (Ci) By Waste Stream and Radionuclide Decayed thru 2033

Site	Waste Stream ID	Scaled Vol (m^3)	Am-241	Am-243	Cm-244	Cs-137	Np-237	Pu-238	Pu-239	Pu-240	Pu-241	Pu-242	Pu-244	Sr-90	Th-229	Th-230	Th-232	U-233	U-234	U-235	U-236	U-238
AE	AE-T009	356.53	7.51E+02	1.88E+01	1.78E+02	6.36E+03	1.03E-02	6.11E+02	5.72E+02	3.38E+02	2.18E+03	2.60E-01	3.49E-15	4.45E+03	2.63E-02	1.14E-04	1.05E-09	4.98E-04	1.78E-01	4.37E-02	1.60E-04	2.85E-01
AE	WP-AERHDM	66.56	5.38E+02	2.37E-01	6.27E+02	5.40E+03	5.80E-03	6.92E+02	1.83E+02	1.48E+02	2.79E+03	3.49E-01	--	3.19E+03	8.29E-05	1.11E-04	4.30E-14	4.71E-02	6.25E-01	1.29E-02	8.74E-05	3.03E-02

Table 5-2. RH Volume (m^3) and Activity (Ci) By Waste Stream and Radionuclide Decayed thru 2033
(Continued)

Site	Waste Stream ID	Scaled Vol (m^3)	Am-241	Am-243	Cm-244	Cs-137	Np-237	Pu-238	Pu-239	Pu-240	Pu-241	Pu-242	Pu-244	Sr-90	Th-229	Th-230	Th-232	U-233	U-234	U-235	U-236	U-238
AW	AW-5410N	0.63	4.92E-02	1.96E-04	7.98E-07	1.66E-01	5.25E-06	1.85E-02	6.01E-03	9.03E-03	1.16E-01	2.45E-05	--	3.39E-01	5.49E-13	5.26E-10	3.80E-18	5.27E-10	3.05E-06	3.10E-07	6.42E-09	6.15E-06
AW	AW-5882N	0.63	1.21E-01	--	--	1.33E-01	1.16E-06	--	--	--	--	--	--	1.27E-01	6.30E-14	1.21E-12	--	7.37E-11	9.05E-09	1.43E-04	--	1.11E-04
AW	AW-T031.1322	285.11	8.93E+02	1.48E-01	2.11E+01	9.08E+03	9.11E-01	2.20E+02	2.56E+02	2.74E+01	1.80E+02	9.32E-02	--	1.38E+04	4.68E-08	9.51E-05	1.08E-11	6.47E-05	6.51E-01	9.67E-03	1.37E-02	4.56E-03
AW	AW-W020.13	82.72	5.78E+02	2.71E-03	2.05E-02	1.77E+04	4.55E-02	1.90E+02	2.81E+02	9.29E+01	1.55E+03	1.63E-02	1.06E-17	8.96E+03	2.33E-04	3.17E-04	1.93E-11	1.40E-01	1.81E+00	3.26E-02	2.06E-02	2.99E-02
BT	BT-T001	192.48	6.19E-01	2.26E-03	--	7.50E+02	3.25E-03	2.21E+01	2.06E-02	--	1.59E+00	3.73E-04	--	7.24E+02	1.11E-03	1.37E-06	1.03E-12	2.05E-01	7.52E-03	7.87E-05	9.48E-04	3.77E-07
BT	WP-BT-T001	3.15	9.40E-02	--	2.24E-02	7.96E+00	6.63E-07	1.02E+00	1.10E-02	1.55E-02	1.03E-01	6.56E-03	--	1.13E+01	1.43E-05	4.68E-07	5.47E-18	7.38E-03	2.35E-03	5.08E-05	1.01E-08	6.45E-06
IN	IN-AE-AGHC-02	55.44	1.86E-01	--	5.83E-06	1.37E+04	9.96E-07	4.53E-02	4.26E+02	2.23E+02	3.99E-01	4.83E-05	--	2.09E+04	1.48E-11	1.84E-07	5.25E-06	9.91E-09	1.18E-03	4.05E-02	1.12E-04	5.50E-02
IN	IN-ID-ANLE-BIN	2.52	--	--	--	--	--	--	1.20E+00	--	--	--	--	--	--	--	--	--	--	2.01E-08	--	--
IN	IN-ID-ANLW-W269-RH	0.63	3.25E+00	--	--	1.48E-01	2.03E-05	2.86E-01	1.76E+01	3.69E+00	--	4.06E-02	--	3.78E-02	6.92E-10	8.75E-09	9.75E-16	4.15E-07	5.81E-05	1.01E-06	2.08E-06	1.40E-08
IN	IN-ID-BTO-030	1.26	1.48E-02	--	--	8.08E+00	9.26E-08	3.20E-01	1.98E-01	4.18E-03	--	7.19E-04	--	1.29E+01	3.88E-06	3.55E-07	1.10E-18	2.33E-03	2.04E-03	4.57E-05	2.35E-09	3.16E-05
IN	IN-ID-EBR-S5000	4.41	5.67E-06	--	--	8.84E+01	3.44E-11	6.72E-04	1.47E+01	5.33E-03	7.40E-06	2.60E-13	--	7.95E+00	1.34E-10	3.80E-08	1.41E-18	8.02E-08	2.51E-04	5.81E-02	3.00E-09	1.25E+00
IN	IN-ID-HFEF-S3000-RP	3.78	2.96E-03	--	--	3.14E+02	2.12E-05	8.16E-02	6.93E+00	3.63E+00	--	--	--	2.92E+02	1.84E-12	5.47E-10	1.18E-15	1.96E-09	5.52E-06	5.60E-04	2.27E-06	4.43E-03
IN	IN-ID-HFEF-S5000-RP	20.16	5.91E-03	--	--	6.46E+02	4.24E-05	1.63E-01	5.68E+01	2.85E+01	--	--	--	5.83E+02	3.68E-12	1.10E-09	9.22E-15	3.92E-09	1.11E-05	5.20E-03	1.78E-05	9.17E-03
IN	IN-ID-INL-152M	18.27	2.45E-02	--	1.07E-01	1.21E+03	1.63E-04	1.26E+00	5.02E+00	9.53E-01	1.70E-01	1.55E-05	--	1.27E+02	5.39E-07	2.84E-07	4.41E-05	3.61E-04	1.85E-03	1.11E-03	5.54E-05	1.77E-03
IN	IN-ID-MFC-SOLID	1.26	9.49E-02	--	--	1.14E+01	5.61E-07	2.66E-02	1.72E-01	4.40E-02	--	8.23E-04	--	1.23E+01	2.22E-08	2.91E-06	1.04E-17	1.40E-05	1.76E-02	1.02E-03	2.35E-08	1.37E-04
IN	IN-ID-MISC-RH	0.63	2.19E-01	--	--	4.85E-01	1.18E-06	1.36E-02	5.52E-01	1.22E-01	4.13E-01	1.61E-05	--	5.27E-01	2.13E-14	5.56E-11	2.57E-17	4.30E-11	6.96E-07	9.24E-09	6.13E-08	4.25E-14
IN	IN-ID-Miscellaneous	0.63	7.37E-01	--	--	1.52E-04	4.01E-06	2.68E+02	3.23E-01	1.01E+00	1.09E+00	1.94E-04	--	1.25E-04	7.28E-14	8.71E-06	2.12E-16	1.47E-10	6.25E-02	2.02E-08	5.06E-07	1.84E-09
IN	IN-ID-RF-S5000-RH	1.26	9.87E+01	--	--	5.66E-02	6.17E-04	2.88E-02	1.62E+00	3.55E-01	--	7.03E-04	--	3.38E-03	5.12E-07	3.02E-07	9.38E-17	3.07E-04	1.73E-03	5.70E-04	2.00E-07	4.23E-04
IN	IN-ID-Sample Fuel	2.52	--	--	--	1.51E-01	2.93E-03	--	8.68E+00	6.37E+00	--	--	--	--	1.12E-04	1.24E-11	1.42E-04	6.72E-02	1.42E-07	5.40E-04	3.58E-06	2.67E-03
IN	IN-ID-Source Material	0.63	1.72E+01	--	--	1.12E-04	9.62E-05	3.35E-02	1.20E+00	3.06E-01	3.34E-01	2.97E-05	--	9.41E-05	1.78E-12	9.38E-10	6.47E-17	3.56E-09	6.84E-06	6.74E-08	1.54E-07	1.18E-09
IN	IN-ID-TRA-W345-RH	0.63	6.87E-04	--	1.13E+02	--	1.52E-09	--	--	3.51E+00	3.96E-02	--	--	--	1.12E-17	--	8.72E-16	3.26E-14	--	--	1.89E-06	--
IN	IN-IT-152	0.89	1.00E+00	--	--	1.31E-06	6.26E-06	--	--	--	--	--	--	1.40E-06	1.45E-13	1.35E-08	--	2.59E-10	7.71E-05	6.35E-06	--	9.35E-04
IN	IN-NRF-SPC-103	138.60	1.01E+02	--	--	6.23E+03	8.08E-04	2.94E+02	1.10E+01	1.11E+01	1.14E+02	3.62E-02	--	5.51E+03	1.13E-02	3.34E-04	5.06E-15	5.15E+00	1.46E+00	3.19E-02	8.20E-06	7.82E-03
IN	WP-ID-ANLE-S5000	118.74	1.20E+02	--	8.97E-01	3.57E+03	7.44E-04	2.92E+01	1.98E+02	9.07E+01	3.33E+02	5.20E-02	--	5.82E+02	2.83E-04	1.24E-04	2.65E-14	1.61E-01	6.73E-01	2.42E-02	5.37E-05	1.17E-02
IN	WP-ID-HFEF-S5400-RH	34.44	1.18E+01	--	1.68E-01	4.76E+02	7.14E-05	7.31E+00	2.15E+01	8.51E+00	5.95E+01	3.49E-03	--	3.96E+02	1.02E-04	1.35E-05	5.84E-13	5.55E-02	6.99E-02	6.85E-03	5.67E-04	9.17E-04
IN	WP-ID-INTEC-RH	0.42	1.20E+00	--	--	1.68E+00	8.48E-06	6.68E-01	1.32E-01	2.12E-01	2.98E+00	1.08E-03	--	9.52E-01	2.75E-13	1.35E-07	8.20E-17	4.13E-10	6.59E-04	7.40E-06	1.44E-07	1.66E-04
IN	WP-ID-MFC-S5400-RH	1.68	1.46E-01	--	--	4.60E+00	9.88E-07	1.98E-02	5.40E-01	1.57E-01	7.18E-01	2.53E-05	--	3.45E+00	1.46E-05	2.33E-07	6.63E-17	6.92E-03	1.06E-03	4.02E-05	1.12E-07	1.48E-05
IN	WP-ID-RTC-S3000	0.84	3.98E-02	--	--	1.05E+00	2.90E-07	1.23E-02	9.82E-03	7.13E-03	5.74E-02	1.08E-05	--	4.35E-01	2.50E-07	7.48E-08	2.76E-18	1.24E-04	3.54E-04	2.23E-05	4.86E-09	4.84E-05
IN	WP-IN-ID-NRF-153	3.36	2.59E-03	--	--	4.16E+00	1.92E-08	1.22E-01	4.60E-04	2.23E-04	5.82E-03	6.58E-07	--	1.03E+00	1.42E-06	4.19E-08	9.39E-20	6.74E-04	1.94E-04	6.56E-06	1.58E-10	4.38E-08
IN	WP-IN-ID-NRF-SPC	17.43	2.98E+00	--	--	6.86E+01	1.96E-05	2.27E+01	4.87E-01	6.35E-01	6.05E+00	1.51E-03	--	1.92E+02	2.23E-04	6.24E-06	2.05E-16	1.21E-01	3.30E-02	1.95E-03	3.95E-07	1.55E-04
KA	KA-T001	160.40	1.91E-01	2.12E-05	3.75E-02	2.26E+02	1.09E-03	5.26E+00	9.69E-03	7.93E-03	8.66E-01	4.93E-05	6.89E-13	2.18E+02	7.71E-10	2.04E-06	1.82E-11	2.59E-07	7.56E-03	1.51E-04	1.46E-03	5.82E-07
KA	KA-T002	8.02	5.48E-01	1.40E-07	1.46E-02	2.00E+02	4.05E-06	8.25E+00	1.57E-01	1.57E-01	5.23E-01	--	--	1.51E+02	4.67E-05	6.04E-03	3.05E-03	2.31E-02	2.37E-02	5.26E-03	5.26E-03	--
KA	KA-W016	8.02	2.58E-03	1.05E-05	1.32E-03	5.94E+00	1.85E-05	1.04E-01	1.64E-04	1.33E-04	3.67E-02	8.36E-07	3.42E-13	5.91E+00	2.04E-10	2.71E-07	8.23E-12	7.71E-08	1.23E-04	2.56E-06	2.47E-05	9.87E-09
LA	LA-TA-00-03	2.67	--	--	--	--	--	--	1.24E+01	--	--	--	--	--	--	--	--	--	--	6.48E-07	--	--
LA	LA-TA-03-27	77.43	4.27E+00	--	--	1.01E+03	2.28E-05	1.36E+00	8.01E+01	2.51E+00	3.56E+01	1.52E-03	--	6.94E+02	5.02E-13	3.07E-07	6.06E-15	9.04E-10	1.80E-03	8.25E-03	7.17E-06	4.07E-05
LA	WP-LA-MHD03.002	14.24	4.03E+01	--	--	3.13E+02	3.14E-04	1.72E+01	4.88E+01	2.84E+01	1.15E+02	1.75E-02	--	2.08E+02	2.54E-04	2.91E-05	1.40E-14	1.11E-01	1.23E-01	4.34E-03	2.19E-05	4.96E-04
OR	OR-CHEM-RH-HET	4.41	1.32E+02	1.33E-10	3.77E+00	1.41E+00	6.93E-04	2.07E+00	7.11E-01	4.13E-01	8.08E-01	1.14E-03	3.18E-10	2.08E+00	6.86E-04	6.08E-07	7.64E-17	4.88E-01	4.18E-03	6.19E-05	1.94E-07	3.97E-03
OR	OR-GENR-RH-HET	1.89	3.72E-01	2.19E-02	8.76E-05	5.86E-05	1.31E-03	--	1.09E-01	2.04E-07	3.44E-05	9.94E-11	7.86E-16	5.72E-05	6.37E-11	3.08E-29	1.47E-23	9.06E-08	1.02E-24	1.72E-09	5.32E-14	8.77E-20
OR	OR-ISTP-RH-HET	5.67	7.07E+01	7.56E-02	1.95E+02	5.19E-04	7.25E-03	6.74E+01	3.71E+00	5.81E+00	9.37E+00	3.25E-03	--	5.07E-04	3.41E-10	7.54E-07	1.00E-03	4.89E-07	6.71E-03	7.56E-05	2.66E-06	8.07E-12
OR	OR-RADP-RH-HET	0.63	--	--	--	--	--	--	5.99E-02	--	--	--	--	--	--	--	--	--	--	2.83E-09	--	--
OR	OR-REDC-RH-HET	1147.42	2.70E+03	3.52E+02	2.73E+04	1.23E+03	2.65E+00	1.39E+03	2.07E+02	8.19E+02	3.73E+03	1.19E+01	1.45E-05	1.67E+04	1.33E-07	3.75E-05	1.48E-13	1.86E-04	2.88E-01	3.63E-03	3.77E-04	8.20E-02
OR	OR-RF-RH-HET	155.41	4.86E+02	4.98E+00	3.91E+02	5.36E+03	2.07E-02	3.16E+02	6.57E+01	9.74E+01	5.80E+03	5.21E-01	2.82E-02	2.34E+03	7.24E-03	2.25E+00	2.33E-04	5.15E+00	6.10E-02	1.58E-03	8.26E-03	1.78E-02
OR	OR-TBD-RH-HET	150.83	7.98E+00	5.10E-04	7.95E+00	1.18E+04	7.61E-03	4.34E+02	5.20E+00	1.62E-01	1.79E+01	2.59E-04	3.46E-05	7.07E+03	1.12E-02	2.11E-04	2.17E-11	2.43E+00	2.99E-01	5.70E-03	9.15E-03	7.35E-04
OR	OR-W213-RH-SOILS	17.01	1.13E+00	3.45E-04	1.25E-03	6.39E+00	1.16E-03	1.71E-01	5.49E-01	5.23E-03	7.09E-01	3.03E-04	--	5.08E-02	8.10E-01	1.38E-03	1.30E-02	1.05E+00	6.00E-02	8.93E-04	9.45E-04	1.13E-02

