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LOS ALAMOS NATIONAL LABORATORY
CARLSBAD OPERATIONS

Chemical and Cement Components 2017 Inventory Estimates

Standard Analysis Report
INV-SAR-50, Revision 0

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1.0 INTRODUCTION

This standard analysis report provides the estimates for the chemical (oxyanions and complexing agents) and cement components with a data collection cut-off date of December 31, 2017. These estimates will be included in a Performance Assessment Inventory Report developed for the U.S. Department of Energy (DOE) deferred performance assessment (PA) for the 2019 Compliance Recertification Application (CRA).

2.0 OBJECTIVE

The objective of this analysis is to report scaled (full repository) estimated masses for oxyanions: nitrate, phosphate and sulfate; complexing agents: acetate, acetic acid, citrate, citric acid, ethylenediaminetetraacetic acid (EDTA), oxalate, and oxalic acid; and cement on a waste stream basis, while accounting for waste streams that have been emplaced since the report, INV-SAR-28, *Chemical and Cement Components 2011 Inventory Estimates* (Young 2012). The PA needs to account for all waste at the sites and emplaced in the WIPP; however, since the WIPP's Waste Data System (WDS) does not track chemical and cement components, it is necessary for this analysis to account for the masses of these components that currently remain at the sites and have been emplaced at the WIPP.

This report is written in accordance with Los Alamos National Laboratory-Carlsbad Operations (LANL-CO) procedure LCO-QP9-1, *Analyses* (LANL-CO 2017a), and is identified as task number 1 in INV-AP-01, *Analysis Plan for Transuranic Waste Inventory* (LANL-CO 2018a).

Acronyms and definitions for terms used in this analysis are located in LANL-CO Acronyms and Definitions on the LANL-CO Document Center at (https://lcodocs.lanl.gov/).

3.0 SCOPE

This analysis uses data contained in the Comprehensive Inventory Database (CID) data version D.17.02.33 (LANL-CO 2018b), which contains the inventory data with a cutoff date of December 31, 2017. The CID is a DOE Carlsbad Field Office (CBFO) database qualified in accordance with the LANL-CO Quality Assurance Program, which is in compliance with the CBFO *Quality Assurance Program Document* (DOE 2017). The CID contains the mass, reported in kilograms (kg), for chemical constituents and cement on a waste stream basis. This analysis also uses the data from INV-SAR-28 to account for the estimated component masses that were used in the PA that supported the CRA-2014.

4.0 DATA INPUTS AND ASSUMPTIONS

The data analyzed throughout this report comes from INV-SAR-28, which is also referred to in this analysis as "previously reported," and data reports generated from the CID data version D.17.02.33 reflecting the scaled and unscaled mass of chemical and cement components on a waste stream basis. The following CID reports were used in support of this analysis:

- RR-032: Oxyanion Mass Estimates (Scaled and Unscaled)
- RR-033: Complexing Mass Estimates (Scaled and Unscaled)
- RR-034: Cement Mass Estimates (Scaled and Unscaled)
- RR-037: Historic Crosswalk of Waste Streams from [CID] Data Version D.17.02.33 to D.11.00

To perform this analysis, it must be determined whether chemical and cement components in waste streams reported in INV-SAR-28 are also returned in this year's data, recognizing and accounting for waste streams that may have been combined into other waste streams, as shown in the crosswalk information provided. In addition, the following assumptions (cases) were made in order to report the best estimate for the mass of a waste stream's reported chemical or cement component:

1. When chemical or cement components are reported for the waste stream for the first time (e.g. new waste stream, existing waste stream with reported components moving from Potential to WIPP-bound, or existing waste stream with component mass reported for the first time), then this year's mass is the most accurate.
2. When a waste stream is in the process of being shipped to the WIPP or has already been shipped to the WIPP, then the greater mass from INV-SAR-28, if applicable, or this year's data is the most accurate. If a waste stream is shipping and has a smaller mass this year, then the difference between last year's number and this year's number is assumed to be emplaced in the WIPP, even though the reduction may be due to other reasons such as a portion of a waste stream's volume being characterized as low-level waste.
3. When a waste stream has component mass currently and previously reported, and the waste stream has never been shipped to the WIPP, then this year's mass is the most accurate.
4. All data provided are correct unless the site provides formal direction that changes a previously reported number. Documentation issued to address these components supersede all other assumptions, and must be referenced for an accurate comparison.
5. When previously reported chemical or cement components are not currently being reported for the waste stream, and the waste stream has never been shipped to the WIPP, then the mass is zero.

5.0 METHOD

To identify the estimated masses of oxyanions, complexing agents, and cement; reports were generated from the CID, data version D.17.02.33. The CID reports specified in Section 4.0 of this analysis list both the scaled and unscaled mass (kg) of their respective components for each waste stream. The mass of the components are evaluated according to the decision process described in Table 5-1. CID report generation was qualified under LCO-QPD-02, *LANL-CO*

Software Quality Assurance Plan (LANL-CO 2017b) and LCO-QP19-1, *Software Quality Assurance* (LANL-CO 2017c).

5.1 Hardware and Software Used for Analysis Activities

This analysis was performed on two computer workstations, described below. Workstation 1 was used to generate the reports discussed in Section 4.0, and Workstation 2 was used for spreadsheet calculations.

Workstation 1:

Hardware:	Dell Optiplex 7010 Intel® Core™i5-3550 CPU @ 3.30 GHz 64-bit OS 4.00 GB RAM 465 GB HD PN1241371
Operating System:	Microsoft® Windows 7 Professional Version 2009 Service Pack 1
Software:	Comprehensive Inventory Database version v.2.03 S.2.03, data version D.17.02.33; Microsoft Office Access 2010; Microsoft Office Excel 2010

Workstation 2:

Hardware:	Hewlett Packard EliteDesk Intel® Core™i5-4590 CPU @ 3.30 GHz 64-bit OS 8.00 GB RAM 465 GB HD PN1515023
Operating System:	Microsoft® Windows 7 Enterprise Version 2009 Service Pack 1
Software:	Microsoft® Office Excel® 2013

5.2 Preparation of Chemical and Cement Components for PA

For PA purposes, the chemical and cement components must be scaled to a full repository and must account for the components that are emplaced. Section 5.2.1 describes how this analysis compares the current unscaled data to the previous analysis report's unscaled data (INV-SAR-28) to account for the estimated amount of mass emplaced at the WIPP during

that time period. Section 5.2.2 describes how the resulting 2017 estimates for the mass of oxyanions, complexing agents, and cement are then scaled.

5.2.1 Comparison to Totals from Previous Analysis

The data received from the CID reports contain the scaled and unscaled mass of the chemical and cement components at the TRU waste sites. The masses of oxyanions, complexing agents, and cement are not tracked in the WDS for emplaced waste; therefore, this analysis must account for the entire mass of chemical and cement components that have been previously reported or are being reported this year, while including the mass of the components that have been emplaced. To address the emplaced mass it is necessary to compare this year's data with the data reported in INV-SAR-28, which includes estimates of emplaced mass as of December 31, 2011. This comparison will identify waste streams that have been shipped to the WIPP prior to and including the year 2017. For those waste streams that are shipping, the greater mass between the two data sets will be reported. If a site is shipping a waste stream to the WIPP and the site has reported less mass this year for that waste stream than in past years, then the difference in that mass is assumed to be because the waste stream's components have been shipped and emplaced in the WIPP. To account for all the mass of the chemical and cement components, the following five cases, as shown in Table 5-1, were developed based on the assumptions listed in Section 4.0.

Table 5-1 Decision Cases for Estimating Chemical and Cement Components

Determine whether chemical and cement components in waste streams reported in INV-SAR-28 are also returned in this year's data, recognizing and accounting for waste streams that may have been renamed, combined, or divided into other waste streams.	
New Waste Stream (never reported before, including under a historical waste stream ID)	
Case 1	**Initial Reporting Waste Stream** - If chemical or cement components are reported for the waste stream for the first time (e.g. new waste stream, existing waste stream with reported components moving from Potential to WIPP-bound, or existing waste stream with component mass reported for the first time), then report this year's mass.
Previously Reported Waste Streams (including under a historical waste stream ID)	
Case 2	**Shipping Waste Stream** - if a waste stream is in the process of being shipped to the WIPP or has already been shipped to the WIPP, then report the greater mass from INV-SAR-28 or this year's data.
Case 3	**Non-Shipping Waste Stream** – if a waste stream has component mass currently and previously reported, and the waste stream has never been shipped to the WIPP, then report this year's mass.
Case 4	**Special Case** – if formal site direction was issued to address any or all of these components then use this data to supersede Cases 2 or 3. Reference the documentation in the comparison.

Case 5	**Non-Reporting Waste Stream** – If previously reported chemical or cement components are not currently being reported for the waste stream, and the waste stream has never been shipped to the WIPP, then do not report any mass.

The chemical and cement components, as reported in the CID, were compared to the chemical and cement components from INV-SAR-28 using the cases described above. Each of the previous analyses up to and including INV-SAR-28 carried forward legacy scaled values, as well as introduced new scaled values using the respective scaling factor from that inventory year. This practice likely resulted in undue inflation of values; therefore, the decision was made to do the comparison based on unscaled values, and then scale the results in accordance with Section 5.2.2. The tables presenting the currently reported unscaled data are taken directly from the current year's respective CID report listed in Section 4.0. The tables presenting the previously reported unscaled data are populated by identifying the analysis from which each scaled value was initially used as an estimate and replacing it with its unscaled form. The resulting estimates are then determined by using the cases described in Table 5-1. This data is then scaled and presented in a 2017 estimated mass table. The tables described in this section are presented in Appendix A, Table A-1, Table A-2, and Table A-3. In each of these tables, since the Rocky Flats Technology Site (RF) completed all the shipments of its TRU waste to the WIPP as of April 2005, the chemical and cement components from INV-SAR-28 are captured as a single subtotal entry, identified as waste stream "RF Total."

5.2.2 Scaling Chemical and Cement Components

PA conducted in support of the WIPP assumes that the WIPP repository would be filled to its legislated capacity at the time of closure. The legislated capacity for the 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).

So that the data reflect a "full" WIPP repository in terms of volume, a methodology was implemented through the CID whereby a portion of the inventory was scaled. The approved 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 in the WIPP) wastes are fixed, known portions of the inventory that would be left intact. This methodology is consistent with scaling previously performed for the initial WIPP Compliance Certification Application and the 2004, 2009, and 2014 Compliance Recertification Applications.

The CID calculated scaling factors (for CH-TRU and RH-TRU waste separately) by which the respective projected volume totals are multiplied in order that, when added to

the stored and emplaced portions, are equal to the disposal limits for the WIPP. The scaling factors (unitless) calculated by the CID for data version D.17.02.33 are as follows (rounded to three significant figures):

CH 2017 Inventory Scaling Factor = 1.58
RH 2017 Inventory Scaling Factor = 12.7

These scaling factors were then used to scale the projected portion of the oxyanions, complexing agents, and cement components detailed in this analysis. Using this methodology, for estimates that were taken from the currently reported data, the waste stream's scaled mass is calculated by multiplying its projected mass by the appropriate handling (CH or RH) scaling factor and then adding that to its stored mass as seen in Equation 1 below:

Equation 1: Scaled Mass = Stored Mass + (Projected Mass x Scaling Factor)

In order to most accurately reflect a full WIPP repository, the most current inventory data must be applied whenever possible. When the resulting estimates were selected from the previously reported data, the scaled mass was calculated by apportioning stored and projected values by using the waste stream's current percentage of projected waste volume (Pct Proj) and then multiplying the projected portion by the appropriate 2017 scaling factor as shown in Equation 2.