Table 5-2. RH Volume (m^3) and Activity (Ci) By Waste Stream and Radionuclide Decayed thru 2033
(Continued)

Site	Waste Stream ID	Scaled Vol (m^3)	Am-241	Am-243	Cm-244	Cs-137	Np-237	Pu-238	Pu-239	Pu-240	Pu-241	Pu-242	Pu-244	Sr-90	Th-229	Th-230	Th-232	U-233	U-234	U-235	U-236	U-238
OR	WP-OR-REDC-RH-HET	45.99	1.76E+02	8.30E+00	3.27E+03	1.33E+01	1.22E-03	5.33E+01	5.76E+01	1.07E+02	3.00E+02	1.74E-01	--	2.43E+02	2.75E-09	8.09E-06	3.54E-14	1.46E-06	4.18E-02	5.68E-04	6.66E-05	8.79E-03
RL	RL100D-08	0.55	1.74E-02	1.34E-05	--	2.80E-01	2.32E-06	5.12E-03	8.36E-03	1.08E-02	3.04E-01	4.21E-06	--	1.95E-01	1.90E-13	3.28E-11	3.47E-18	2.07E-10	3.31E-07	2.19E-06	6.71E-09	1.62E-05
RL	RL105-08	115.94	1.01E+01	--	7.83E-03	1.10E+02	8.33E-05	1.88E+00	7.82E+00	4.17E+00	3.02E+01	1.16E-04	--	5.14E+01	3.87E-12	8.07E-08	2.39E-15	4.84E-09	3.94E-04	2.13E-05	3.46E-06	4.50E-04
RL	RL105-09	687.50	7.61E+02	--	--	2.21E+03	6.45E-02	7.09E+01	4.07E+02	2.35E+02	1.28E+03	9.85E-02	--	2.99E+03	8.36E-09	3.01E-04	2.06E-10	7.17E-06	1.22E+00	4.91E-02	1.55E-01	1.07E+00
RL	RL209E-08	0.22	2.75E+00	--	--	--	4.06E-05	4.41E-01	3.49E+00	1.22E+00	4.28E+00	1.52E-04	--	--	3.28E-12	4.43E-09	6.03E-16	3.29E-09	3.59E-05	8.94E-08	9.40E-07	6.14E-13
RL	RL221U-08	30.25	2.92E+01	3.23E-06	3.15E-01	3.15E+02	6.31E-02	5.52E+00	4.86E+01	1.38E+01	2.32E+02	1.40E-03	--	2.34E+02	8.58E-09	5.56E-05	9.46E-06	7.35E-06	2.52E-01	2.65E-04	9.81E-06	4.94E-03
RL	RL222S-08	1.32	4.44E-01	1.89E-02	--	1.21E-01	2.07E-03	3.63E-02	4.67E+00	1.20E-01	3.94E+00	4.17E-04	1.73E-06	1.93E-01	7.73E-04	3.99E-10	6.38E-17	3.26E-01	3.10E-06	7.99E-06	9.57E-08	2.92E-04
RL	RL300-07	113.40	6.37E+02	3.41E+00	1.19E+02	2.86E+04	2.95E-02	1.84E+02	5.85E+01	6.90E+01	1.38E+03	2.53E-01	4.43E-13	1.33E+04	5.14E-04	2.44E-05	2.56E-11	1.77E-01	8.98E-02	1.38E-03	1.58E-02	4.37E-02
RL	RL300-08	383.06	1.19E+03	3.79E+00	3.15E+02	1.29E+05	3.43E-02	2.53E+02	7.52E+01	8.72E+01	2.62E+03	2.95E-01	3.31E-11	7.40E+04	3.98E-04	1.84E-05	1.98E-11	1.97E-01	9.59E-02	1.60E-03	1.75E-02	4.97E-02
RL	RL308-08	20.68	4.98E-03	--	7.06E-05	2.16E+00	3.43E-08	2.97E-03	2.37E-03	2.54E-03	2.24E-02	7.75E-07	--	3.74E+00	1.15E-15	2.52E-11	1.07E-18	1.69E-12	2.21E-07	3.03E-09	1.81E-09	1.01E-06
RL	RL325-07	1048.04	2.11E+03	1.27E+01	3.70E+02	2.34E+03	1.40E-01	1.31E+04	3.72E+02	3.76E+02	1.79E+04	7.31E-01	--	1.26E+04	9.17E-09	7.09E-05	2.10E-12	1.11E-05	7.76E-01	9.25E-03	2.34E-03	2.70E-02
RL	RL325-08	1103.10	3.08E+02	4.85E-03	4.20E+00	5.92E+02	4.67E-01	2.43E+01	2.15E+02	8.84E+01	5.48E+02	1.61E-02	--	3.70E+03	2.05E-03	3.50E-05	5.13E-03	1.06E+00	1.74E-01	7.08E-03	2.28E-04	1.34E-02
RL	RL325-09	6.16	9.50E-01	8.84E-03	2.69E-01	5.43E+01	7.12E-05	5.79E-01	6.96E-02	1.24E-01	2.96E+00	5.98E-04	--	5.51E+02	1.03E-11	4.45E-08	4.69E-14	9.00E-09	2.71E-04	2.73E-06	5.01E-05	7.78E-05
RL	RL618-08	18.70	1.41E+00	--	--	1.82E+02	1.23E-05	1.83E-01	1.22E+00	4.71E-01	9.50E-01	--	--	2.05E+02	5.68E-13	2.03E-09	2.51E-16	7.18E-10	1.58E-05	1.84E-04	3.77E-07	3.50E-03
RL	RLBART-08	0.33	4.31E-01	--	--	--	7.57E-06	3.59E-07	3.38E-06	1.63E-06	1.52E-06	4.72E-10	--	--	1.33E-12	1.67E-14	3.23E-21	8.67E-10	6.52E-11	1.73E-13	2.52E-12	3.81E-18
RL	RLBAT-08	6.82	4.62E+00	2.52E-02	8.37E-01	3.32E+01	4.21E-05	2.57E+00	4.21E-01	6.90E-01	1.24E+01	1.83E-03	--	2.08E+01	3.29E-11	1.40E-07	1.07E-13	1.39E-08	6.14E-04	1.66E-05	7.01E-05	3.23E-04
RL	RLBET-08	0.22	6.40E-03	--	--	5.73E-05	4.26E-08	1.75E-03	9.82E-03	5.53E-03	2.04E-02	2.20E-07	--	5.03E-05	1.25E-15	3.26E-08	1.96E-18	1.97E-12	1.61E-04	5.91E-06	3.60E-09	6.25E-08
RL	RLBW-08	0.22	1.22E+00	--	--	--	9.18E-06	1.63E-01	7.59E-01	4.28E-01	4.71E+00	1.73E-05	--	--	3.63E-13	1.64E-09	2.12E-16	4.91E-10	1.33E-05	1.94E-08	3.30E-07	6.98E-14
RL	RLCH2-09	0.22	1.50E-03	--	--	6.93E-02	9.88E-09	1.94E-05	7.19E-04	1.54E-04	--	--	--	6.36E-01	2.53E-16	1.12E-13	4.49E-20	4.30E-13	1.18E-09	1.42E-11	9.11E-11	--
RL	RLESG-08	22.77	4.96E+00	--	--	1.15E+00	3.25E-05	6.14E-01	3.18E+00	1.71E+00	1.87E+01	6.51E-05	--	3.32E-01	9.44E-13	4.33E-09	6.04E-16	1.49E-09	4.16E-05	6.89E-08	1.11E-06	2.22E-13
RL	RLFFTF-08	0.33	3.32E-03	5.41E-11	--	3.20E-01	2.34E-08	6.54E-04	2.35E-03	2.01E-03	1.30E-02	--	--	3.33E-04	7.96E-16	5.55E-12	8.49E-19	1.16E-12	4.88E-08	5.55E-11	1.43E-09	--
RL	RLGEV-08	6.49	1.28E+01	--	--	5.66E+00	1.89E-04	1.15E+00	6.47E+01	1.47E+01	1.55E+01	1.26E-03	--	4.12E+00	2.74E-11	4.06E-07	2.69E-14	1.94E-08	9.76E-04	3.87E-05	2.18E-05	1.10E-03
RL	RLHAN-08	17.60	1.57E+01	6.30E-05	--	1.41E+00	1.73E-04	1.53E+00	9.53E+00	3.68E+00	4.90E+01	1.48E-04	--	1.12E+00	3.87E-06	1.08E-08	1.30E-15	2.00E-03	1.04E-04	2.06E-07	2.40E-06	5.07E-13
RL	RLMLB-08	0.22	8.78E-02	--	5.69E+00	--	1.33E-06	9.16E-03	5.20E-02	1.24E-01	9.64E-02	1.19E-06	--	--	2.02E-13	4.06E-10	1.45E-16	1.40E-10	1.62E-06	2.61E-09	1.38E-07	9.38E-15
RL	RLPFP-08	29.48	6.68E+02	9.68E-12	--	3.16E-04	9.30E-03	1.06E+02	3.26E+02	1.57E+02	1.32E+03	4.54E-02	--	2.78E-04	5.71E-10	9.18E-07	5.55E-14	6.63E-07	8.02E-03	3.78E-05	1.02E-04	1.18E-04
RL	RLPURX-08	23.87	8.36E-01	--	--	--	1.07E-05	2.69E-02	1.08E-01	2.57E-02	2.02E+00	1.45E-06	--	--	1.37E-12	1.42E-09	5.70E-17	1.02E-09	5.23E-06	5.87E-09	4.19E-08	1.24E-14
RL	RLWTP-08	4.20	2.16E-02	--	--	4.19E+00	2.36E-05	1.35E-02	7.81E-03	1.66E-03	1.41E-03	--	--	4.56E+00	5.19E-07	9.33E-09	9.73E-16	2.19E-04	3.81E-05	1.46E-06	7.31E-07	3.28E-05
SA	SA-W135	4.47	1.62E+01	--	--	1.08E+02	8.80E-05	6.16E+00	1.88E+01	1.20E+01	6.87E+01	5.63E-03	--	7.90E+01	1.74E-09	1.10E-05	2.84E-15	1.10E-06	6.64E-02	2.13E-03	6.39E-06	7.12E-04
SA	WP-SNL-HCF-S5400-RH	4.62	9.37E-01	--	--	2.06E+01	6.48E-06	5.16E-01	5.18E-01	3.28E-01	1.71E+00	2.63E-03	--	1.13E+01	5.76E-07	6.88E-06	1.16E-16	2.98E-04	3.40E-02	1.11E-03	2.14E-07	1.70E-04
SP	SP-RHHD	1.89	3.03E-01	--	--	6.07E+00	1.79E-06	1.01E-02	6.93E-01	--	3.32E-02	2.80E-03	--	1.80E+00	3.71E-14	1.45E-06	4.17E-15	6.99E-11	8.77E-03	8.54E-04	4.70E-06	9.59E-03
SP	SP-RHIN	0.63	4.62E-02	--	--	8.63E+00	2.67E-07	5.58E-03	5.54E-01	--	5.27E-02	4.27E-03	--	1.87E-01	5.47E-15	6.71E-07	--	1.04E-11	4.06E-03	3.12E-04	--	6.27E-03
SR	SR-RH-221H.01	4.41	7.00E-01	--	--	--	2.44E+00	1.31E+03	1.19E+00	6.15E-01	1.31E+01	7.11E-04	--	--	1.69E-07	9.77E-06	1.59E-14	2.02E-04	9.27E-02	6.07E-05	1.71E-05	5.32E-08
SR	SR-RH-221H.02	3.15	--	--	--	--	9.04E-04	1.90E+00	1.92E-02	1.31E-02	--	2.26E-04	--	--	6.88E-11	5.25E-08	3.82E-18	7.83E-08	3.42E-04	3.78E-10	7.75E-09	7.01E-13
SR	SR-RH-235F.01	1.26	2.05E+02	--	--	--	3.63E-02	3.36E+02	2.99E+00	7.91E-01	2.26E+03	2.88E-04	--	--	2.71E-09	1.94E-06	2.31E-16	3.10E-06	2.05E-02	5.90E-08	4.69E-07	8.95E-13
SR	SR-RH-772F.01	0.63	9.51E-03	--	--	4.34E-01	4.03E-06	2.88E-02	2.68E-02	8.14E-03	1.95E-02	1.33E-06	--	4.14E-01	7.28E-13	1.03E-09	2.54E-16	5.36E-10	4.97E-06	1.90E-08	1.70E-07	6.42E-15
SR	SR-RH-773A.01	145.33	2.30E+01	7.46E+00	2.96E+02	8.64E+01	6.96E-04	3.38E+02	1.06E+01	6.84E+00	3.13E+01	2.97E-03	1.01E-11	6.17E+01	8.89E-11	4.30E-06	3.62E-15	7.42E-08	3.10E-02	3.02E-07	5.29E-06	1.34E-11
SR	SR-RH-FBL.01	1.26	4.29E+00	--	--	3.79E-06	3.75E-05	1.58E+00	1.83E+00	1.81E+00	6.68E+00	8.97E-05	--	3.63E-06	3.23E-05	6.73E-08	1.04E-15	1.31E-02	3.29E-04	3.76E-06	1.50E-06	2.61E-05
SR	SR-RH-FBL.02	1.89	2.11E-03	--	--	--	6.20E-05	4.36E-05	1.89E-03	1.37E-03	4.50E-03	5.16E-01	--	--	9.26E-12	2.98E-05	1.26E-14	7.53E-09	1.16E-01	1.47E+00	9.09E-06	7.38E-02
SR	SR-RH-MNDPAD1.01	3.15	1.08E+00	--	--	--	4.80E-06	2.00E+03	1.65E+00	9.04E-01	1.63E+01	1.08E-03	--	--	9.28E-14	1.55E-05	3.50E-16	1.74E-10	1.42E-01	3.75E-08	6.16E-07	3.85E-12
SR	SR-RH-SDD.01	0.63	6.39E+00	--	--	--	5.10E-05	7.75E+01	1.42E+00	8.56E-01	1.40E+01	1.43E-03	--	--	2.11E-12	7.80E-07	4.23E-16	2.81E-09	6.31E-03	3.64E-08	6.59E-07	5.77E-12
SR	SR-RH-SWD.01	0.63	3.35E-02	1.85E-02	8.57E-01	3.39E-03	1.34E-04	6.51E-02	8.62E-02	2.93E-02	3.60E-01	9.40E-06	8.93E-16	2.33E-03	1.02E-11	3.75E-10	8.10E-18	1.16E-08	3.98E-06	1.70E-09	1.67E-08	2.91E-14
SR	WP-SR-BCLDP.001.001	1.05	6.73E-01	--	8.02E-02	4.41E+00	5.14E-06	2.88E-01	5.57E-02	9.02E-02	1.63E+00	3.30E-04	--	2.89E+00	1.74E-06	6.71E-08	4.11E-17	7.92E-04	3.03E-04	4.20E-06	6.67E-08	5.68E-05
SR	WP-SR-BCLDP.001.002	0.84	3.97E-01	--	9.75E-02	3.26E-01	3.00E-06	1.09E-01	1.60E-02	2.64E-02	1.10E+00	2.11E-04	--	2.12E+00	1.37E-06	4.68E-08	1.20E-17	6.25E-04	2.08E-04	3.01E-06	1.94E-08	4.10E-05
SR	WP-SR-BCLDP.002	0.21	3.70E+00	--	4.41E-01	2.43E+01	2.83E-05	1.58E+00	3.07E-01	4.96E-01	8.97E+00	1.82E-03	--	1.58E+01	9.58E-06	3.69E-07	2.26E-16	4.36E-03	1.67E-03	2.31E-05	3.67E-07	3.12E-04
SR	WP-SR-BCLDP.003	1.47	9.95E-02	--	1.19E-02	6.53E-01	7.61E-07	4.26E-02	8.25E-03	1.34E-02	2.41E-01	4.89E-05	--	4.26E-01	2.58E-07	9.94E-09	6.10E-18	1.17E-04	4.48E-05	6.22E-07	9.90E-09	8.40E-06
SR	WP-SR-BCLDP.004.002	1.05	8.86E-02	--	2.21E-02	7.26E-02	6.69E-07	2.42E-02	3.58E-03	5.90E-03	2.49E-01	4.71E-05	--	4.72E-01	3.07E-07	1.04E-08	2.67E-18	1.40E-04	4.62E-05	6.71E-07	4.34E-09	9.14E-06
SR	WP-SR-BCLDP.004.003	0.42	1.31E-01	--	1.76E-02	3.10E-01	9.88E-07	6.48E-02	1.36E-02	2.12E-02	3.77E-01	7.28E-05	--	7.21E-01	4.09E-07	1.66E-08	9.67E-18	1.86E-04	7.45E-05	1.06E-06	1.57E-08	1.41E-05
SR	WP-SR-RH-FBL.01	1.68	4.74E+01	--	--	1.63E-04	3.24E-04	1.98E+01	2.16E+01	2.17E+01	1.06E+02	3.43E-03	--	1.57E-04	3.33E-04	7.09E-07	7.69E-15	1.72E-01	4.15E-03	5.46E-05	1.42E-05	3.66E-04
SR	WP-SR-RL-BCLDP.001	18.42	6.28E+01	--	7.73E+00	4.34E+02	4.61E-04	2.72E+01	5.27E+00	8.54E+00	1.62E+02	4.91E-01	--	2.84E+02	1.52E-04	6.01E-06	3.59E-15	7.22E-02	2.82E-02	3.90E-04	6.06E-06	5.37E-03

Table 5-2. RH Volume (m^3) and Activity (Ci) By Waste Stream and Radionuclide Decayed thru 2033
(Continued)