Equation 2: Scaled Mass = (Mass x (1 – Pct Proj)) + (Mass x Pct Proj x Scaling Factor)

6.0 RESULTS

Based upon the comparison results in Table A-1, Table 6-1 presents a summary of estimated scaled oxyanion masses, by CH and RH, for disposal at the WIPP.

Table 6-1 2017 Estimated Oxyanions Mass Scaled by Handling

Oxyanion	CH (kg)	RH (kg)	Grand Total (kg)
Nitrate	1.68E+06	3.26E+03	1.69E+06
Phosphate	2.74E+05	1.37E+03	2.76E+05
Sulfate	4.53E+05	1.37E+03	4.54E+05
Grand Total	**2.41E+06**	**6.00E+03**	**2.42E+06**

Based upon the comparison results in Table A-2, Table 6-2 presents a summary of estimated scaled complexing agent masses, by CH and RH, for disposal at the WIPP.

Table 6-2 2017 Estimated Complexing Agents Mass Scaled by Handling

Complexing Agent	CH (kg)	RH (kg)	Grand Total (kg)
Acetate	1.37E+04	1.99E+01	1.37E+04
Acetic Acid	1.59E+04	2.11E+01	1.59E+04
Citrate	2.61E+03	1.98E+01	2.63E+03
Citric Acid	5.05E+03	2.10E+01	5.08E+03
EDTA	3.82E+02	2.10E+01	4.03E+02
Oxalate	6.79E+02	2.09E+01	7.00E+02
Oxalic Acid	1.70E+04	2.10E+01	1.70E+04
Grand Total	**5.53E+04**	**1.45E+02**	**5.54E+04**

Based upon the comparison results in Table A-3, Table 6-3 presents a summary of estimated scaled cement masses, by cement state (Reacted, Unreacted, or Both) and handling, for disposal at the WIPP.

Table 6-3 2017 Estimated Cement Mass Scaled by State and Handling

Cement State	CH (kg)	RH (kg)	Grand Total (kg)
Reacted	2.32E+06	3.35E+03	2.33E+06
Unreacted	3.20E+03	0.00E+00	3.20E+03
Both (Reacted and Unreacted)	6.55E+06	1.47E+02	6.55E+06
Grand Total	**8.88E+06**	**3.50E+03**	**8.88E+06**

7.0 REFERENCES

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8.0 APPENDICES

Appendix A Comparison of 2017 Inventory Data to 2011 Estimates

Appendix A. Comparison of 2017 Inventory Data to 2011 Estimates

Table A-1 Oxyanions Comparison: 2017 Inventory Data and 2011 Estimates

2017 Reported Oxyanions Mass Unscaled

Waste Stream ID	Crosswalk	Nitrate (kg)	Phosphate (kg)	Sulfate (kg)	Shipped	[1]Case
AE-T001	New Waste Stream	4.30E+02	2.15E+02	2.15E+02	Y	1
AE-T003	AE-T003	1.08E+00	2.98E-01	4.59E-01	Y	2
AE-T009	New Waste Stream	2.18E+02	2.18E+02	2.18E+02	Y	1
	Shipped				Y	2
IN-AE-AGHC-02	IN-AE-AGHC-02, IN-AE-AGHC-02T	8.35E-04	8.35E-01	8.35E-02	N	3
	Waste Stream Deleted From Inventory				N	5
	Shipped				Y	2
	No longer reporting Oxyanions				Y	2
IN-BNINW216	IN-BNINW216	2.64E+04		3.59E+02	Y	2
IN-BNINW218	IN-BNINW218	6.06E+03		1.54E+01	Y	2
IN-ID-ANLE-BIN	New Waste Stream	2.16E-03	2.16E-03	2.16E-03	N	1
IN-ID-ANLW-W269-RH	New Waste Stream	6.99E-05	6.99E-05	6.99E-05	N	1
IN-ID-BTO-030	IN-ID-BTO-030	5.00E-03	5.00E-03		N	3
IN-ID-HFEF-S3000-RP	New Waste Stream	1.54E-03	1.54E-03	1.54E-03	N	1
IN-ID-HFEF-S5000-RP	New Waste Stream	3.09E-03	3.09E-03	3.09E-03	N	1
	Shipped				Y	2
IN-ID-INL-152M	IN-ID-INL-152M	8.39E-03	8.39E-03	8.39E-03	Y	2
IN-ID-MFC-SOLID	IN-ID-MFC-SOLID	6.35E-05	6.35E-05	6.35E-05	N	3
IN-ID-MISC-RH	New Waste Stream	9.50E-03	9.50E-03		N	1
IN-ID-RF-S3150-A	IN-ID-RF-S3150-A			7.71E-01	Y	2
IN-ID-RF-S5000-RH	New Waste Stream			5.50E-03	N	1
IN-ID-Sample Fuel	New Waste Stream	3.75E-04	3.75E-04	7.50E-03	N	1
IN-ID-SDA-Debris	IN-ID-SDA-Debris	4.98E+03	1.89E+00	4.98E+03	Y	2
IN-ID-SDA-Sludge	IN-ID-SDA-Sludge	3.87E+04	1.93E+04	5.45E+04	Y	2
IN-ID-SDA-Soil	IN-ID-SDA-Soil	8.04E+03	4.02E+03	1.13E+04	Y	2
	Shipped				Y	2
IN-RF-005	New Waste Stream	4.61E+01			N	1
IN-RF-745	New Waste Stream	7.06E+01			N	1
LA-CIN01.001	LA-CIN01.001, LA-MHD01.001, LA-MIN02-V.001	7.88E+02		1.60E+03	Y	2
	No longer reporting oxyanions				Y	2
LA-CIN03.001	LA-CIN03.001, LA-MHD03.001	8.21E+02		1.31E+02	N	3
LA-MHD01.001	LA-CIN01.001, LA-MHD01.001, LA-MIN02-V.001	4.84E+01			Y	2
LA-MHD03.001	LA-CIN01.001, LA-CIN03.001, LA-MHD01.001, LA-MHD03.001, LA-MIN02-V.001	3.06E+02		2.85E+02	Y	2
	No longer reporting oxyanions				Y	2
	No longer reporting oxyanions				Y	2
LA-MIN02-V.001	LA-CIN01.001, LA-MHD01.001, LA-MIN02-V.001	8.07E+03		3.49E+01	Y	2
	No longer reporting oxyanions				Y	2
LA-TA-21-13	LA-TA-21-13	2.01E+05		3.20E+04	N	3
LA-TA-21-15	LA-TA-21-15	1.21E+02		2.34E+01	N	3
LA-TA-21-16	LA-TA-21-16	1.07E+03		9.95E+02	N	3
LB-T001	LB-T001	1.20E-01			Y	2
	No longer reporting oxyanions				Y	2
LL-M001	LL-M001	2.91E+00	2.91E+00	2.91E+00	Y	2
LL-W018-S5100	LL-W018-S5100	1.79E+00	1.79E+00	1.79E+00	N	3
LL-W019	LL-W019	4.94E-01	4.94E-01	4.94E-01	Y	2
OR-CHEM-CH-HET	New Waste Stream	2.43E-01	2.43E-01	2.43E-01	Y	1
OR-CHEM-RH-HET	New Waste Stream	1.16E-01	1.16E-01	1.16E-01	N	1
OR-CRF-CH-HET	New Waste Stream	6.27E-02	6.27E-02	6.27E-02	N	1
OR-GENR-CH-HET	New Waste Stream	1.79E-01	1.79E-01	1.79E-01	Y	1
OR-GENR-RH-HET	New Waste Stream	1.66E-02	1.66E-02	1.66E-02	N	1
OR-IFEL-CH-HET	New Waste Stream	4.29E-01	4.29E-01	4.29E-01	N	1

2011 Estimated Oxyanions Mass Unscaled

Waste Stream ID	Nitrate (kg)	Phosphate (kg)	Sulfate (kg)
AE-T003	5.22E-01	1.45E-01	2.23E-01
IN-AE-AGHC-01	5.45E-03	5.45E-03	5.45E-03
IN-AE-AGHC-02	1.20E-03	1.20E-03	1.20E-03
IN-AE-AGHC-02T	1.20E-05	1.20E-05	1.20E-05
IN-AW-161	1.27E-03	1.27E-03	1.27E-03
IN-BN004		5.14E+03	5.14E+03
IN-BNINW216	6.60E+05		9.24E+03
IN-BNINW218	1.89E+05		1.31E+03
IN-ID-INL-152	5.06E-04	5.06E-04	5.06E-04
IN-ID-INL-152M	1.54E-02	1.54E-02	1.54E-02
IN-ID-MFC-SOLID	6.35E-05	6.35E-05	6.35E-05
IN-ID-RF-S3150-A			5.40E+02
IN-ID-SDA-Debris	8.10E+04	1.85E+00	8.10E+04
IN-ID-SDA-Sludge	1.15E+05	5.76E+04	1.62E+05
IN-ID-SDA-Soil	1.36E+04	7.40E+03	1.97E+04
IN-INTEC-SFS-01	4.43E-02		
LA-CIN01.001	5.79E+02		1.96E+03
LA-CIN02.001	4.88E+02		7.76E+01
LA-CIN03.001	9.55E+02		1.52E+02
LA-MHD01.001	1.01E+05		1.96E+04
LA-MHD03.001	3.47E+02		3.23E+02
LA-MHD04.001	3.46E+03		6.67E+02
LA-MHD08.001	1.47E+02		2.83E+01
LA-MIN02-V.001	1.00E+02		1.94E+01
LA-MIN03-NC.001	1.43E+04		1.34E+04
LA-TA-21-13	2.01E+05		3.20E+04
LA-TA-21-15	1.22E+02		2.36E+01
LA-TA-21-16	6.98E+03		6.50E+03
LB-T001	9.60E-02	1.97E-02	3.66E-04
LB-T002	5.25E-03	6.20E-04	
LL-M001	3.25E+00	3.25E+00	3.25E+00
LL-W018-S5100	1.99E+00	1.99E+00	1.99E+00
LL-W019	5.70E-01	5.70E-01	5.70E-01