Site	Waste Stream ID	Scaled Vol (m^3)	Am-241	Am-243	Cm-244	Cs-137	Np-237	Pu-238	Pu-239	Pu-240	Pu-241	Pu-242	Pu-244	Sr-90	Th-229	Th-230	Th-232	U-233	U-234	U-235	U-236	U-238
SR	WP-SR-RL-BCLDP.002	0.21	6.90E+01	--	2.39E+00	3.65E+02	7.10E-04	6.30E-02	1.89E-02	4.41E-02	3.07E-01	8.89E-05	--	2.41E+02	4.79E-11	1.16E-08	2.51E-17	4.96E-08	4.37E-05	8.20E-07	3.50E-08	3.79E-05
VN	WP-GEVNC.01	19.74	6.97E+01	--	--	3.70E+01	5.51E-04	6.17E-01	5.29E+00	2.45E+00	8.80E+00	1.44E-03	--	1.10E+01	9.47E-08	2.28E-06	1.03E-15	4.49E-05	1.04E-02	3.74E-04	1.74E-06	1.89E-04
Grand Total		**7.08E+03**	**1.30E+04**	**4.12E+02**	**3.32E+04**	**2.50E+05**	**6.96E+00**	**2.25E+04**	**4.22E+03**	**3.16E+03**	**4.53E+04**	**1.59E+01**	**2.82E-02**	**1.96E+05**	**8.74E-01**	**2.26E+00**	**2.26E-02**	**1.72E+01**	**9.70E+00**	**1.85E+00**	**2.53E-01**	**3.13E+00**

SNL WIPP Inventory Needs Letter Request #2

2. *Total CH- and RH-TRU inventories of all radionuclides (scaled to a full repository), supplied in Curies and decayed through the years; 2033, 2133, 2383, 3033, 7033, and 12033.*

Table 5-3. CH Radionuclide Activities (Ci) Decayed thru Specified Years

Radionuclide	2033	2133	2383	3033	7033	12033
Ac-225	3.80E-01	1.34E+00	3.70E+00	9.59E+00	3.98E+01	6.63E+01
Ac-227	2.47E+01	1.62E+01	1.58E+01	1.57E+01	1.50E+01	1.45E+01
Ac-228	9.03E-02	9.60E-02	9.60E-02	9.60E-02	9.60E-02	9.60E-02
Ag-108	1.45E-04	8.41E-05	2.15E-05	6.18E-07	2.04E-16	2.87E-28
Ag-108m	1.67E-03	9.66E-04	2.47E-04	7.11E-06	2.35E-15	3.30E-27
Ag-109m	4.49E-08	7.54E-32	--	--	--	--
Ag-110	1.02E-09	--	--	--	--	--
Ag-110m	7.50E-08	--	--	--	--	--
Am-241	1.13E+06	1.02E+06	6.80E+05	2.40E+05	3.97E+02	1.65E+00
Am-242	4.46E+00	2.73E+00	7.98E-01	3.27E-02	9.43E-11	2.00E-21
Am-242m	4.48E+00	2.74E+00	8.02E-01	3.28E-02	9.48E-11	2.00E-21
Am-243	2.24E+01	2.22E+01	2.17E+01	2.04E+01	1.41E+01	8.94E+00
Am-245	1.88E-09	--	--	--	--	--
Am-246	2.91E-08	2.90E-08	2.87E-08	2.80E-08	2.39E-08	1.96E-08
At-217	3.80E-01	1.34E+00	3.70E+00	9.59E+00	3.98E+01	6.63E+01
Ba-133	2.31E-03	3.18E-06	2.23E-13	5.60E-32	--	--
Ba-137m	5.82E+02	5.77E+01	1.79E-01	5.36E-08	--	--
Bi-210	9.79E-01	1.71E+00	1.73E+00	2.57E+00	2.18E+01	5.50E+01
Bi-211	2.48E+01	1.62E+01	1.58E+01	1.57E+01	1.50E+01	1.45E+01
Bi-212	4.49E+02	1.67E+02	1.40E+01	1.18E-01	9.60E-02	9.60E-02
Bi-213	3.80E-01	1.34E+00	3.70E+00	9.59E+00	3.98E+01	6.63E+01
Bi-214	1.78E+00	1.73E+00	1.73E+00	2.57E+00	2.18E+01	5.50E+01
Bk-249	1.30E-04	--	--	--	--	--
Bk-250	1.63E-08	1.63E-08	1.61E-08	1.57E-08	1.34E-08	1.10E-08
C-14	2.27E-02	2.24E-02	2.17E-02	2.01E-02	1.24E-02	6.77E-03
Ca-45	2.42E-21	--	--	--	--	--
Cd-109	4.49E-08	7.63E-32	--	--	--	--
Cd-113	2.35E-22	4.13E-22	4.14E-22	4.14E-22	4.14E-22	4.14E-22
Cd-113m	8.45E-05	6.19E-07	2.84E-12	3.76E-26	--	--
Ce-139	1.82E-17	--	--	--	--	--
Ce-144	6.62E-07	--	--	--	--	--
Cf-249	1.10E+01	9.00E+00	5.49E+00	1.52E+00	5.56E-04	2.82E-08
Cf-250	3.26E+00	1.63E-02	4.48E-08	1.57E-08	1.34E-08	1.10E-08
Cf-251	1.01E-01	9.31E-02	7.67E-02	4.65E-02	2.12E-03	4.47E-05
Cf-252	5.07E-01	2.10E-12	--	--	--	--
Cl-36	2.02E-07	2.02E-07	2.02E-07	2.02E-07	2.00E-07	1.98E-07
Cm-242	3.69E+00	2.26E+00	6.60E-01	2.70E-02	7.83E-11	1.66E-21
Cm-243	2.54E+00	2.23E-01	5.10E-04	6.94E-11	--	--
Cm-244	6.19E+03	1.35E+02	9.35E-03	1.44E-13	--	--
Cm-245	2.97E+00	3.02E+00	3.10E+00	3.10E+00	2.29E+00	1.52E+00
Cm-246	5.44E+01	5.36E+01	5.17E+01	4.70E+01	2.61E+01	1.26E+01
Cm-247	3.34E-01	3.34E-01	3.34E-01	3.34E-01	3.34E-01	3.34E-01
Cm-248	4.63E-01	4.62E-01	4.62E-01	4.62E-01	4.58E-01	4.53E-01

Table 5-3. CH Radionuclide Activities (Ci) Decayed thru Specified Years
(Continued)

Radionuclide	2033	2133	2383	3033	7033	12033
Cm-250	1.17E-07	1.16E-07	1.15E-07	1.12E-07	9.55E-08	7.83E-08
Co-60	3.10E-01	6.01E-07	3.14E-21	--	--	--
Cs-134	2.80E-03	7.03E-18	--	--	--	--
Cs-135	1.67E-04	1.67E-04	1.67E-04	1.67E-04	1.66E-04	1.66E-04
Cs-137	6.16E+02	6.11E+01	1.89E-01	5.68E-08	--	--
Eu-152	1.29E+01	7.12E-02	1.60E-07	3.33E-22	--	--
Eu-154	6.85E+00	2.14E-03	3.72E-12	--	--	--
Eu-155	1.33E+00	4.92E-07	4.08E-23	--	--	--
Fe-55	1.03E-03	9.70E-15	--	--	--	--
Fr-221	3.80E-01	1.34E+00	3.70E+00	9.59E+00	3.98E+01	6.63E+01
Fr-223	3.41E-01	2.24E-01	2.18E-01	2.16E-01	2.06E-01	2.00E-01
Gd-152	5.91E-13	1.03E-12	1.04E-12	1.04E-12	1.04E-12	1.04E-12
Gd-153	5.08E-09	--	--	--	--	--
H-3	2.87E+04	1.04E+02	8.17E-05	1.10E-20	--	--
Ho-166m	1.06E-03	1.00E-03	8.69E-04	5.97E-04	5.92E-05	3.30E-06
I-129	5.02E-03	5.02E-03	5.02E-03	5.02E-03	5.02E-03	5.02E-03
In-113m	2.14E-28	--	--	--	--	--
K-40	4.00E-02	4.00E-02	4.00E-02	4.00E-02	4.00E-02	4.00E-02
Kr-85	2.41E-01	3.74E-04	3.57E-11	1.99E-29	--	--
Mn-54	4.62E-08	--	--	--	--	--
Na-22	3.13E-02	8.42E-14	--	--	--	--
Nb-93m	1.38E-03	1.37E-03	1.37E-03	1.37E-03	1.37E-03	1.37E-03
Nb-94	1.97E-03	1.97E-03	1.95E-03	1.91E-03	1.66E-03	1.40E-03
Nd-144	1.54E-13	1.54E-13	1.54E-13	1.54E-13	1.54E-13	1.54E-13
Ni-59	2.53E-02	2.53E-02	2.52E-02	2.51E-02	2.42E-02	2.31E-02
Ni-63	5.25E+00	2.62E+00	4.65E-01	5.16E-03	4.81E-15	4.42E-30
Np-237	2.75E+01	6.27E+01	1.30E+02	2.19E+02	2.68E+02	2.67E+02
Np-238	2.02E-02	1.23E-02	3.61E-03	1.48E-04	4.27E-13	9.02E-24
Np-239	2.24E+01	2.22E+01	2.17E+01	2.04E+01	1.41E+01	8.94E+00
Np-240	6.95E-06	6.95E-06	6.95E-06	6.96E-06	6.97E-06	6.99E-06
Np-240m	5.79E-03	5.79E-03	5.79E-03	5.80E-03	5.81E-03	5.83E-03
Pa-231	1.59E+01	1.59E+01	1.58E+01	1.56E+01	1.49E+01	1.45E+01
Pa-233	2.75E+01	6.27E+01	1.30E+02	2.19E+02	2.68E+02	2.67E+02
Pa-234	5.09E-02	5.09E-02	5.09E-02	5.09E-02	5.09E-02	5.09E-02
Pa-234m	3.92E+01	3.92E+01	3.92E+01	3.92E+01	3.92E+01	3.92E+01
Pb-209	3.80E-01	1.34E+00	3.70E+00	9.59E+00	3.98E+01	6.63E+01
Pb-210	9.79E-01	1.71E+00	1.73E+00	2.57E+00	2.18E+01	5.50E+01
Pb-211	2.48E+01	1.62E+01	1.58E+01	1.57E+01	1.50E+01	1.45E+01
Pb-212	4.49E+02	1.67E+02	1.40E+01	1.18E-01	9.60E-02	9.60E-02
Pb-214	1.78E+00	1.73E+00	1.73E+00	2.57E+00	2.18E+01	5.50E+01
Pd-107	3.30E-06	3.30E-06	3.30E-06	3.30E-06	3.30E-06	3.30E-06
Pm-146	6.32E-07	2.27E-12	5.58E-26	--	--	--
Pm-147	4.40E-01	1.47E-12	--	--	--	--
Po-210	9.79E-01	1.71E+00	1.73E+00	2.57E+00	2.18E+01	5.50E+01
Po-211	6.81E-02	4.46E-02	4.35E-02	4.31E-02	4.11E-02	3.99E-02
Po-212	2.88E+02	1.07E+02	9.00E+00	7.56E-02	6.15E-02	6.15E-02
Po-213	3.72E-01	1.31E+00	3.62E+00	9.39E+00	3.89E+01	6.49E+01
Po-214	1.78E+00	1.73E+00	1.73E+00	2.57E+00	2.18E+01	5.50E+01
Po-215	2.48E+01	1.62E+01	1.58E+01	1.57E+01	1.50E+01	1.45E+01
Po-216	4.49E+02	1.67E+02	1.40E+01	1.18E-01	9.60E-02	9.60E-02