2017 Estimated Oxyanions Mass Unscaled

Waste Stream ID	Nitrate (kg)	Phosphate (kg)	Sulfate (kg)	Pct Proj (%)
AE-T001	4.30E+02	2.15E+02	2.15E+02	63.7%
AE-T003	1.08E+00	2.98E-01	4.59E-01	21.3%
AE-T009	2.18E+02	2.18E+02	2.18E+02	40.0%
IN-AE-AGHC-01	5.45E-03	5.45E-03	5.45E-03	0.0%
IN-AE-AGHC-02	8.35E-04	8.35E-01	8.35E-02	0.0%
IN-AW-161	1.27E-03	1.27E-03	1.27E-03	0.0%
IN-BN004		5.14E+03	5.14E+03	0.0%
IN-BNINW216	6.60E+05		9.24E+03	0.0%
IN-BNINW218	1.89E+05		1.31E+03	0.0%
IN-ID-ANLE-BIN	2.16E-03	2.16E-03	2.16E-03	0.0%
IN-ID-ANLW-W269-RH	6.99E-05	6.99E-05	6.99E-05	0.0%
IN-ID-BTO-030	5.00E-03	5.00E-03		0.0%
IN-ID-HFEF-S3000-RP	1.54E-03	1.54E-03	1.54E-03	0.0%
IN-ID-HFEF-S5000-RP	3.09E-03	3.09E-03	3.09E-03	0.0%
IN-ID-INL-152	5.06E-04	5.06E-04	5.06E-04	0.0%
IN-ID-INL-152M	1.54E-02	1.54E-02	1.54E-02	0.0%
IN-ID-MFC-SOLID	6.35E-05	6.35E-05	6.35E-05	0.0%
IN-ID-MISC-RH	9.50E-03	9.50E-03		0.0%
IN-ID-RF-S3150-A			5.40E+02	0.0%
IN-ID-RF-S5000-RH			5.50E-03	0.0%
IN-ID-Sample Fuel	3.75E-04	3.75E-04	7.50E-03	0.0%
IN-ID-SDA-Debris	8.10E+04	1.89E+00	8.10E+04	0.0%
IN-ID-SDA-Sludge	1.15E+05	5.76E+04	1.62E+05	0.0%
IN-ID-SDA-Soil	1.36E+04	7.40E+03	1.97E+04	0.0%
IN-INTEC-SFS-01	4.43E-02			0.0%
IN-RF-005	4.61E+01			0.0%
IN-RF-745	7.06E+01			0.0%
LA-CIN01.001	7.88E+02		1.96E+03	50.8%
LA-CIN02.001	4.88E+02		7.76E+01	0.0%
LA-CIN03.001	8.21E+02		1.31E+02	0.0%
LA-MHD01.001	1.01E+05		1.96E+04	90.4%
LA-MHD03.001	3.47E+02		3.23E+02	89.4%
LA-MHD04.001	3.46E+03		6.67E+02	0.0%
LA-MHD08.001	1.47E+02		2.83E+01	0.0%
LA-MIN02-V.001	8.07E+03		3.49E+01	0.0%
LA-MIN03-NC.001	1.43E+04		1.34E+04	0.0%
LA-TA-21-13	2.01E+05		3.20E+04	0.0%
LA-TA-21-15	1.21E+02		2.34E+01	0.0%
LA-TA-21-16	1.07E+03		9.95E+02	0.0%
LB-T001	1.20E-01	1.97E-02	3.66E-04	50.0%
LB-T002	5.25E-03	6.20E-04		50.0%
LL-M001	3.25E+00	3.25E+00	3.25E+00	73.1%
LL-W018-S5100	1.79E+00	1.79E+00	1.79E+00	55.1%
LL-W019	5.70E-01	5.70E-01	5.70E-01	57.3%
OR-CHEM-CH-HET	2.43E-01	2.43E-01	2.43E-01	0.0%
OR-CHEM-RH-HET	1.16E-01	1.16E-01	1.16E-01	0.0%
OR-CRF-CH-HET	6.27E-02	6.27E-02	6.27E-02	0.0%
OR-GENR-CH-HET	1.79E-01	1.79E-01	1.79E-01	0.0%
OR-GENR-RH-HET	1.66E-02	1.66E-02	1.66E-02	0.0%
OR-IFEL-CH-HET	4.29E-01	4.29E-01	4.29E-01	0.0%

2017 Estimated Oxyanions Mass Scaled

Waste Stream ID	Nitrate (kg)	Phosphate (kg)	Sulfate (kg)	Handling
AE-T001	6.45E+02	3.23E+02	3.23E+02	CH
AE-T003	1.35E+00	3.74E-01	5.76E-01	CH
AE-T009	1.35E+03	1.35E+03	1.35E+03	RH
IN-AE-AGHC-01	5.45E-03	5.45E-03	5.45E-03	RH
IN-AE-AGHC-02	8.35E-04	8.35E-01	8.35E-02	RH
IN-AW-161	1.27E-03	1.27E-03	1.27E-03	RH
IN-BN004		5.14E+03	5.14E+03	CH
IN-BNINW216	6.60E+05		9.24E+03	CH
IN-BNINW218	1.89E+05		1.31E+03	CH
IN-ID-ANLE-BIN	2.16E-03	2.16E-03	2.16E-03	RH
IN-ID-ANLW-W269-RH	6.99E-05	6.99E-05	6.99E-05	RH
IN-ID-BTO-030	5.00E-03	5.00E-03		RH
IN-ID-HFEF-S3000-RP	1.54E-03	1.54E-03	1.54E-03	RH
IN-ID-HFEF-S5000-RP	3.09E-03	3.09E-03	3.09E-03	RH
IN-ID-INL-152	5.06E-04	5.06E-04	5.06E-04	RH
IN-ID-INL-152M	1.54E-02	1.54E-02	1.54E-02	RH
IN-ID-MFC-SOLID	6.35E-05	6.35E-05	6.35E-05	RH
IN-ID-MISC-RH	9.50E-03	9.50E-03		RH
IN-ID-RF-S3150-A			5.40E+02	CH
IN-ID-RF-S5000-RH			5.50E-03	RH
IN-ID-Sample Fuel	3.75E-04	3.75E-04	7.50E-03	RH
IN-ID-SDA-Debris	8.10E+04	1.89E+00	8.10E+04	CH
IN-ID-SDA-Sludge	1.15E+05	5.76E+04	1.62E+05	CH
IN-ID-SDA-Soil	1.36E+04	7.40E+03	1.97E+04	CH
IN-INTEC-SFS-01	4.43E-02			RH
IN-RF-005	4.61E+01			CH
IN-RF-745	7.06E+01			CH
LA-CIN01.001	7.88E+02		2.54E+03	CH
LA-CIN02.001	4.88E+02		7.76E+01	CH
LA-CIN03.001	8.21E+02		1.31E+02	CH
LA-MHD01.001	1.54E+05		2.98E+04	CH
LA-MHD03.001	5.27E+02		4.90E+02	CH
LA-MHD04.001	3.46E+03		6.67E+02	CH
LA-MHD08.001	1.47E+02		2.83E+01	CH
LA-MIN02-V.001	8.07E+03		3.49E+01	CH
LA-MIN03-NC.001	1.43E+04		1.34E+04	CH
LA-TA-21-13	2.01E+05		3.20E+04	CH
LA-TA-21-15	1.21E+02		2.34E+01	CH
LA-TA-21-16	1.07E+03		9.95E+02	CH
LB-T001	1.55E-01	2.55E-02	4.72E-04	CH
LB-T002	6.77E-03	8.00E-04		CH
LL-M001	4.63E+00	4.63E+00	4.63E+00	CH
LL-W018-S5100	2.37E+00	2.37E+00	2.37E+00	CH
LL-W019	7.59E-01	7.59E-01	7.59E-01	CH
OR-CHEM-CH-HET	2.43E-01	2.43E-01	2.43E-01	CH
OR-CHEM-RH-HET	1.16E-01	1.16E-01	1.16E-01	RH
OR-CRF-CH-HET	6.27E-02	6.27E-02	6.27E-02	CH
OR-GENR-CH-HET	1.79E-01	1.79E-01	1.79E-01	CH
OR-GENR-RH-HET	1.66E-02	1.66E-02	1.66E-02	RH
OR-IFEL-CH-HET	4.29E-01	4.29E-01	4.29E-01	CH

2017 Reported Oxyanions Mass Unscaled

Waste Stream ID	Crosswalk	Nitrate (kg)	Phosphate (kg)	Sulfate (kg)	Shipped	[1]Case
OR-ISTP-CH-HET	New Waste Stream	1.15E+00	1.15E+00	1.15E+00	Y	1
OR-ISTP-RH-HET	New Waste Stream	5.90E-02	5.90E-02	5.90E-02	N	1
OR-MRF-CH-HET	New Waste Stream	1.12E-01	1.12E-01	1.12E-01	N	1
OR-NBL-CH-HET	New Waste Stream	1.15E-01	1.15E-01	1.15E-01	Y	1
OR-NFS-CH-HET	New Waste Stream	2.28E+00	2.28E+00	2.28E+00	Y	1
OR-PGDP-CH-HET	New Waste Stream	1.55E-01	1.55E-01	1.55E-01	N	1
OR-RADP-CH-HET	New Waste Stream	2.83E-01	2.83E-01	2.83E-01	Y	1
OR-RADP-RH-HET	New Waste Stream	8.25E-03	8.25E-03	8.25E-03	N	1
OR-REDC-CH-HET	New Waste Stream	5.32E+00	5.32E+00	5.32E+00	Y	1
OR-REDC-RH-HET	New Waste Stream	3.55E+00	3.55E+00	3.55E+00	Y	1
OR-RF-CH-HET	New Waste Stream	7.07E-01	7.07E-01	7.07E-01	Y	1
OR-RF-RH-HET	New Waste Stream	4.53E-01	4.53E-01	4.53E-01	N	1
OR-SWSA-CH-HET	New Waste Stream	6.66E-03	6.66E-03	6.66E-03	N	1
OR-SWSA-CH-SOIL	New Waste Stream	9.98E-02	9.98E-02	9.98E-02	N	1
OR-TBD-CH-HET	New Waste Stream	2.02E-01	2.02E-01	2.02E-01	N	1
OR-TBD-RH-HET	New Waste Stream	4.20E-01	4.20E-01	4.20E-01	N	1
OR-WSTR-CH-HET	New Waste Stream	6.46E-02	6.46E-02	6.46E-02	N	1
OR-Y12-CH-HET	New Waste Stream	3.14E-03	3.14E-03	3.14E-03	N	1
RL200-01	RL200-01	2.54E+02	2.44E+02		N	3
RL200-02	RL200-02	8.61E+01	1.13E+02	1.13E+01	N	3
RL201-03	RL201-03			2.12E+00	N	3
RL202S-01	RL202S-01	4.68E-01			N	3
RL209E-01	RL209E-01	5.53E+02	1.67E+02	1.32E+03	Y	2
RL209E-08	RL209E-08	8.61E-02		1.23E-02	N	3
RL216Z-02	RL216Z-02	1.57E+03	1.75E+03	7.03E+01	N	3
RL221U-03	RL221U-03		1.97E-03		N	3
RL221U-08	New Waste Stream, RL221U-09	1.89E+03		5.32E+00	N	1
	Waste Stream Deleted From Inventory				N	5
RL222S-01	RL222S-01	1.29E+02	1.92E+02	1.80E+01	N	3
RL231Z-01	RL231Z-01	3.76E+01	2.73E+03	4.85E+03	Y	2
RL231Z-03	RL231Z-03	1.43E-01	6.73E+01	1.51E+00	N	3
RL233S-01	RL233S-01	2.57E+02	2.00E+00	5.58E-01	Y	2
RL300-01	RL300-01	9.21E+02	2.18E+02	1.86E+00	Y	2
RL300-03	RL300-03	1.36E-02	3.67E-03	7.85E-03	N	3
RL308-01	RL308-01	4.76E+00	1.05E+00	1.84E+03	Y	2
RL325-01	RL325-01	2.54E+03	3.33E+02	1.69E+03	Y	2
RL325-03	RL325-03	8.00E+01			N	3
RL325-09	New Waste Stream	1.09E+00		2.10E-03	N	1
RLBAT-01	RLBAT-01		4.97E+00	4.37E+00	N	3
RLBW-01	RLBW-01	6.91E-01	3.92E-01	1.87E+02	Y	2
RLBW-03	RLBW-03	2.72E-05		1.15E-02	N	3
RLBW-08	RLBW-08	1.50E-05		6.16E-03	N	3
RLESG-01	RLESG-01	1.76E+00	1.11E+02	4.12E+03	Y	2
RLESG-08	RLESG-08	6.23E-03			N	3
RLEXX-01	RLEXX-01	6.29E-02	2.08E-02		Y	2
RLGEV-01	RLGEV-01	2.41E+00	2.41E+00	2.72E+02	Y	2
RLGEV-03	RLGEV-03	5.32E-05	5.32E-05	6.00E-03	N	3
RLHAN-01	RLHAN-01	6.72E+00	2.02E+00	4.13E+00	N	3
RLPFP-01	RLPFP-01	8.50E+04	8.38E+04	3.64E+03	Y	2
RLPFP-03	RLPFP-03	1.75E+03	1.12E+02		N	3
RLPFP-04	RLPFP-04	1.75E-02	1.49E-01		N	3
RLPFP-05	Shipped, RLPFP-01	4.24E+04	4.18E+04	1.82E+03	Y	2
RLPFP-08	RLPFP-08	4.43E-01	3.35E-01	1.77E-02	N	3
RLPURX-01	RLPURX-01	1.57E+01			Y	2