Table 5-3. CH Radionuclide Activities (Ci) Decayed thru Specified Years
(Continued)

Radionuclide	2033	2133	2383	3033	7033	12033
Po-218	1.78E+00	1.73E+00	1.73E+00	2.57E+00	2.18E+01	5.50E+01
Pr-144	6.62E-07	--	--	--	--	--
Pr-144m	9.27E-09	--	--	--	--	--
Pu-236	8.69E-12	3.62E-22	--	--	--	--
Pu-238	9.42E+05	4.27E+05	5.93E+04	3.48E+02	2.15E-10	4.40E-21
Pu-239	8.70E+05	8.67E+05	8.61E+05	8.45E+05	7.53E+05	6.52E+05
Pu-240	3.16E+05	3.13E+05	3.05E+05	2.85E+05	1.87E+05	1.10E+05
Pu-241	1.82E+06	1.45E+04	3.19E+00	3.11E+00	2.29E+00	1.52E+00
Pu-242	1.48E+02	1.48E+02	1.48E+02	1.48E+02	1.47E+02	1.45E+02
Pu-243	3.34E-01	3.34E-01	3.34E-01	3.34E-01	3.34E-01	3.34E-01
Pu-244	5.80E-03	5.80E-03	5.80E-03	5.80E-03	5.82E-03	5.84E-03
Pu-246	2.91E-08	2.90E-08	2.87E-08	2.80E-08	2.39E-08	1.96E-08
Ra-223	2.48E+01	1.62E+01	1.58E+01	1.57E+01	1.50E+01	1.45E+01
Ra-224	4.49E+02	1.67E+02	1.40E+01	1.18E-01	9.60E-02	9.60E-02
Ra-225	3.80E-01	1.34E+00	3.70E+00	9.59E+00	3.98E+01	6.63E+01
Ra-226	1.78E+00	1.73E+00	1.73E+00	2.57E+00	2.18E+01	5.50E+01
Ra-228	9.03E-02	9.60E-02	9.60E-02	9.60E-02	9.60E-02	9.60E-02
Rb-87	1.80E-10	1.80E-10	1.80E-10	1.80E-10	1.80E-10	1.80E-10
Rh-106	9.91E-05	--	--	--	--	--
Rn-219	2.48E+01	1.62E+01	1.58E+01	1.57E+01	1.50E+01	1.45E+01
Rn-220	4.49E+02	1.67E+02	1.40E+01	1.18E-01	9.60E-02	9.60E-02
Rn-222	1.78E+00	1.73E+00	1.73E+00	2.57E+00	2.18E+01	5.50E+01
Ru-106	9.91E-05	--	--	--	--	--
S-35	1.50E-30	--	--	--	--	--
Sb-125	5.70E-03	5.34E-14	--	--	--	--
Sb-126	1.18E-06	1.18E-06	1.18E-06	1.17E-06	1.14E-06	1.10E-06
Sb-126m	1.71E-05	1.70E-05	1.70E-05	1.69E-05	1.65E-05	1.59E-05
Se-75	1.19E-32	--	--	--	--	--
Se-79	6.91E-05	6.91E-05	6.90E-05	6.89E-05	6.83E-05	6.75E-05
Sm-146	1.70E-13	1.81E-13	1.81E-13	1.81E-13	1.81E-13	1.81E-13
Sm-147	1.23E-09	1.24E-09	1.24E-09	1.24E-09	1.24E-09	1.24E-09
Sm-148	1.75E-16	1.75E-16	1.75E-16	1.75E-16	1.75E-16	1.75E-16
Sm-151	1.27E+01	5.88E+00	8.57E-01	5.73E-03	2.38E-16	4.48E-33
Sn-113	2.14E-28	--	--	--	--	--
Sn-119m	3.38E-24	--	--	--	--	--
Sn-121	7.50E-05	2.13E-05	9.11E-07	2.53E-10	--	--
Sn-121m	9.66E-05	2.74E-05	1.17E-06	3.25E-10	--	--
Sn-126	1.71E-05	1.70E-05	1.70E-05	1.69E-05	1.65E-05	1.59E-05
Sr-90	8.18E+02	6.97E+01	1.48E-01	1.65E-08	--	--
Ta-182	3.50E-25	--	--	--	--	--
Tc-99	4.56E+01	4.56E+01	4.55E+01	4.54E+01	4.48E+01	4.41E+01
Te-123	6.98E-22	6.98E-22	6.98E-22	6.98E-22	6.98E-22	6.98E-22
Te-123m	1.61E-28	--	--	--	--	--
Te-125m	1.39E-03	1.30E-14	--	--	--	--
Th-227	2.44E+01	1.60E+01	1.56E+01	1.54E+01	1.48E+01	1.43E+01
Th-228	4.49E+02	1.67E+02	1.40E+01	1.18E-01	9.60E-02	9.60E-02
Th-229	3.80E-01	1.34E+00	3.70E+00	9.59E+00	3.98E+01	6.63E+01
Th-230	3.98E-01	9.31E-01	2.64E+00	7.44E+00	3.63E+01	7.05E+01
Th-231	4.56E+00	4.65E+00	4.86E+00	5.41E+00	8.55E+00	1.20E+01
Th-232	9.60E-02	9.60E-02	9.60E-02	9.60E-02	9.60E-02	9.60E-02

Table 5-3. CH Radionuclide Activities (Ci) Decayed thru Specified Years
(Continued)

Radionuclide	2033	2133	2383	3033	7033	12033
Th-234	3.92E+01	3.92E+01	3.92E+01	3.92E+01	3.92E+01	3.92E+01
Tl-204	1.32E-08	1.43E-16	1.77E-36	--	--	--
Tl-206	1.29E-06	2.25E-06	2.29E-06	3.39E-06	2.88E-05	7.25E-05
Tl-207	2.47E+01	1.62E+01	1.58E+01	1.56E+01	1.49E+01	1.45E+01
Tl-208	1.61E+02	6.01E+01	5.05E+00	4.24E-02	3.45E-02	3.45E-02
Tl-209	7.98E-03	2.81E-02	7.76E-02	2.01E-01	8.35E-01	1.39E+00
U-232	4.38E+02	1.62E+02	1.36E+01	2.13E-02	1.20E-19	--
U-233	1.10E+02	1.10E+02	1.10E+02	1.10E+02	1.13E+02	1.16E+02
U-234	4.77E+02	6.60E+02	7.91E+02	8.11E+02	8.02E+02	7.91E+02
U-235	4.56E+00	4.65E+00	4.86E+00	5.41E+00	8.55E+00	1.20E+01
U-236	4.24E-01	1.36E+00	3.64E+00	9.31E+00	3.68E+01	5.82E+01
U-237	4.36E+01	3.48E-01	7.63E-05	7.43E-05	5.47E-05	3.64E-05
U-238	3.92E+01	3.92E+01	3.92E+01	3.92E+01	3.92E+01	3.92E+01
U-240	5.79E-03	5.79E-03	5.79E-03	5.80E-03	5.81E-03	5.83E-03
Y-90	8.19E+02	6.97E+01	1.48E-01	1.65E-08	--	--
Zn-65	2.40E-10	--	--	--	--	--
Zr-93	1.37E-03	1.37E-03	1.37E-03	1.37E-03	1.37E-03	1.37E-03
Grand Total	**5.12E+06**	**2.64E+06**	**1.91E+06**	**1.37E+06**	**9.43E+05**	**7.66E+05**

Table 5-4. RH Radionuclide Activities (Ci) Decayed thru Specified Years

Radionuclide	2033	2133	2383	3033	7033	12033
Ac-225	8.74E-01	1.02E+00	1.37E+00	2.25E+00	6.67E+00	1.03E+01
Ac-227	1.19E+00	5.29E-02	1.47E-02	3.98E-02	1.88E-01	3.57E-01
Ac-228	4.56E-02	2.26E-02	2.26E-02	2.26E-02	2.26E-02	2.26E-02
Ag-108	5.15E-03	2.98E-03	7.62E-04	2.19E-05	7.24E-15	1.02E-26
Ag-108m	5.92E-02	3.43E-02	8.76E-03	2.52E-04	8.32E-14	1.17E-25
Ag-109m	1.10E-03	1.88E-27	--	--	--	--
Ag-110	7.94E-09	--	--	--	--	--
Ag-110m	5.84E-07	--	--	--	--	--
Am-241	1.30E+04	1.24E+04	8.32E+03	2.95E+03	2.09E+01	1.02E+01
Am-242	4.72E+00	2.89E+00	8.45E-01	3.46E-02	9.99E-11	2.11E-21
Am-242m	4.74E+00	2.90E+00	8.49E-01	3.48E-02	1.00E-10	2.12E-21
Am-243	4.12E+02	4.09E+02	3.99E+02	3.75E+02	2.58E+02	1.61E+02
Am-245	5.99E-08	--	--	--	--	--
Am-246	5.88E-07	5.86E-07	5.80E-07	5.65E-07	4.82E-07	3.95E-07
Ar-39	4.78E-02	3.69E-02	1.94E-02	3.63E-03	1.21E-07	3.07E-13
Ar-42	8.75E-02	1.06E-02	5.48E-05	6.16E-11	--	--
At-217	8.74E-01	1.02E+00	1.37E+00	2.25E+00	6.67E+00	1.03E+01
Ba-133	3.88E+00	5.33E-03	3.74E-10	9.38E-29	--	--
Ba-137m	2.36E+05	2.35E+04	7.27E+01	2.18E-05	--	--
Be-10	1.03E-05	1.03E-05	1.03E-05	1.03E-05	1.03E-05	1.02E-05
Bi-210	1.45E+01	1.78E+01	1.62E+01	1.28E+01	4.52E+00	3.51E+00
Bi-211	1.19E+00	5.30E-02	1.47E-02	3.98E-02	1.88E-01	3.57E-01
Bi-212	9.23E+00	3.40E+00	3.05E-01	2.30E-02	2.26E-02	2.26E-02
Bi-213	8.74E-01	1.02E+00	1.37E+00	2.25E+00	6.67E+00	1.03E+01
Bi-214	1.85E+01	1.78E+01	1.62E+01	1.28E+01	4.52E+00	3.51E+00
Bk-249	4.13E-03	--	--	--	--	--

Table 5-4. RH Radionuclide Activities (Ci) Decayed thru Specified Years
(Continued)