2011 Estimated Oxyanions Mass Unscaled

Waste Stream ID	Nitrate (kg)	Phosphate (kg)	Sulfate (kg)
RL200-01	2.54E+02	2.44E+02	
RL200-02	8.61E+01	1.13E+02	1.13E+01
RL201-03			2.12E+00
RL202S-01	4.68E-01		
RL209E-01	5.53E+02	1.67E+02	1.32E+03
RL209E-08	8.61E-02		1.23E-02
RL216Z-02	1.57E+03	1.75E+03	7.03E+01
RL221U-03		1.97E-03	
RL221U-09	1.89E+03		5.32E+00
RL222S-01	1.29E+02	1.92E+02	1.80E+01
RL231Z-01	4.18E+01	3.03E+03	5.39E+03
RL231Z-03	1.43E-01	6.73E+01	1.51E+00
RL233S-01	2.57E+02	2.00E+00	5.58E-01
RL300-01	9.54E+02	2.26E+02	1.93E+00
RL300-03	1.36E-02	3.67E-03	7.85E-03
RL308-01	4.76E+00	1.05E+00	1.84E+03
RL325-01	1.61E+04	4.59E+03	1.22E+04
RL325-03	8.00E+01		
RLBAT-01		4.97E+00	4.37E+00
RLBW-01	4.32E+00	2.45E+00	1.17E+03
RLBW-03	2.72E-05		1.15E-02
RLBW-08	1.50E-05		6.16E-03
RLESG-01	1.80E+00	1.14E+02	4.21E+03
RLESG-08	6.23E-03		
RLEXX-01	6.29E-02	2.08E-02	
RLGEV-01	3.54E+00	3.54E+00	4.00E+02
RLGEV-03	5.32E-05	5.32E-05	6.00E-03
RLHAN-01	6.72E+00	2.02E+00	4.13E+00
RLPFP-01	1.28E+05	1.26E+05	5.47E+03
RLPFP-03	1.75E+03	1.12E+02	
RLPFP-04	1.75E-02	1.49E-01	
RLPFP-05	3.12E+00	2.09E+00	4.48E-01
RLPFP-08	4.43E-01	3.35E-01	1.77E-02
RLPURX-01	3.89E+01		

2017 Estimated Oxyanions Mass Unscaled

Waste Stream ID	Nitrate (kg)	Phosphate (kg)	Sulfate (kg)	Pct Proj (%)
OR-ISTP-CH-HET	1.15E+00	1.15E+00	1.15E+00	0.0%
OR-ISTP-RH-HET	5.90E-02	5.90E-02	5.90E-02	0.0%
OR-MRF-CH-HET	1.12E-01	1.12E-01	1.12E-01	0.0%
OR-NBL-CH-HET	1.15E-01	1.15E-01	1.15E-01	0.0%
OR-NFS-CH-HET	2.28E+00	2.28E+00	2.28E+00	0.0%
OR-PGDP-CH-HET	1.55E-01	1.55E-01	1.55E-01	0.0%
OR-RADP-CH-HET	2.83E-01	2.83E-01	2.83E-01	0.0%
OR-RADP-RH-HET	8.25E-03	8.25E-03	8.25E-03	0.0%
OR-REDC-CH-HET	5.32E+00	5.32E+00	5.32E+00	31.4%
OR-REDC-RH-HET	3.55E+00	3.55E+00	3.55E+00	61.6%
OR-RF-CH-HET	7.07E-01	7.07E-01	7.07E-01	0.0%
OR-RF-RH-HET	4.53E-01	4.53E-01	4.53E-01	27.1%
OR-SWSA-CH-HET	6.66E-03	6.66E-03	6.66E-03	0.0%
OR-SWSA-CH-SOIL	9.98E-02	9.98E-02	9.98E-02	0.0%
OR-TBD-CH-HET	2.02E-01	2.02E-01	2.02E-01	0.0%
OR-TBD-RH-HET	4.20E-01	4.20E-01	4.20E-01	42.5%
OR-WSTR-CH-HET	6.46E-02	6.46E-02	6.46E-02	0.0%
OR-Y12-CH-HET	3.14E-03	3.14E-03	3.14E-03	0.0%
RL200-01	2.54E+02	2.44E+02		0.0%
RL200-02	8.61E+01	1.13E+02	1.13E+01	99.7%
RL201-03			2.12E+00	0.0%
RL202S-01	4.68E-01			0.0%
RL209E-01	5.53E+02	1.67E+02	1.32E+03	0.0%
RL209E-08	8.61E-02		1.23E-02	0.0%
RL216Z-02	1.57E+03	1.75E+03	7.03E+01	0.0%
RL221U-03		1.97E-03		0.0%
RL221U-08	1.89E+03		5.32E+00	0.0%
RL222S-01	1.29E+02	1.92E+02	1.80E+01	0.0%
RL231Z-01	4.18E+01	3.03E+03	5.39E+03	0.0%
RL231Z-03	1.43E-01	6.73E+01	1.51E+00	0.0%
RL233S-01	2.57E+02	2.00E+00	5.58E-01	0.0%
RL300-01	9.54E+02	2.26E+02	1.93E+00	0.0%
RL300-03	1.36E-02	3.67E-03	7.85E-03	0.0%
RL308-01	4.76E+00	1.05E+00	1.84E+03	0.0%
RL325-01	1.61E+04	4.59E+03	1.22E+04	4.2%
RL325-03	8.00E+01			0.0%
RL325-09	1.09E+00		2.10E-03	0.0%
RLBAT-01		4.97E+00	4.37E+00	0.0%
RLBW-01	4.32E+00	2.45E+00	1.17E+03	0.0%
RLBW-03	2.72E-05		1.15E-02	0.0%
RLBW-08	1.50E-05		6.16E-03	0.0%
RLESG-01	1.80E+00	1.14E+02	4.21E+03	0.0%
RLESG-08	6.23E-03			0.0%
RLEXX-01	6.29E-02	2.08E-02		0.0%
RLGEV-01	3.54E+00	3.54E+00	4.00E+02	0.0%
RLGEV-03	5.32E-05	5.32E-05	6.00E-03	0.0%
RLHAN-01	6.72E+00	2.02E+00	4.13E+00	0.0%
RLPFP-01	1.28E+05	1.26E+05	5.47E+03	34.4%
RLPFP-03	1.75E+03	1.12E+02		0.0%
RLPFP-04	1.75E-02	1.49E-01		0.0%
RLPFP-05	4.24E+04	4.18E+04	1.82E+03	0.1%
RLPFP-08	4.43E-01	3.35E-01	1.77E-02	0.0%
RLPURX-01	3.89E+01			42.0%

2017 Estimated Oxyanions Mass Scaled

Waste Stream ID	Nitrate (kg)	Phosphate (kg)	Sulfate (kg)	Handling
OR-ISTP-CH-HET	1.15E+00	1.15E+00	1.15E+00	CH
OR-ISTP-RH-HET	5.90E-02	5.90E-02	5.90E-02	RH
OR-MRF-CH-HET	1.12E-01	1.12E-01	1.12E-01	CH
OR-NBL-CH-HET	1.15E-01	1.15E-01	1.15E-01	CH
OR-NFS-CH-HET	2.28E+00	2.28E+00	2.28E+00	CH
OR-PGDP-CH-HET	1.55E-01	1.55E-01	1.55E-01	CH
OR-RADP-CH-HET	2.83E-01	2.83E-01	2.83E-01	CH
OR-RADP-RH-HET	8.25E-03	8.25E-03	8.25E-03	RH
OR-REDC-CH-HET	6.11E+00	6.11E+00	6.11E+00	CH
OR-REDC-RH-HET	1.62E+01	1.62E+01	1.62E+01	RH
OR-RF-CH-HET	7.07E-01	7.07E-01	7.07E-01	CH
OR-RF-RH-HET	1.86E+00	1.86E+00	1.86E+00	RH
OR-SWSA-CH-HET	6.66E-03	6.66E-03	6.66E-03	CH
OR-SWSA-CH-SOIL	9.98E-02	9.98E-02	9.98E-02	CH
OR-TBD-CH-HET	2.02E-01	2.02E-01	2.02E-01	CH
OR-TBD-RH-HET	1.48E+00	1.48E+00	1.48E+00	RH
OR-WSTR-CH-HET	6.46E-02	6.46E-02	6.46E-02	CH
OR-Y12-CH-HET	3.14E-03	3.14E-03	3.14E-03	CH
RL200-01	2.54E+02	2.44E+02		CH
RL200-02	8.61E+01	1.13E+02	1.13E+01	CH
RL201-03			2.12E+00	CH
RL202S-01	4.68E-01			CH
RL209E-01	5.53E+02	1.67E+02	1.32E+03	CH
RL209E-08	8.61E-02		1.23E-02	RH
RL216Z-02	1.57E+03	1.75E+03	7.03E+01	CH
RL221U-03		1.97E-03		CH
RL221U-08	1.89E+03		5.32E+00	RH
RL222S-01	1.29E+02	1.92E+02	1.80E+01	CH
RL231Z-01	4.18E+01	3.03E+03	5.39E+03	CH
RL231Z-03	1.43E-01	6.73E+01	1.51E+00	CH
RL233S-01	2.57E+02	2.00E+00	5.58E-01	CH
RL300-01	9.54E+02	2.26E+02	1.93E+00	CH
RL300-03	1.36E-02	3.67E-03	7.85E-03	CH
RL308-01	4.76E+00	1.05E+00	1.84E+03	CH
RL325-01	1.65E+04	4.70E+03	1.25E+04	CH
RL325-03	8.00E+01			CH
RL325-09	1.09E+00		2.10E-03	RH
RLBAT-01		4.97E+00	4.37E+00	CH
RLBW-01	4.32E+00	2.45E+00	1.17E+03	CH
RLBW-03	2.72E-05		1.15E-02	CH
RLBW-08	1.50E-05		6.16E-03	RH
RLESG-01	1.80E+00	1.14E+02	4.21E+03	CH
RLESG-08	6.23E-03			RH
RLEXX-01	6.29E-02	2.08E-02		CH
RLGEV-01	3.54E+00	3.54E+00	4.00E+02	CH
RLGEV-03	5.32E-05	5.32E-05	6.00E-03	CH
RLHAN-01	6.72E+00	2.02E+00	4.13E+00	CH
RLPFP-01	1.53E+05	1.51E+05	6.56E+03	CH
RLPFP-03	1.75E+03	1.12E+02		CH
RLPFP-04	1.75E-02	1.49E-01		CH
RLPFP-05	4.25E+04	4.19E+04	1.82E+03	CH
RLPFP-08	4.43E-01	3.35E-01	1.77E-02	RH
RLPURX-01	4.83E+01			CH