Radionuclide	2033	2133	2383	3033	7033	12033
Bk-250	3.30E-07	3.28E-07	3.25E-07	3.17E-07	2.70E-07	2.21E-07
C-14	5.34E+01	5.27E+01	5.12E+01	4.73E+01	2.92E+01	1.59E+01
Ca-45	1.05E-11	--	--	--	--	--
Cd-109	1.10E-03	1.88E-27	--	--	--	--
Cd-113	1.16E-17	1.86E-17	1.86E-17	1.86E-17	1.86E-17	1.86E-17
Cd-113m	3.33E+00	2.44E-02	1.12E-07	1.48E-21	--	--
Ce-139	1.02E-12	--	--	--	--	--
Ce-144	6.76E-03	--	--	--	--	--
Cf-249	3.73E+01	3.06E+01	1.87E+01	5.16E+00	1.89E-03	9.59E-08
Cf-250	1.26E+02	6.27E-01	1.43E-06	3.17E-07	2.70E-07	2.21E-07
Cf-251	8.39E+00	7.77E+00	6.41E+00	3.88E+00	1.77E-01	3.73E-03
Cf-252	1.76E+00	7.30E-12	--	--	--	--
Cm-242	3.91E+00	2.39E+00	6.99E-01	2.86E-02	8.29E-11	1.75E-21
Cm-243	3.61E+01	3.17E+00	7.26E-03	9.88E-10	--	--
Cm-244	3.32E+04	7.21E+02	5.01E-02	7.74E-13	--	--
Cm-245	2.15E+01	2.16E+01	2.16E+01	2.11E+01	1.54E+01	1.02E+01
Cm-246	4.55E+02	4.49E+02	4.33E+02	3.93E+02	2.19E+02	1.05E+02
Cm-247	4.08E-02	4.09E-02	4.10E-02	4.11E-02	4.13E-02	4.13E-02
Cm-248	1.31E+00	1.31E+00	1.31E+00	1.30E+00	1.29E+00	1.28E+00
Cm-250	2.35E-06	2.34E-06	2.32E-06	2.26E-06	1.93E-06	1.58E-06
Co-60	3.79E+02	7.35E-04	3.84E-18	--	--	--
Cs-134	1.08E+01	2.72E-14	--	--	--	--
Cs-135	6.47E-02	6.47E-02	6.47E-02	6.47E-02	6.46E-02	6.45E-02
Cs-137	2.50E+05	2.48E+04	7.70E+01	2.31E-05	--	--
Dy-159	4.60E-13	--	--	--	--	--
Es-254	4.19E-10	--	--	--	--	--
Eu-149	6.03E-20	--	--	--	--	--
Eu-152	7.38E+01	4.07E-01	9.17E-07	1.91E-21	--	--
Eu-154	2.30E+03	7.20E-01	1.25E-09	--	--	--
Eu-155	1.83E+02	6.76E-05	5.61E-21	--	--	--
Fe-55	6.46E+01	6.05E-10	--	--	--	--
Fr-221	8.74E-01	1.02E+00	1.37E+00	2.25E+00	6.67E+00	1.03E+01
Fr-223	1.64E-02	7.30E-04	2.03E-04	5.49E-04	2.59E-03	4.93E-03
Gd-152	4.54E-12	7.07E-12	7.08E-12	7.08E-12	7.08E-12	7.08E-12
Gd-153	7.77E-08	--	--	--	--	--
H-3	7.18E+03	2.60E+01	2.04E-05	2.75E-21	--	--
Ho-166m	2.94E-05	2.77E-05	2.40E-05	1.65E-05	1.63E-06	9.10E-08
I-129	8.30E-01	8.30E-01	8.30E-01	8.30E-01	8.30E-01	8.30E-01
In-113m	1.01E-14	--	--	--	--	--
In-115	1.33E-16	1.33E-16	1.33E-16	1.33E-16	1.33E-16	1.33E-16
Ir-194	1.02E-02	9.74E-08	2.77E-20	--	--	--
K-42	8.75E-02	1.06E-02	5.48E-05	6.16E-11	--	--
Kr-85	5.35E+02	8.32E-01	7.93E-08	4.42E-26	--	--
La-137	8.71E-07	8.70E-07	8.68E-07	8.61E-07	8.22E-07	7.76E-07
Lu-177	2.66E-14	--	--	--	--	--
Lu-177m	1.21E-13	--	--	--	--	--
Mn-54	4.19E-03	--	--	--	--	--
Mo-93	5.47E-01	5.37E-01	5.11E-01	4.49E-01	2.03E-01	7.55E-02
Na-22	2.56E-03	6.89E-15	--	--	--	--
Nb-91	7.12E-02	6.43E-02	4.99E-02	2.57E-02	4.36E-04	2.66E-06

Table 5-4. RH Radionuclide Activities (Ci) Decayed thru Specified Years
(Continued)

Radionuclide	2033	2133	2383	3033	7033	12033
Nb-92	6.52E-08	6.52E-08	6.52E-08	6.52E-08	6.52E-08	6.52E-08
Nb-93m	3.65E+00	7.26E-01	6.65E-01	6.14E-01	4.11E-01	3.05E-01
Nb-94	4.34E+00	4.33E+00	4.29E+00	4.20E+00	3.66E+00	3.09E+00
Nd-144	8.52E-12	8.52E-12	8.52E-12	8.52E-12	8.52E-12	8.52E-12
Ni-59	5.16E+02	5.15E+02	5.14E+02	5.11E+02	4.93E+02	4.70E+02
Ni-63	8.67E+02	4.34E+02	7.68E+01	8.52E-01	7.96E-13	7.30E-28
Np-235	2.57E-04	--	--	--	--	--
Np-237	6.96E+00	7.39E+00	8.22E+00	9.30E+00	9.91E+00	9.91E+00
Np-238	2.14E-02	1.31E-02	3.82E-03	1.56E-04	4.51E-13	9.55E-24
Np-239	4.12E+02	4.09E+02	3.99E+02	3.75E+02	2.58E+02	1.61E+02
Np-240	3.38E-05	3.38E-05	3.39E-05	3.39E-05	3.39E-05	3.40E-05
Np-240m	2.82E-02	2.82E-02	2.82E-02	2.82E-02	2.83E-02	2.83E-02
Os-185	1.77E-21	--	--	--	--	--
Os-194	1.02E-02	9.74E-08	2.76E-20	--	--	--
Pa-231	1.04E-03	4.94E-03	1.47E-02	3.98E-02	1.88E-01	3.57E-01
Pa-233	6.96E+00	7.39E+00	8.22E+00	9.30E+00	9.91E+00	9.91E+00
Pa-234	4.07E-03	4.07E-03	4.07E-03	4.07E-03	4.07E-03	4.07E-03
Pa-234m	3.13E+00	3.13E+00	3.13E+00	3.13E+00	3.13E+00	3.13E+00
Pb-209	8.74E-01	1.02E+00	1.37E+00	2.25E+00	6.67E+00	1.03E+01
Pb-210	1.45E+01	1.78E+01	1.62E+01	1.28E+01	4.52E+00	3.51E+00
Pb-211	1.19E+00	5.30E-02	1.47E-02	3.98E-02	1.88E-01	3.57E-01
Pb-212	9.23E+00	3.40E+00	3.05E-01	2.30E-02	2.26E-02	2.26E-02
Pb-214	1.85E+01	1.78E+01	1.62E+01	1.28E+01	4.52E+00	3.51E+00
Pd-107	1.70E-02	1.70E-02	1.70E-02	1.70E-02	1.70E-02	1.70E-02
Pm-145	1.61E+00	3.21E-02	1.80E-06	1.58E-17	--	--
Pm-146	5.26E-01	1.89E-06	4.64E-20	--	--	--
Pm-147	2.54E+01	8.51E-11	--	--	--	--
Po-210	1.45E+01	1.78E+01	1.62E+01	1.28E+01	4.52E+00	3.51E+00
Po-211	3.27E-03	1.46E-04	4.04E-05	1.09E-04	5.16E-04	9.82E-04
Po-212	5.91E+00	2.18E+00	1.95E-01	1.48E-02	1.45E-02	1.45E-02
Po-213	8.55E-01	9.96E-01	1.34E+00	2.20E+00	6.53E+00	1.01E+01
Po-214	1.85E+01	1.78E+01	1.62E+01	1.28E+01	4.52E+00	3.51E+00
Po-215	1.19E+00	5.30E-02	1.47E-02	3.98E-02	1.88E-01	3.57E-01
Po-216	9.23E+00	3.40E+00	3.05E-01	2.30E-02	2.26E-02	2.26E-02
Po-218	1.85E+01	1.78E+01	1.62E+01	1.28E+01	4.52E+00	3.51E+00
Pr-144	6.76E-03	--	--	--	--	--
Pr-144m	9.46E-05	--	--	--	--	--
Pu-236	6.65E-02	2.77E-12	--	--	--	--
Pu-238	2.25E+04	1.02E+04	1.42E+03	8.40E+00	2.21E-10	4.66E-21
Pu-239	4.22E+03	4.21E+03	4.18E+03	4.11E+03	3.70E+03	3.23E+03
Pu-240	3.16E+03	3.22E+03	3.14E+03	2.93E+03	1.92E+03	1.13E+03
Pu-241	4.53E+04	3.83E+02	2.17E+01	2.11E+01	1.54E+01	1.02E+01
Pu-242	1.59E+01	1.60E+01	1.62E+01	1.67E+01	1.88E+01	2.00E+01
Pu-243	4.08E-02	4.09E-02	4.10E-02	4.11E-02	4.13E-02	4.13E-02
Pu-244	2.82E-02	2.82E-02	2.82E-02	2.83E-02	2.83E-02	2.83E-02
Pu-246	5.88E-07	5.86E-07	5.80E-07	5.65E-07	4.82E-07	3.95E-07
Ra-223	1.19E+00	5.30E-02	1.47E-02	3.98E-02	1.88E-01	3.57E-01
Ra-224	9.23E+00	3.40E+00	3.05E-01	2.30E-02	2.26E-02	2.26E-02
Ra-225	8.74E-01	1.02E+00	1.37E+00	2.25E+00	6.67E+00	1.03E+01
Ra-226	1.85E+01	1.78E+01	1.62E+01	1.28E+01	4.52E+00	3.51E+00

Table 5-4. RH Radionuclide Activities (Ci) Decayed thru Specified Years
(Continued)

Radionuclide	2033	2133	2383	3033	7033	12033
Ra-228	4.55E-02	2.26E-02	2.26E-02	2.26E-02	2.26E-02	2.26E-02
Rb-87	1.29E-06	1.29E-06	1.29E-06	1.29E-06	1.29E-06	1.29E-06
Rh-102	1.30E-08	--	--	--	--	--
Rh-106	2.11E-02	--	--	--	--	--
Rn-219	1.19E+00	5.30E-02	1.47E-02	3.98E-02	1.88E-01	3.57E-01
Rn-220	9.23E+00	3.40E+00	3.05E-01	2.30E-02	2.26E-02	2.26E-02
Rn-222	1.85E+01	1.78E+01	1.62E+01	1.28E+01	4.52E+00	3.51E+00
Ru-106	2.11E-02	--	--	--	--	--
S-35	6.34E-22	--	--	--	--	--
Sb-125	1.52E+01	1.42E-10	--	--	--	--
Sb-126	8.05E-03	8.05E-03	8.03E-03	8.00E-03	7.78E-03	7.51E-03
Sb-126m	1.22E-01	1.22E-01	1.21E-01	1.21E-01	1.18E-01	1.14E-01
Sc-46	6.10E-22	--	--	--	--	--
Se-75	1.05E-15	--	--	--	--	--
Se-79	1.80E-01	1.80E-01	1.80E-01	1.80E-01	1.78E-01	1.76E-01
Sm-145	1.08E-05	--	--	--	--	--
Sm-146	6.18E-08	7.13E-08	7.13E-08	7.13E-08	7.13E-08	7.13E-08
Sm-147	9.40E-08	9.46E-08	9.46E-08	9.46E-08	9.46E-08	9.46E-08
Sm-148	9.12E-17	9.12E-17	9.12E-17	9.12E-17	9.12E-17	9.12E-17
Sm-151	1.41E+02	6.54E+01	9.54E+00	6.38E-02	2.66E-15	4.99E-32
Sn-113	1.01E-14	--	--	--	--	--
Sn-119m	5.50E-06	--	--	--	--	--
Sn-121	3.42E+00	9.69E-01	4.15E-02	1.15E-05	--	--
Sn-121m	4.40E+00	1.25E+00	5.35E-02	1.48E-05	--	--
Sn-123	1.37E-13	--	--	--	--	--
Sn-126	1.22E-01	1.22E-01	1.21E-01	1.21E-01	1.18E-01	1.14E-01
Sr-90	1.96E+05	1.67E+04	3.54E+01	3.95E-06	--	--
Ta-182	9.08E-13	--	--	--	--	--
Tb-157	1.84E-01	1.16E-01	3.66E-02	1.82E-03	1.70E-11	1.57E-21
Tc-97	1.69E-06	1.69E-06	1.69E-06	1.69E-06	1.69E-06	1.68E-06
Tc-97m	2.46E-20	--	--	--	--	--
Tc-98	3.39E-07	3.39E-07	3.39E-07	3.39E-07	3.39E-07	3.38E-07
Tc-99	5.33E+02	5.33E+02	5.33E+02	5.32E+02	5.25E+02	5.16E+02
Te-121	4.02E-12	--	--	--	--	--
Te-121m	4.04E-12	--	--	--	--	--
Te-123	3.41E-14	3.41E-14	3.41E-14	3.41E-14	3.41E-14	3.41E-14
Te-123m	2.57E-15	--	--	--	--	--
Te-125m	3.70E+00	3.47E-11	--	--	--	--
Te-127	9.30E-16	--	--	--	--	--
Te-127m	9.49E-16	--	--	--	--	--
Th-227	1.17E+00	5.23E-02	1.45E-02	3.92E-02	1.85E-01	3.52E-01
Th-228	9.23E+00	3.40E+00	3.05E-01	2.30E-02	2.26E-02	2.26E-02
Th-229	8.74E-01	1.02E+00	1.37E+00	2.25E+00	6.67E+00	1.03E+01
Th-230	2.26E+00	2.27E+00	2.30E+00	2.39E+00	2.94E+00	3.59E+00
Th-231	1.85E+00	1.85E+00	1.85E+00	1.85E+00	1.87E+00	1.89E+00
Th-232	2.26E-02	2.26E-02	2.26E-02	2.26E-02	2.26E-02	2.26E-02
Th-234	3.13E+00	3.13E+00	3.13E+00	3.13E+00	3.13E+00	3.13E+00
Tl-206	1.91E-05	2.35E-05	2.14E-05	1.69E-05	5.96E-06	4.63E-06
Tl-207	1.19E+00	5.29E-02	1.47E-02	3.97E-02	1.87E-01	3.56E-01
Tl-208	3.32E+00	1.22E+00	1.10E-01	8.28E-03	8.12E-03	8.12E-03

Table 5-4. RH Radionuclide Activities (Ci) Decayed thru Specified Years
(Continued)

Radionuclide	2033	2133	2383	3033	7033	12033
Tl-209	1.83E-02	2.14E-02	2.88E-02	4.73E-02	1.40E-01	2.17E-01
Tm-170	3.99E-15	--	--	--	--	--
Tm-171	7.37E-03	1.55E-18	--	--	--	--
U-232	8.87E+00	3.29E+00	2.75E-01	4.32E-04	2.43E-21	--
U-233	1.72E+01	1.72E+01	1.72E+01	1.72E+01	1.71E+01	1.69E+01
U-234	9.70E+00	1.41E+01	1.72E+01	1.77E+01	1.75E+01	1.73E+01
U-235	1.85E+00	1.85E+00	1.85E+00	1.85E+00	1.87E+00	1.89E+00
U-236	2.53E-01	2.62E-01	2.86E-01	3.44E-01	6.27E-01	8.47E-01
U-237	1.08E+00	9.16E-03	5.18E-04	5.04E-04	3.68E-04	2.44E-04
U-238	3.13E+00	3.13E+00	3.13E+00	3.13E+00	3.13E+00	3.13E+00
U-240	2.82E-02	2.82E-02	2.82E-02	2.82E-02	2.83E-02	2.83E-02
V-49	1.26E-04	--	--	--	--	--
W-181	1.77E-16	--	--	--	--	--
Y-90	1.96E+05	1.67E+04	3.54E+01	3.95E-06	--	--
Zn-65	6.10E-08	--	--	--	--	--
Zr-93	2.44E-01	2.44E-01	2.44E-01	2.44E-01	2.44E-01	2.43E-01
Grand Total	**1.01E+06**	**1.16E+05**	**2.00E+04**	**1.25E+04**	**7.64E+03**	**6.04E+03**

5.2 Waste, Packaging, Emplacement, and Operational Materials

SNL WIPP Inventory Needs Letter Request #'s 3 & 4

3. *Total inventory (scaled to a full repository) of all nonradiological waste material parameters reported in masses (in kg) for both CH- and RH-TRU waste. Nonradiological waste material parameters include: cellulosic, plastic and rubber (CPR) materials; iron-based metal/alloys; aluminum-based metal/alloys; other metals; solidified inorganic materials; solidified organic materials; vitrified materials; cements; soils; and other inorganic materials. These components may affect actinide solubility or gas generation rates.*

   Include only Portland cement (and concrete or other cements containing CaO or $Ca(OH)_2$) in the inventory of cement. Specify whether the partial mass density of cement is based on unreacted (dry) cement, reacted (hydrated) cement, or a combination. Do not include Portland cement under other waste material parameters.

4. *Total inventory (scaled to a full repository) of steel, lead, CPR and any other materials used to facilitate packaging of waste in the WIPP, reported as masses (in kg) for both CH- and RH-TRU waste. These materials may affect gas generation rates.*

Table 5-5. Waste and Packaging Materials

Waste Materials	CH Mass (kg)	RH Mass (kg)
Iron-based Metal/Alloys	1.41E+07	1.33E+06
Aluminum-based Metal/Alloys	5.13E+05	4.36E+04
Other Metal/Alloys	8.27E+05	1.57E+05
Other Inorganic Materials	5.97E+06	4.49E+06
Cellulose	4.10E+06	1.70E+05
Rubber	1.09E+06	5.12E+04
Plastic	5.32E+06	4.14E+05
Cement*	1.76E+06	2.08E+03
Solidified Inorganic Material	1.21E+07	3.61E+04
Solidified Organic Material	5.28E+06	3.70E+03
Soil	4.99E+06	1.90E+04
Vitrified	--	--
Packaging Materials		
Cellulose	1.47E+06	--
Plastic	2.83E+06	4.68E+05
Rubber	7.28E+04	5.73E+03
Steel	3.12E+07	1.65E+07
Lead	--	1.38E+07
Grand Total	**9.15E+07**	**3.74E+07**

** The Cement totals here reflect only those reported by the TRU waste sites. The emplaced portion is accounted for in the Solidified Inorganic Material, Solidified Organic Material, and Other Inorganic Materials categories. For an estimate of total cements, see Table 5-6 below.*

Table 5-6. Cements

Type	CH Mass (kg)	RH Mass (kg)
Reacted Only	2.32E+06	3.35E+03
Unreacted Only	3.20E+03	--
Combination Reacted / Unreacted	6.55E+06	1.47E+02
Grand Total	**8.88E+06**	**3.50E+03**

NOTE: These estimates taken from LANL 2018c. For more information, see section 4.3. These values account for the emplaced amounts and the estimated amounts reported by the sites.

SNL WIPP Inventory Needs Letter Request #5

5. *Total inventory (scaled to a full repository) of any non-containerized CPR materials and other biodegradable materials that will be disposed of in WIPP, reported as masses (in kg). This includes any CPR materials used in general WIPP operations or to directly facilitate*

emplacement of waste and MgO in the WIPP. These materials may affect gas generation rates.

Table 5-7. Emplacement and Operational Materials

Material	Emplacement Material Mass (kg)	Operational Material Mass (kg)	Total Mass (kg)
Cellulose	2.24E+05	4.50E+01	2.24E+05
Plastic	1.54E+06	4.89E+03	1.55E+06
Rubber	--	4.79E+03	4.79E+03
Grand Total	**1.77E+06**	**9.72E+03**	**1.78E+06**

NOTE: These estimates taken from LANL 2018d. For more information, see section 4.3.

5.3 Other Chemical Constituents

SNL WIPP Inventory Needs Letter Request #6

6. *Total inventory (scaled to a full repository) of organic ligands (acetic acid, sodium acetate, citric acid, sodium citrate, oxalic acid, sodium oxalate and sodium EDTA) and oxyanions (sulfates, nitrates and phosphates), reported as masses (in kg). These components may affect actinide solubility or gas generation rates.*

Table 5-8. Oxyanions

Oxyanion	Total Mass (kg)
Nitrate	1.69E+06
Phosphate	2.76E+05
Sulfate	4.54E+05
Grand Total	**2.42E+06**

NOTE: These estimates taken from LANL 2018c. For more information, see section 4.3.

Table 5-9. Organic Ligands

Organic Ligand	Total Mass (kg)
Acetate	1.37E+04
Acetic Acid	1.59E+04
Citrate	2.63E+03
Citric Acid	5.08E+03
EDTA	4.03E+02
Oxalate	7.00E+02
Oxalic Acid	1.70E+04
Grand Total	**5.54E+04**

NOTE: These estimates taken from LANL 2018c. For more information, see section 4.3.

6.0 COMPARISON WITH THE PAIR-2012

This section presents the delta between values presented in section 5.0 of this report and their counterparts from the *Performance Assessment Inventory Report – 2012* (PAIR-2012; LANL 2012) which supplied inventory parameters to support the third CRA (CRA-2014). These deltas are provided simply to demonstrate the differences between the two reports. Although the same scaling methodology applied for this report was also used for the PAIR-2012, the two reports are based on different underlying inventories (12/31/2011 for PAIR-2012, and 12/31/2017 for PAIR-2018), and thus use distinct scaling factors to scale to a full repository.