2017 Reported Oxyanions Mass Unscaled

Waste Stream ID	Crosswalk	Nitrate (kg)	Phosphate (kg)	Sulfate (kg)	Shipped	[1]Case
RLSWO-01	RLSWO-01	3.57E+01	4.28E+02	6.66E+00	Y	2
RLWAR-01	RLWAR-01	2.93E+03		5.00E+02	Y	2
RLWAR-03	RLWAR-03	3.67E-01		6.12E-02	N	3
SA-W134	New Waste Stream	1.00E-09			Y	1
SA-W135	New Waste Stream	1.00E-09			Y	1
SA-W137	SA-W137	1.00E-06			N	3
	Shipped				Y	2

2011 Estimated Oxyanions Mass Unscaled

Waste Stream ID	Nitrate (kg)	Phosphate (kg)	Sulfate (kg)
RLSWO-01	3.20E+01	3.89E+02	6.24E+00
RLWAR-01	1.20E+04		2.06E+03
RLWAR-03	3.67E-01		6.12E-02
SA-W137	1.00E-06		
RF Total	9.31E+03	8.50E+01	5.52E+04

2017 Estimated Oxyanions Mass Unscaled

Waste Stream ID	Nitrate (kg)	Phosphate (kg)	Sulfate (kg)	Pct Proj (%)
RLSWO-01	3.57E+01	4.28E+02	6.66E+00	21.0%
RLWAR-01	1.20E+04		2.06E+03	0.0%
RLWAR-03	3.67E-01		6.12E-02	0.0%
SA-W134	1.00E-09			0.0%
SA-W135	1.00E-09			0.0%
SA-W137	1.00E-06			0.0%
RF Total	9.31E+03	8.50E+01	5.52E+04	0.0%

2017 Estimated Oxyanions Mass Scaled

Waste Stream ID	Nitrate (kg)	Phosphate (kg)	Sulfate (kg)	Handling
RLSWO-01	3.79E+01	4.51E+02	6.90E+00	CH
RLWAR-01	1.20E+04		2.06E+03	CH
RLWAR-03	3.67E-01		6.12E-02	CH
SA-W134	1.00E-09			CH
SA-W135	1.00E-09			RH
SA-W137	1.00E-06			CH
RF Total	9.31E+03	8.50E+01	5.52E+04	CH

2017 Reported Oxyanions Mass Unscaled Totals

Site ID (Handling)	TRU Waste Generator Site	Nitrate (kg)	Phosphate (kg)	Sulfate (kg)
AE Total (CH)	Argonne National Laboratory	4.31E+02	2.15E+02	2.15E+02
AE Total (RH)	Argonne National Laboratory	2.18E+02	2.18E+02	2.18E+02
IN Total (CH)	Idaho National Laboratory	8.43E+04	2.33E+04	7.12E+04
IN Total (RH)	Idaho National Laboratory	3.10E-02	8.65E-01	1.12E-01
LA Total (CH)	Los Alamos National Laboratory	2.13E+05	0.00E+00	3.51E+04
LB Total (CH)	Lawrence Berkeley National Laboratory	1.20E-01	0.00E+00	0.00E+00
LL Total (CH)	Lawrence Livermore National Laboratory	5.20E+00	5.20E+00	5.20E+00
OR Total (CH)	Oak Ridge National Laboratory	1.14E+01	1.14E+01	1.14E+01
OR Total (RH)	Oak Ridge National Laboratory	4.62E+00	4.62E+00	4.62E+00
RF Total (CH)	Rocky Flats Environmental Technology Site	0.00E+00	0.00E+00	0.00E+00
RL Total (CH)	Hanford (Richland) Site	1.39E+05	1.32E+05	2.04E+04
RL Total (RH)	Hanford (Richland) Site	1.89E+03	3.35E-01	5.36E+00
SA Total (CH)	Sandia National Laboratories	1.00E-06	0.00E+00	0.00E+00
SA Total (RH)	Sandia National Laboratories	1.00E-09	0.00E+00	0.00E+00
CH TOTAL		**4.36E+05**	**1.56E+05**	**1.27E+05**
RH TOTAL		**2.11E+03**	**2.24E+02**	**2.28E+02**
GRAND TOTAL		**4.38E+05**	**1.56E+05**	**1.27E+05**

2011 Estimated Oxyanions Unscaled Totals

Site ID (Handling)	Nitrate (kg)	Phosphate (kg)	Sulfate (kg)
AE Total (CH)	5.22E-01	1.45E-01	2.23E-01
AE Total (RH)	0.00E+00	0.00E+00	0.00E+00
IN Total (CH)	1.06E+06	7.02E+04	2.79E+05
IN Total (RH)	7.32E-02	2.89E-02	2.39E-02
LA Total (CH)	3.30E+05	0.00E+00	7.47E+04
LB Total (CH)	1.01E-01	2.04E-02	3.66E-04
LL Total (CH)	5.81E+00	5.81E+00	5.81E+00
OR Total (CH)	0.00E+00	0.00E+00	0.00E+00
OR Total (RH)	0.00E+00	0.00E+00	0.00E+00
RF Total (CH)	9.31E+03	8.50E+01	5.52E+04
RL Total (CH)	1.62E+05	1.37E+05	3.42E+04
RL Total (RH)	1.89E+03	3.35E-01	5.36E+00
SA Total (CH)	1.00E-06	0.00E+00	0.00E+00
SA Total (RH)	0.00E+00	0.00E+00	0.00E+00
CH TOTAL	**1.56E+06**	**2.07E+05**	**4.44E+05**
RH TOTAL	**1.89E+03**	**3.64E-01**	**5.38E+00**
GRAND TOTAL	**1.56E+06**	**2.07E+05**	**4.44E+05**

2017 Estimated Oxyanions Mass Unscaled Totals

Site ID (Handling)	Nitrate (kg)	Phosphate (kg)	Sulfate (kg)	Total (kg)
AE Total (CH)	4.31E+02	2.15E+02	2.15E+02	8.62E+02
AE Total (RH)	2.18E+02	2.18E+02	2.18E+02	6.53E+02
IN Total (CH)	1.06E+06	7.02E+04	2.79E+05	1.41E+06
IN Total (RH)	8.96E-02	8.79E-01	1.26E-01	1.09E+00
LA Total (CH)	3.32E+05	0.00E+00	6.92E+04	4.02E+05
LB Total (CH)	1.25E-01	2.04E-02	3.66E-04	1.46E-01
LL Total (CH)	5.61E+00	5.61E+00	5.61E+00	1.68E+01
OR Total (CH)	1.14E+01	1.14E+01	1.14E+01	3.42E+01
OR Total (RH)	4.62E+00	4.62E+00	4.62E+00	1.39E+01
RF Total (CH)	9.31E+03	8.50E+01	5.52E+04	6.46E+04
RL Total (CH)	2.04E+05	1.79E+05	3.60E+04	4.19E+05
RL Total (RH)	1.89E+03	3.35E-01	5.36E+00	1.90E+03
SA Total (CH)	1.00E-06	0.00E+00	0.00E+00	1.00E-06
SA Total (RH)	1.00E-09	0.00E+00	0.00E+00	1.00E-09
CH TOTAL	**1.60E+06**	**2.49E+05**	**4.40E+05**	**2.29E+06**
RH TOTAL	**2.11E+03**	**2.24E+02**	**2.28E+02**	**2.57E+03**
GRAND TOTAL	**1.61E+06**	**2.49E+05**	**4.40E+05**	**2.30E+06**

2017 Estimated Oxyanions Mass Scaled Totals

Site ID (Handling)	Nitrate (kg)	Phosphate (kg)	Sulfate (kg)	Total (kg)
AE Total (CH)	6.46E+02	3.23E+02	3.23E+02	1.29E+03
AE Total (RH)	1.35E+03	1.35E+03	1.35E+03	4.04E+03
IN Total (CH)	1.06E+06	7.02E+04	2.79E+05	1.41E+06
IN Total (RH)	8.96E-02	8.79E-01	1.26E-01	1.09E+00
LA Total (CH)	3.86E+05	0.00E+00	8.02E+04	4.66E+05
LB Total (CH)	1.62E-01	2.63E-02	4.72E-04	1.88E-01
LL Total (CH)	7.75E+00	7.75E+00	7.75E+00	2.33E+01
OR Total (CH)	1.22E+01	1.22E+01	1.22E+01	3.66E+01
OR Total (RH)	1.98E+01	1.98E+01	1.98E+01	5.93E+01
RF Total (CH)	9.31E+03	8.50E+01	5.52E+04	6.46E+04
RL Total (CH)	2.30E+05	2.04E+05	3.74E+04	4.71E+05
RL Total (RH)	1.89E+03	3.35E-01	5.36E+00	1.90E+03
SA Total (CH)	1.00E-06	0.00E+00	0.00E+00	1.00E-06
SA Total (RH)	1.00E-09	0.00E+00	0.00E+00	1.00E-09
CH TOTAL	**1.68E+06**	**2.74E+05**	**4.53E+05**	**2.41E+06**
RH TOTAL	**3.26E+03**	**1.37E+03**	**1.37E+03**	**6.00E+03**
GRAND TOTAL	**1.69E+06**	**2.76E+05**	**4.54E+05**	**2.42E+06**

[1] *See* Table 5-1. *Decision Cases for Estimating Chemical and Cement Components*

Table A-2 Complexing Agents Comparison: 2017 Inventory Data and 2011 Estimates

2017 Reported Complexing Agents Mass Unscaled

Waste Stream ID	Crosswalk	Acetate (kg)	Acetic Acid (kg)	Citrate (kg)	Citric Acid (kg)	EDTA (kg)	Oxalate (kg)	Oxalic Acid (kg)	Shipped	[1]Case
AE-T001	New Waste Stream		2.05E-01		2.05E-01	2.05E-01	2.05E-01	2.05E-01	Y	1
AE-T003	AE-T003		2.91E-02		2.91E-02	2.91E-02	2.91E-02	2.91E-02	Y	2
AE-T009	New Waste Stream		1.84E-01		1.84E-01	1.84E-01	1.84E-01	1.84E-01	Y	1
	Shipped								Y	2
	Shipped								Y	2
	Shipped								Y	2
IN-AE-AGHC-02	IN-AE-AGHC-02, IN-AE-AGHC-02T		8.35E-04		8.35E-04			8.35E-04	N	3
	Waste Stream Deleted From Inventory								N	5
	Shipped								Y	2
	No longer reporting complexing agents								Y	2
	Waste Stream Deleted From Inventory								N	5
IN-BNINW218	IN-BNINW218	7.89E+01	9.32E+00	2.76E+01	6.45E+00	1.61E+00		6.45E+00	Y	2
IN-ID-ANLE-BIN	New Waste Stream	2.16E-03	4.32E-02		4.32E-02	2.16E-03	2.16E-03	4.32E-02	N	1
IN-ID-ANLW-W269-RH	New Waste Stream	6.99E-04	6.99E-05	6.99E-04	6.99E-04	6.99E-05		6.99E-05	N	1
IN-ID-BTO-030	IN-ID-BTO-030		5.00E-03	5.00E-03	5.00E-03	5.00E-03		5.00E-03	N	3
IN-ID-HFEF-S3000-RP	New Waste Stream	1.54E-03	1.54E-03	1.54E-03		1.54E-03		1.54E-03	N	1
IN-ID-HFEF-S5000-RP	New Waste Stream	3.09E-03	3.09E-03	3.09E-03		3.09E-03		3.09E-03	N	1
	Shipped								Y	2
IN-ID-INL-152M	IN-ID-INL-152M	8.39E-03	8.39E-03	8.39E-03		8.39E-03		8.39E-03	Y	2
IN-ID-MFC-SOLID	IN-ID-MFC-SOLID	6.35E-04	6.35E-05	6.35E-04		6.35E-05		6.35E-05	N	3
IN-ID-MISC-RH	New Waste Stream	9.50E-04	9.50E-03	9.50E-04		9.50E-04		9.50E-04	N	1
IN-ID-RF-S5000-RH	New Waste Stream		5.50E-02		5.50E-02				N	1
	Shipped								Y	2
IN-ID-Sample Fuel	New Waste Stream	6.25E-02	7.50E-03	6.25E-03		3.13E-02		7.50E-03	N	1
IN-ID-SDA-Debris	IN-ID-SDA-Debris		2.40E+02		4.73E-01	2.37E-01		2.84E+00	Y	2
IN-ID-SDA-Sludge	IN-ID-SDA-Sludge		1.78E+03		3.51E+00	1.76E+00		3.69E+01	Y	2
IN-ID-SDA-Soil	IN-ID-SDA-Soil		3.70E+02		7.30E-01	3.65E-01		7.66E+00	Y	2
	Shipped								Y	2
LA-CIN01.001	LA-CIN01.001, LA-MHD01.001, LA-MIN02-V.001		8.23E-01		9.06E+01			1.40E+01	Y	2
	No longer reporting complexing agents								Y	2
	No longer reporting complexing agents								Y	2
LA-MIN02-V.001	LA-CIN01.001, LA-MHD01.001, LA-MIN02-V.001		1.16E-01		1.28E+01			1.59E+02	Y	2
	No longer reporting complexing agents								Y	2
LL-M001	LL-M001		2.91E+00		2.91E+00			2.91E+00	Y	2
LL-W018-S5100	LL-W018-S5100		1.79E+00		1.79E+00	1.79E+00		1.79E+00	N	3
LL-W019	LL-W019		4.94E-01		4.94E-01			4.94E-01	Y	2
OR-CHEM-CH-HET	New Waste Stream	2.43E-01	2.43E-01	2.43E-01	2.43E-01	2.43E-01	2.43E-01	2.43E-01	Y	1
OR-CHEM-RH-HET	New Waste Stream	1.16E-01	1.16E-01	1.16E-01	1.16E-01	1.16E-01	1.16E-01	1.16E-01	N	1
OR-CRF-CH-HET	New Waste Stream	6.27E-02	6.27E-02	6.27E-02	6.27E-02	6.27E-02	6.27E-02	6.27E-02	N	1
OR-GENR-CH-HET	New Waste Stream	1.79E-01	1.79E-01	1.79E-01	1.79E-01	1.79E-01	1.79E-01	1.79E-01	Y	1
OR-GENR-RH-HET	New Waste Stream	1.66E-02	1.66E-02	1.66E-02	1.66E-02	1.66E-02	1.66E-02	1.66E-02	N	1
OR-IFEL-CH-HET	New Waste Stream	4.29E-01	4.29E-01	4.29E-01	4.29E-01	4.29E-01	4.29E-01	4.29E-01	N	1
OR-ISTP-CH-HET	New Waste Stream	1.15E+00	1.15E+00	1.15E+00	1.15E+00	1.15E+00	1.15E+00	1.15E+00	Y	1
OR-ISTP-RH-HET	New Waste Stream	5.90E-02	5.90E-02	5.90E-02	5.90E-02	5.90E-02	5.90E-02	5.90E-02	N	1
OR-MRF-CH-HET	New Waste Stream	1.12E-01	1.12E-01	1.12E-01	1.12E-01	1.12E-01	1.12E-01	1.12E-01	N	1
OR-NBL-CH-HET	New Waste Stream	1.15E-01	1.15E-01	1.15E-01	1.15E-01	1.15E-01	1.15E-01	1.15E-01	Y	1
OR-NFS-CH-HET	New Waste Stream	2.28E+00	2.28E+00	2.28E+00	2.28E+00	2.28E+00	2.28E+00	2.28E+00	Y	1
OR-PGDP-CH-HET	New Waste Stream	1.55E-01	1.55E-01	1.55E-01	1.55E-01	1.55E-01	1.55E-01	1.55E-01	N	1
OR-RADP-CH-HET	New Waste Stream	2.83E-01	2.83E-01	2.83E-01	2.83E-01	2.83E-01	2.83E-01	2.83E-01	Y	1
OR-RADP-RH-HET	New Waste Stream	8.25E-03	8.25E-03	8.25E-03	8.25E-03	8.25E-03	8.25E-03	8.25E-03	N	1
OR-REDC-CH-HET	New Waste Stream	5.32E+00	5.32E+00	5.32E+00	5.32E+00	5.32E+00	5.32E+00	5.32E+00	Y	1
OR-REDC-RH-HET	New Waste Stream	3.55E+00	3.55E+00	3.55E+00	3.55E+00	3.55E+00	3.55E+00	3.55E+00	Y	1
OR-RF-CH-HET	New Waste Stream	7.07E-01	7.07E-01	7.07E-01	7.07E-01	7.07E-01	7.07E-01	7.07E-01	Y	1
OR-RF-RH-HET	New Waste Stream	4.53E-01	4.53E-01	4.53E-01	4.53E-01	4.53E-01	4.53E-01	4.53E-01	N	1
OR-SWSA-CH-HET	New Waste Stream	6.66E-03	6.66E-03	6.66E-03	6.66E-03	6.66E-03	6.66E-03	6.66E-03	N	1
OR-SWSA-CH-SOIL	New Waste Stream	9.98E-02	9.98E-02	9.98E-02	9.98E-02	9.98E-02	9.98E-02	9.98E-02	N	1
OR-TBD-CH-HET	New Waste Stream	2.02E-01	2.02E-01	2.02E-01	2.02E-01	2.02E-01	2.02E-01	2.02E-01	N	1
OR-TBD-RH-HET	New Waste Stream	4.20E-01	4.20E-01	4.20E-01	4.20E-01	4.20E-01	4.20E-01	4.20E-01	N	1
OR-WSTR-CH-HET	New Waste Stream	6.46E-02	6.46E-02	6.46E-02	6.46E-02	6.46E-02	6.46E-02	6.46E-02	N	1
OR-Y12-CH-HET	New Waste Stream	3.14E-03	3.14E-03	3.14E-03	3.14E-03	3.14E-03	3.14E-03	3.14E-03	N	1
RL200-01	RL200-01				2.63E+00			3.63E+00	N	3
RL200-02	RL200-02	4.14E+00	2.00E+00		1.46E-03	1.14E-03	1.14E-03	7.90E-03	N	3
RL216Z-02	RL216Z-02							1.71E+01	N	3

2011 Estimated Complexing Agents Mass Unscaled

Waste Stream ID	Acetate (kg)	Acetic Acid (kg)	Citrate (kg)	Citric Acid (kg)	EDTA (kg)	Oxalate (kg)	Oxalic Acid (kg)
AE-T003							2.68E+01
BN004-S					5.36E+01		
ID-RF-S5300-A-S					8.33E-01		
IN-AE-AGHC-01		5.45E-03		5.45E-03			5.45E-03
IN-AE-AGHC-02		1.20E-03		1.20E-03			1.20E-03
IN-AE-AGHC-02T		1.20E-05		1.20E-05			1.20E-05
IN-AW-161	1.27E-02	1.27E-03	1.27E-02		1.27E-03		1.27E-03
IN-BN004					2.24E+02		
IN-BN409					2.15E+00		
IN-BNINW218	2.46E+03	2.90E+02	8.59E+02	2.01E+02			2.01E+02
IN-ID-BTO-030		5.00E-03	5.00E-03	5.00E-03	5.00E-03		5.00E-03
IN-ID-INL-152	5.06E-04	5.06E-04	5.06E-04		5.06E-04		5.06E-04
IN-ID-INL-152M	1.54E-02	1.54E-02	1.54E-02		1.54E-02		1.54E-02
IN-ID-MFC-SOLID	6.35E-04	6.35E-05	6.35E-04		6.35E-05		6.35E-05
IN-ID-RF-S5300-A					2.69E+01		
IN-ID-SDA-Debris		3.86E+03		4.45E+00	2.31E-01		2.77E+00
IN-ID-SDA-Sludge		5.24E+03		8.54E+01	4.07E+00		3.35E+01
IN-ID-SDA-Soil		1.23E+03		2.59E+01	1.23E+00		6.56E+00
INW169.001-S					1.09E+00		
LA-CIN01.001		1.01E+00		1.12E+02			1.73E+01
LA-CIN02.001		1.74E+00		1.92E+02			1.08E+03
LA-MHD01.001		4.28E+00		4.92E+01			6.14E+02
LA-MIN02-V.001		6.44E-02		7.09E+00			8.82E+01
LA-MIN03-NC.001		2.44E-01		2.68E+01			3.35E+02
LL-M001		3.25E+00		3.25E+00	3.25E+00		3.25E+00
LL-W018-S5100		1.99E+00		1.99E+00	1.99E+00		1.99E+00
LL-W019		5.70E-01		5.70E-01	5.70E-01		5.70E-01
RL200-01				2.63E+00			3.63E+00
RL200-02	4.14E+00	2.00E+00		1.46E-03	1.14E-03	1.14E-03	7.90E-03
RL216Z-02							1.71E+01