Table 6-1. Comparing Activity (Ci) By Radionuclide Decayed to 2033

Radionuclide	PAIR-2012		PAIR-2018		Net Change	
	CH	RH	CH	RH	CH	RH
Am-241	6.97E+05	8.06E+03	1.13E+06	1.30E+04	+4.33E+05	+4.94E+03
Am-243	2.18E+01	2.95E+01	2.24E+01	4.12E+02	+6.21E-01	+3.83E+02
Cm-244	5.24E+03	4.73E+03	6.19E+03	3.32E+04	+9.53E+02	+2.85E+04
Cs-137	2.31E+03	2.33E+05	6.16E+02	2.50E+05	-1.70E+03	+1.74E+04
Np-237	2.04E+01	2.84E+00	2.75E+01	6.96E+00	+7.12E+00	+4.12E+00
Pu-238	5.95E+05	5.80E+03	9.42E+05	2.25E+04	+3.47E+05	+1.67E+04
Pu-239	5.67E+05	7.27E+03	8.70E+05	4.22E+03	+3.03E+05	-3.05E+03
Pu-240	1.67E+05	7.94E+03	3.16E+05	3.16E+03	+1.49E+05	-4.78E+03
Pu-241	6.48E+05	1.49E+04	1.82E+06	4.53E+04	+1.17E+06	+3.04E+04
Pu-242	1.66E+03	6.44E+03	1.48E+02	1.59E+01	-1.51E+03	-6.42E+03
Pu-244	1.01E-02	7.38E-06	5.80E-03	2.82E-02	-4.34E-03	+2.82E-02
Sr-90	2.31E+03	2.07E+05	8.18E+02	1.96E+05	-1.49E+03	-1.06E+04
Th-229	4.19E-01	9.81E-01	3.80E-01	8.74E-01	-3.90E-02	-1.07E-01
Th-230	4.13E+00	1.02E-02	3.98E-01	2.26E+00	-3.73E+00	+2.25E+00
Th-232	1.48E+00	1.46E-02	9.60E-02	2.26E-02	-1.39E+00	+7.95E-03
U-233	9.82E+01	4.04E+01	1.10E+02	1.72E+01	+1.16E+01	-2.32E+01
U-234	2.10E+02	3.23E+01	4.77E+02	9.70E+00	+2.67E+02	-2.26E+01

Table 6-1. Comparing Activity (Ci) By Radionuclide Decayed to 2033
(Continued)

Radionuclide	PAIR-2012		PAIR-2018		Net Change	
	CH	RH	CH	RH	CH	RH
U-235	8.66E+00	6.77E+01	4.56E+00	1.85E+00	-4.09E+00	-6.59E+01
U-236	5.08E+00	3.65E-01	4.24E-01	2.53E-01	-4.65E+00	-1.12E-01
U-238	3.51E+01	2.97E+01	3.92E+01	3.13E+00	+4.08E+00	-2.65E+01

Table 6-2. Comparing Total Activity (Ci) By Year

Year	PAIR-2012		PAIR-2018		Net Change	
	CH	RH	CH	RH	CH	RH
2033	2.70E+06	9.36E+05	5.12E+06	1.01E+06	+2.43E+06	+7.94E+04
2133	1.62E+06	1.16E+05	2.64E+06	1.16E+05	+1.02E+06	-3.20E+01
2383	1.17E+06	3.00E+04	1.91E+06	2.00E+04	+7.34E+05	-9.97E+03
3033	8.49E+05	2.53E+04	1.37E+06	1.25E+04	+5.23E+05	-1.28E+04
7033	5.93E+05	2.02E+04	9.43E+05	7.64E+03	+3.50E+05	-1.25E+04
12033	4.87E+05	1.73E+04	7.66E+05	6.04E+03	+2.78E+05	-1.13E+04

Table 6-3. Comparing Waste and Packaging Materials (kg)

	PAIR-2012		PAIR-2018		Net Change	
	CH	RH	CH	RH	CH	RH
Waste Materials						
Iron-based Metal/Alloys	1.09E+07	1.35E+06	1.41E+07	1.33E+06	+3.22E+06	-1.53E+04
Aluminum-based Metal/Alloys	4.37E+05	2.01E+04	5.13E+05	4.36E+04	+7.54E+04	+2.36E+04
Other Metal/Alloys	7.62E+05	4.71E+05	8.27E+05	1.57E+05	+6.44E+04	-3.15E+05
Other Inorganic Materials	6.34E+06	1.03E+06	5.97E+06	4.49E+06	-3.66E+05	+3.46E+06
Cellulose	3.55E+06	1.18E+05	4.10E+06	1.70E+05	+5.54E+05	+5.15E+04
Rubber	1.09E+06	8.80E+04	1.09E+06	5.12E+04	-2.32E+03	-3.68E+04
Plastic	5.20E+06	2.93E+05	5.32E+06	4.14E+05	+1.12E+05	+1.22E+05
Cement*	2.71E+06	1.32E+06	1.76E+06	2.08E+03	-9.51E+05	-1.32E+06
Solidified Inorganic Material	1.11E+07	2.08E+04	1.21E+07	3.61E+04	+9.53E+05	+1.53E+04
Solidified Organic Material	4.01E+06	2.69E+03	5.28E+06	3.70E+03	+1.26E+06	+1.01E+03
Soil	5.80E+06	1.39E+05	4.99E+06	1.90E+04	-8.10E+05	-1.20E+05
Vitrified	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Packaging Materials						
Cellulose	7.23E+05	0.00E+00	1.47E+06	0.00E+00	+7.49E+05	0.00E+00
Plastic	2.47E+06	3.01E+05	2.83E+06	4.68E+05	+3.61E+05	+1.67E+05
Rubber	6.91E+04	4.18E+03	7.28E+04	5.73E+03	+3.66E+03	+1.56E+03
Steel	3.00E+07	6.86E+06	3.12E+07	1.65E+07	+1.12E+06	+9.60E+06

Table 6-3. Comparing Waste and Packaging Materials (kg)
(Continued)

	PAIR-2012		PAIR-2018		Net Change	
	CH	RH	CH	RH	CH	RH
Lead	0.00E+00	8.28E+03	0.00E+00	1.38E+07	0.00E+00	+1.38E+07
Grand Total	**8.52E+07**	**1.20E+07**	**9.15E+07**	**3.74E+07**	**+6.35E+06**	**+2.54E+07**

** The Cement totals here reflect only those reported by the TRU waste sites. The emplaced portion is accounted for in the Solidified Inorganic Material, Solidified Organic Material, and Other Inorganic Materials categories. For an estimate of total cements, see Table 6-4 below.*

Table 6-4. Comparing Cements (kg)

Type	PAIR-2012		PAIR-2018		Net Change	
	CH	RH	CH	RH	CH	RH
Reacted Only	2.90E+06	1.32E+06	2.32E+06	3.35E+03	-5.73E+05	-1.32E+06
Unreacted Only	--	--	3.20E+03	--	+3.20E+03	--
Combination Reacted/Unreacted	6.55E+06	--	6.55E+06	1.47E+02	+1.69E+02	+1.47E+02
Grand Total	**9.45E+06**	**1.32E+06**	**8.88E+06**	**3.50E+03**	**-5.70E+05**	**-1.32E+06**

Table 6-5. Comparing Emplacement and Operational Materials (kg)

Material	PAIR-2012	PAIR-2018	Net Change
Cellulose	2.60E+05	2.24E+05	-3.62E+04
Plastic	1.25E+06	1.55E+06	+3.02E+05
Rubber	--	4.79E+03	+4.79E+03
Grand Total	**1.51E+06**	**1.78E+06**	**+2.70E+05**

Table 6-6. Comparing Oxyanions (kg)

	PAIR-2012	PAIR-2018	Net Change
Nitrate	1.70E+06	1.69E+06	-1.27E+04
Phosphate	2.07E+05	2.76E+05	+6.87E+04
Sulfate	4.72E+05	4.54E+05	-1.85E+04
Grand Total	**2.38E+06**	**2.42E+06**	**+3.76E+04**

Table 6-7. Comparing Organic Ligands (kg)

	PAIR-2012	PAIR-2018	Net Change
Acetate	9.96E+03	1.37E+04	+3.76E+03
Acetic Acid	1.41E+04	1.59E+04	+1.79E+03
Citrate	2.55E+03	2.63E+03	+7.25E+01
Citric Acid	5.23E+03	5.08E+03	-1.52E+02
EDTA	3.76E+02	4.03E+02	+2.65E+01
Oxalate	6.50E+02	7.00E+02	+5.00E+01
Oxalic Acid	1.78E+04	1.70E+04	-8.34E+02
Grand Total	**5.07E+04**	**5.54E+04**	**+4.71E+03**

7.0 ATTACHMENTS

Attachment 1: SNL WIPP Inventory Needs Letter (10/24/2018)

ATTACHMENT 1. SNL WIPP INVENTORY NEEDS LETTER (10/24/2018)

Sandia National Laboratories
Operated for the U.S. Department of Energy by
Sandia Corporation

Todd R. Zeitler
Principal Member of Technical Staff
4100 National Parks Hwy
Carlsbad, NM 88220

Phone: (575) 234-0073
Fax: (575) 234-0061
Internet: tzeitle@sandia.gov

October 24, 2018

Russ Patterson
Department of Energy
Carlsbad Field Office
4021 National Parks Hwy
Carlsbad, NM 88220

Subject: Sandia's WIPP Inventory Needs for Performance Assessment

This letter details Sandia's WIPP inventory data needs for Performance Assessment. The data needs are largely the same as Zeitler (2016). In accordance with the direction provided by Shrader (2018), please only consider inventory data reported to the end of the calendar year 2033. In addition, we request a comparison of the currently requested inventory with that from the PAIR used in the most recent compliance calculations.

In order to conduct performance assessments of the WIPP that account for revisions to the inventory and account for both currently emplaced waste and to-be-emplaced waste, we will need an update to the following:

1. Waste stream volumes (in m^3) and inventory of radionuclides on a waste stream basis for both CH- and RH-TRU waste, supplied in Curies and decayed to the year 2033, for the following radionuclides (scaled to a full repository):

   ^{241}Am, ^{243}Am, ^{244}Cm, ^{137}Cs, ^{237}Np, ^{238}Pu, ^{239}Pu, ^{240}Pu, ^{241}Pu, ^{242}Pu, ^{244}Pu, ^{90}Sr, ^{229}Th, ^{230}Th, ^{232}Th, ^{233}U, ^{234}U, ^{235}U, ^{236}U, and ^{238}U.

2. Total CH- and RH-TRU inventories of all radionuclides (scaled to a full repository), supplied in Curies and decayed through the years: 2033, 2133, 2383, 3033, 7033, and 12033.

3. Total inventory (scaled to a full repository) of all nonradiological waste material parameters reported as masses (in kg) for both CH- and RH-TRU waste. Nonradiological waste material parameters include: cellulosic, plastic and rubber (CPR) materials; iron-based metal/alloys; aluminum-based metal/alloys; other metals; solidified inorganic materials; solidified organic materials; vitrified materials; cements; soils; and other inorganic materials. These components may affect actinide solubility or gas generation rates.

Include only Portland cement (and concrete or other cements containing CaO or $Ca(OH)_2$) in the inventory of cement. Specify whether the partial mass density of cement is based on unreacted (dry) cement, reacted (hydrated) cement, or a combination. Do not include Portland cement under other waste material parameters.

4. Total inventory (scaled to a full repository) of steel, lead, CPR and any other materials used to facilitate packaging of waste in the WIPP, reported as masses (in kg) for both CH- and RH-TRU waste. These materials may affect gas generation rates.

5. Total inventory (scaled to a full repository) of any non-containerized CPR materials and other biodegradable materials that will be disposed of in WIPP, reported as masses (in kg). This includes any CPR materials used in general WIPP operations or to directly facilitate emplacement of waste and MgO in the WIPP. These materials may affect gas generation rates.

6. Total inventory (scaled to a full repository) of organic ligands (acetic acid, sodium acetate, citric acid, sodium citrate, oxalic acid, sodium oxalate and sodium EDTA) and oxyanions (sulfates, nitrates and phosphates), reported as masses (in kg). These components may affect actinide solubility or gas generation rates.

In order for the update to be incorporated into performance assessment calculations, the data must be collected and analyzed in accordance with a Quality Assurance program approved by the Carlsbad Field Office.

Sincerely,

Todd R. Zeitler

References:

Zeitler, T.R. 2016. "Sandia's WIPP Inventory Data Needs for Performance Assessment" Correspondence. May 5, 2016. Carlsbad, NM: Sandia National Laboratories.

Shrader, T. 2018. "Assumption for the WIPP Facility Closure Date for the Purpose of Preparing the 2018 Annual TRU Waste Inventory Report and Performance Assessment Inventory Report for use in the Compliance Recertification Application – 2019" Correspondence. August 28, 2018. U.S. DOE Carlsbad Field Office

CC:
Anderson Ward, DOE
Greg Van Soest, LANL
Bill McInroy, LANL
Steve Kouba, RES
Chris Camphouse, SNL
Paul Shoemaker, SNL
Department 8881 Day File