2017 Estimated Complexing Agents Mass Unscaled

Waste Stream ID	Acetate (kg)	Acetic Acid (kg)	Citrate (kg)	Citric Acid (kg)	EDTA (kg)	Oxalate (kg)	Oxalic Acid (kg)	Pct Proj (%)
AE-T001		2.05E-01		2.05E-01	2.05E-01	2.05E-01	2.05E-01	63.7%
AE-T003		2.91E-02		2.91E-02	2.91E-02	2.91E-02	2.68E+01	21.3%
AE-T009		1.84E-01		1.84E-01	1.84E-01	1.84E-01	1.84E-01	40.0%
BN004-S					5.36E+01			0.0%
ID-RF-S5300-A-S					8.33E-01			0.0%
IN-AE-AGHC-01		5.45E-03					5.45E-03	0.0%
IN-AE-AGHC-02		8.35E-04		8.35E-04			8.35E-04	0.0%
IN-AW-161	1.27E-02	1.27E-03	1.27E-02		1.27E-03		1.27E-03	0.0%
IN-BN004					2.24E+02			0.0%
IN-BNINW218	2.46E+03	2.90E+02	8.59E+02	2.01E+02	1.61E+00		2.01E+02	0.0%
IN-ID-ANLE-BIN	2.16E-03	4.32E-02		4.32E-02	2.16E-03	2.16E-03	4.32E-02	0.0%
IN-ID-ANLW-W269-RH	6.99E-04	6.99E-05	6.99E-04	6.99E-04	6.99E-05		6.99E-05	0.0%
IN-ID-BTO-030		5.00E-03	5.00E-03	5.00E-03	5.00E-03		5.00E-03	0.0%
IN-ID-HFEF-S3000-RP	1.54E-03	1.54E-03	1.54E-03		1.54E-03		1.54E-03	0.0%
IN-ID-HFEF-S5000-RP	3.09E-03	3.09E-03	3.09E-03		3.09E-03		3.09E-03	0.0%
IN-ID-INL-152	5.06E-04	5.06E-04	5.06E-04		5.06E-04		5.06E-04	0.0%
IN-ID-INL-152M	1.54E-02	1.54E-02	1.54E-02		1.54E-02		1.54E-02	0.0%
IN-ID-MFC-SOLID	6.35E-04	6.35E-05	6.35E-04		6.35E-05		6.35E-05	0.0%
IN-ID-MISC-RH	9.50E-04	9.50E-03	9.50E-04		9.50E-04		9.50E-04	0.0%
IN-ID-RF-S5000-RH		5.50E-02		5.50E-02				0.0%
IN-ID-RF-S5300-A					2.69E+01			0.0%
IN-ID-Sample Fuel	6.25E-02	7.50E-03	6.25E-03		3.13E-02		7.50E-03	0.0%
IN-ID-SDA-Debris		3.86E+03		4.45E+00	2.37E-01		2.84E+00	0.0%
IN-ID-SDA-Sludge		5.24E+03		8.54E+01	4.07E+00		3.69E+01	0.0%
IN-ID-SDA-Soil		1.23E+03		2.59E+01	1.23E+00		7.66E+00	0.0%
INW169.001-S					1.09E+00			0.0%
LA-CIN01.001		1.01E+00		1.12E+02			1.73E+01	50.8%
LA-CIN02.001		1.74E+00		1.92E+02			1.08E+03	0.0%
LA-MHD01.001		4.28E+00		4.92E+01			6.14E+02	90.4%
LA-MIN02-V.001		1.16E-01		1.28E+01			1.59E+02	0.0%
LA-MIN03-NC.001		2.44E-01		2.68E+01			3.35E+02	0.0%
LL-M001		3.25E+00		3.25E+00	3.25E+00		3.25E+00	73.1%
LL-W018-S5100		1.79E+00		1.79E+00	1.79E+00		1.79E+00	55.1%
LL-W019		5.70E-01		5.70E-01	5.70E-01		5.70E-01	57.3%
OR-CHEM-CH-HET	2.43E-01	2.43E-01	2.43E-01	2.43E-01	2.43E-01	2.43E-01	2.43E-01	0.0%
OR-CHEM-RH-HET	1.16E-01	1.16E-01	1.16E-01	1.16E-01	1.16E-01	1.16E-01	1.16E-01	0.0%
OR-CRF-CH-HET	6.27E-02	6.27E-02	6.27E-02	6.27E-02	6.27E-02	6.27E-02	6.27E-02	0.0%
OR-GENR-CH-HET	1.79E-01	1.79E-01	1.79E-01	1.79E-01	1.79E-01	1.79E-01	1.79E-01	0.0%
OR-GENR-RH-HET	1.66E-02	1.66E-02	1.66E-02	1.66E-02	1.66E-02	1.66E-02	1.66E-02	0.0%
OR-IFEL-CH-HET	4.29E-01	4.29E-01	4.29E-01	4.29E-01	4.29E-01	4.29E-01	4.29E-01	0.0%
OR-ISTP-CH-HET	1.15E+00	1.15E+00	1.15E+00	1.15E+00	1.15E+00	1.15E+00	1.15E+00	0.0%
OR-ISTP-RH-HET	5.90E-02	5.90E-02	5.90E-02	5.90E-02	5.90E-02	5.90E-02	5.90E-02	0.0%
OR-MRF-CH-HET	1.12E-01	1.12E-01	1.12E-01	1.12E-01	1.12E-01	1.12E-01	1.12E-01	0.0%
OR-NBL-CH-HET	1.15E-01	1.15E-01	1.15E-01	1.15E-01	1.15E-01	1.15E-01	1.15E-01	0.0%
OR-NFS-CH-HET	2.28E+00	2.28E+00	2.28E+00	2.28E+00	2.28E+00	2.28E+00	2.28E+00	0.0%
OR-PGDP-CH-HET	1.55E-01	1.55E-01	1.55E-01	1.55E-01	1.55E-01	1.55E-01	1.55E-01	0.0%
OR-RADP-CH-HET	2.83E-01	2.83E-01	2.83E-01	2.83E-01	2.83E-01	2.83E-01	2.83E-01	0.0%
OR-RADP-RH-HET	8.25E-03	8.25E-03	8.25E-03	8.25E-03	8.25E-03	8.25E-03	8.25E-03	0.0%
OR-REDC-CH-HET	5.32E+00	5.32E+00	5.32E+00	5.32E+00	5.32E+00	5.32E+00	5.32E+00	31.4%
OR-REDC-RH-HET	3.55E+00	3.55E+00	3.55E+00	3.55E+00	3.55E+00	3.55E+00	3.55E+00	61.6%
OR-RF-CH-HET	7.07E-01	7.07E-01	7.07E-01	7.07E-01	7.07E-01	7.07E-01	7.07E-01	0.0%
OR-RF-RH-HET	4.53E-01	4.53E-01	4.53E-01	4.53E-01	4.53E-01	4.53E-01	4.53E-01	27.1%
OR-SWSA-CH-HET	6.66E-03	6.66E-03	6.66E-03	6.66E-03	6.66E-03	6.66E-03	6.66E-03	0.0%
OR-SWSA-CH-SOIL	9.98E-02	9.98E-02	9.98E-02	9.98E-02	9.98E-02	9.98E-02	9.98E-02	0.0%
OR-TBD-CH-HET	2.02E-01	2.02E-01	2.02E-01	2.02E-01	2.02E-01	2.02E-01	2.02E-01	0.0%
OR-TBD-RH-HET	4.20E-01	4.20E-01	4.20E-01	4.20E-01	4.20E-01	4.20E-01	4.20E-01	42.5%
OR-WSTR-CH-HET	6.46E-02	6.46E-02	6.46E-02	6.46E-02	6.46E-02	6.46E-02	6.46E-02	0.0%
OR-Y12-CH-HET	3.14E-03	3.14E-03	3.14E-03	3.14E-03	3.14E-03	3.14E-03	3.14E-03	0.0%
RL200-01				2.63E+00			3.63E+00	0.0%
RL200-02	4.14E+00	2.00E+00		1.46E-03	1.14E-03	1.14E-03	7.90E-03	99.7%
RL216Z-02							1.71E+01	0.0%

2017 Estimated Complexing Agents Mass Scaled

Waste Stream ID	Acetate (kg)	Acetic Acid (kg)	Citrate (kg)	Citric Acid (kg)	EDTA (kg)	Oxalate (kg)	Oxalic Acid (kg)	Handling
AE-T001		3.07E-01		3.07E-01	3.07E-01	3.07E-01	3.07E-01	CH
AE-T003		3.65E-02		3.65E-02	3.65E-02	3.65E-02	3.01E+01	CH
AE-T009		1.14E+00		1.14E+00	1.14E+00	1.14E+00	1.14E+00	RH
BN004-S					5.36E+01			CH
ID-RF-S5300-A-S					8.33E-01			CH
IN-AE-AGHC-01		5.45E-03		5.45E-03			5.45E-03	RH
IN-AE-AGHC-02		8.35E-04		8.35E-04			8.35E-04	RH
IN-AW-161	1.27E-02	1.27E-03	1.27E-02		1.27E-03		1.27E-03	RH
IN-BN004					2.24E+02			CH
IN-BNINW218	2.46E+03	2.90E+02	8.59E+02	2.01E+02	1.61E+00		2.01E+02	CH
IN-ID-ANLE-BIN	2.16E-03	4.32E-02		4.32E-02	2.16E-03	2.16E-03	4.32E-02	RH
IN-ID-ANLW-W269-RH	6.99E-04	6.99E-05	6.99E-04	6.99E-04	6.99E-05		6.99E-05	RH
IN-ID-BTO-030		5.00E-03	5.00E-03	5.00E-03	5.00E-03		5.00E-03	RH
IN-ID-HFEF-S3000-RP	1.54E-03	1.54E-03	1.54E-03		1.54E-03		1.54E-03	RH
IN-ID-HFEF-S5000-RP	3.09E-03	3.09E-03	3.09E-03		3.09E-03		3.09E-03	RH
IN-ID-INL-152	5.06E-04	5.06E-04	5.06E-04		5.06E-04		5.06E-04	RH
IN-ID-INL-152M	1.54E-02	1.54E-02	1.54E-02		1.54E-02		1.54E-02	RH
IN-ID-MFC-SOLID	6.35E-04	6.35E-05	6.35E-04		6.35E-05		6.35E-05	RH
IN-ID-MISC-RH	9.50E-04	9.50E-03	9.50E-04		9.50E-04		9.50E-04	RH
IN-ID-RF-S5000-RH		5.50E-02		5.50E-02				RH
IN-ID-RF-S5300-A					2.69E+01			CH
IN-ID-Sample Fuel	6.25E-02	7.50E-03	6.25E-03		3.13E-02		7.50E-03	RH
IN-ID-SDA-Debris		3.86E+03		4.45E+00	2.37E-01		2.84E+00	CH
IN-ID-SDA-Sludge		5.24E+03		8.54E+01	4.07E+00		3.69E+01	CH
IN-ID-SDA-Soil		1.23E+03		2.59E+01	1.23E+00		7.66E+00	CH
INW169.001-S					1.09E+00			CH
LA-CIN01.001		1.31E+00		1.44E+02			2.24E+01	CH
LA-CIN02.001		1.74E+00		1.92E+02			1.08E+03	CH
LA-MHD01.001		6.52E+00		7.50E+01			9.35E+02	CH
LA-MIN02-V.001		1.16E-01		1.28E+01			1.59E+02	CH
LA-MIN03-NC.001		2.44E-01		2.68E+01			3.35E+02	CH
LL-M001		4.63E+00		4.63E+00	4.63E+00		4.63E+00	CH
LL-W018-S5100		2.37E+00		2.37E+00	2.37E+00		2.37E+00	CH
LL-W019		7.59E-01		7.59E-01	7.59E-01		7.59E-01	CH
OR-CHEM-CH-HET	2.43E-01	2.43E-01	2.43E-01	2.43E-01	2.43E-01	2.43E-01	2.43E-01	CH
OR-CHEM-RH-HET	1.16E-01	1.16E-01	1.16E-01	1.16E-01	1.16E-01	1.16E-01	1.16E-01	RH
OR-CRF-CH-HET	6.27E-02	6.27E-02	6.27E-02	6.27E-02	6.27E-02	6.27E-02	6.27E-02	CH
OR-GENR-CH-HET	1.79E-01	1.79E-01	1.79E-01	1.79E-01	1.79E-01	1.79E-01	1.79E-01	CH
OR-GENR-RH-HET	1.66E-02	1.66E-02	1.66E-02	1.66E-02	1.66E-02	1.66E-02	1.66E-02	RH
OR-IFEL-CH-HET	4.29E-01	4.29E-01	4.29E-01	4.29E-01	4.29E-01	4.29E-01	4.29E-01	CH
OR-ISTP-CH-HET	1.15E+00	1.15E+00	1.15E+00	1.15E+00	1.15E+00	1.15E+00	1.15E+00	CH
OR-ISTP-RH-HET	5.90E-02	5.90E-02	5.90E-02	5.90E-02	5.90E-02	5.90E-02	5.90E-02	RH
OR-MRF-CH-HET	1.12E-01	1.12E-01	1.12E-01	1.12E-01	1.12E-01	1.12E-01	1.12E-01	CH
OR-NBL-CH-HET	1.15E-01	1.15E-01	1.15E-01	1.15E-01	1.15E-01	1.15E-01	1.15E-01	CH
OR-NFS-CH-HET	2.28E+00	2.28E+00	2.28E+00	2.28E+00	2.28E+00	2.28E+00	2.28E+00	CH
OR-PGDP-CH-HET	1.55E-01	1.55E-01	1.55E-01	1.55E-01	1.55E-01	1.55E-01	1.55E-01	CH
OR-RADP-CH-HET	2.83E-01	2.83E-01	2.83E-01	2.83E-01	2.83E-01	2.83E-01	2.83E-01	CH
OR-RADP-RH-HET	8.25E-03	8.25E-03	8.25E-03	8.25E-03	8.25E-03	8.25E-03	8.25E-03	RH
OR-REDC-CH-HET	6.11E+00	6.11E+00	6.11E+00	6.11E+00	6.11E+00	6.11E+00	6.11E+00	CH
OR-REDC-RH-HET	1.62E+01	1.62E+01	1.62E+01	1.62E+01	1.62E+01	1.62E+01	1.62E+01	RH
OR-RF-CH-HET	7.07E-01	7.07E-01	7.07E-01	7.07E-01	7.07E-01	7.07E-01	7.07E-01	CH
OR-RF-RH-HET	1.86E+00	1.86E+00	1.86E+00	1.86E+00	1.86E+00	1.86E+00	1.86E+00	RH
OR-SWSA-CH-HET	6.66E-03	6.66E-03	6.66E-03	6.66E-03	6.66E-03	6.66E-03	6.66E-03	CH
OR-SWSA-CH-SOIL	9.98E-02	9.98E-02	9.98E-02	9.98E-02	9.98E-02	9.98E-02	9.98E-02	CH
OR-TBD-CH-HET	2.02E-01	2.02E-01	2.02E-01	2.02E-01	2.02E-01	2.02E-01	2.02E-01	CH
OR-TBD-RH-HET	1.48E+00	1.48E+00	1.48E+00	1.48E+00	1.48E+00	1.48E+00	1.48E+00	RH
OR-WSTR-CH-HET	6.46E-02	6.46E-02	6.46E-02	6.46E-02	6.46E-02	6.46E-02	6.46E-02	CH
OR-Y12-CH-HET	3.14E-03	3.14E-03	3.14E-03	3.14E-03	3.14E-03	3.14E-03	3.14E-03	CH
RL200-01				2.63E+00			3.63E+00	CH
RL200-02	4.14E+00	2.00E+00		1.46E-03	1.14E-03	1.14E-03	7.90E-03	CH
RL216Z-02							1.71E+01	CH

2017 Reported Complexing Agents Mass Unscaled

Waste Stream ID	Crosswalk	Acetate (kg)	Acetic Acid (kg)	Citrate (kg)	Citric Acid (kg)	EDTA (kg)	Oxalate (kg)	Oxalic Acid (kg)	Shipped	Case
RL222S-01	RL222S-01	8.55E+00				4.20E-03		8.55E+00	N	3
RL233S-01	RL233S-01		5.50E-02		1.18E+00			5.50E-02	Y	2
RL300-01	RL300-01	3.67E+01		1.48E+01	5.12E-02	1.48E-03	8.53E+00	1.79E+01	Y	2
RL300-03	RL300-03	2.10E-03		5.24E-04	5.24E-04	1.57E-03	5.24E-04	5.24E-04	N	3
RL308-01	RL308-01	2.10E-01		8.52E-01	1.03E-01	9.56E-01	9.58E-01	1.03E-01	Y	2
RL325-01	RL325-01	2.59E+02	5.28E+00	2.49E+02	3.03E+01	2.88E+01	3.89E+02	3.03E+01	Y	2
RLBAT-01	RLBAT-01		3.01E+00		1.05E+00				N	3
RLBW-01	RLBW-01	1.88E+00	4.88E-01		2.94E-01				Y	2
RLBW-03	RLBW-03	9.14E-05	3.07E-05		1.84E-05	2.98E-05			N	3
RLBW-08	RLBW-08	3.46E-05	1.62E-05		1.04E-05	1.62E-05			N	3
RLESG-01	RLESG-01				1.81E+00			1.76E+00	Y	2
RLESG-08	RLESG-08				6.42E-03	3.55E-04		6.23E-03	N	3
RLGEV-01	RLGEV-01				2.65E+00				Y	2
RLGEV-03	RLGEV-03				5.86E-05				N	3
RLHAN-01	RLHAN-01	8.96E-01	1.31E-01	2.57E-01		2.54E+00	5.09E-01	2.05E-01	N	3
RLHAN-03	New Waste Stream, RLHAN-01	2.30E-03							N	1
RLPFP-01	RLPFP-01	4.66E+03	2.25E+03		1.64E+00	1.28E+00	1.28E+00	8.89E+00	Y	2
RLPFP-05	Shipped, RLPFP-01	2.32E+03	1.12E+03		8.20E-01	6.38E-01	6.38E-01	4.43E+00	Y	2
RLPFP-08	RLPFP-08	2.67E-02	1.21E-02					4.16E-05	N	3
RLSWO-01	RLSWO-01		8.84E-01		2.29E+01			2.03E-02	Y	2
RLWAR-01	RLWAR-01				9.76E+02			3.37E+03	Y	2
RLWAR-03	RLWAR-03	6.12E-02			1.22E-01			4.10E-01	N	3
SA-W134	New Waste Stream		1.00E-09		1.00E-09				Y	1
SA-W135	New Waste Stream		1.00E-09		1.00E-09				Y	1
	Shipped								Y	2

2011 Estimated Complexing Agents Mass Unscaled

Waste Stream ID	Acetate (kg)	Acetic Acid (kg)	Citrate (kg)	Citric Acid (kg)	EDTA (kg)	Oxalate (kg)	Oxalic Acid (kg)
RL222S-01	8.55E+00				4.20E-03		8.55E+00
RL233S-01		5.50E-02		1.18E+00			5.50E-02
RL300-01	3.81E+01		1.53E+01	5.31E-02	1.53E-03	8.84E+00	1.85E+01
RL300-03	2.10E-03		5.24E-04	5.24E-04	1.57E-03	5.24E-04	5.24E-04
RL308-01	2.10E-01		8.52E-01	1.03E-01	9.56E-01	9.58E-01	1.03E-01
RL325-01	4.03E+02	3.39E+01	1.66E+03	2.01E+02	3.00E-01	6.38E+02	2.01E+02
RLBAT-01		3.01E+00		1.05E+00			
RLBW-01	1.18E+01	3.05E+00		1.84E+00			
RLBW-03	9.14E-05	3.07E-05		1.84E-05	2.98E-05		
RLBW-08	3.46E-05	1.62E-05		1.04E-05	1.62E-05		
RLESG-01				1.85E+00			1.80E+00
RLESG-08				6.42E-03	3.55E-04		6.23E-03
RLGEV-01				3.90E+00			
RLGEV-03				5.86E-05			
RLHAN-01	8.96E-01	1.31E-01	2.57E-01		2.54E+00	5.09E-01	2.05E-01
RLPFP-01	6.99E+03	3.38E+03		2.47E+00	1.92E+00	1.92E+00	1.33E+01
RLPFP-05	1.11E-01	5.39E-02					2.23E-04
RLPFP-08	2.67E-02	1.21E-02					4.16E-05
RLSWO-01		7.52E-01		1.98E+01			3.11E-03
RLWAR-01				4.02E+03			1.39E+04
RLWAR-03	6.12E-02			1.22E-01			4.10E-01
RF Total	4.46E+01	5.29E+00	1.66E+01	3.63E+00	1.18E+01		3.63E+00

2017 Estimated Complexing Agents Mass Unscaled

Waste Stream ID	Acetate (kg)	Acetic Acid (kg)	Citrate (kg)	Citric Acid (kg)	EDTA (kg)	Oxalate (kg)	Oxalic Acid (kg)	Pct Proj (%)
RL222S-01	8.55E+00				4.20E-03		8.55E+00	0.0%
RL233S-01		5.50E-02		1.18E+00			5.50E-02	0.0%
RL300-01	3.81E+01		1.53E+01	5.31E-02	1.53E-03	8.84E+00	1.85E+01	0.0%
RL300-03	2.10E-03		5.24E-04	5.24E-04	1.57E-03	5.24E-04	5.24E-04	0.0%
RL308-01	2.10E-01		8.52E-01	1.03E-01	9.56E-01	9.58E-01	1.03E-01	0.0%
RL325-01	4.03E+02	3.39E+01	1.66E+03	2.01E+02	2.88E+01	6.38E+02	2.01E+02	4.2%
RLBAT-01		3.01E+00		1.05E+00				0.0%
RLBW-01	1.18E+01	3.05E+00		1.84E+00				0.0%
RLBW-03	9.14E-05	3.07E-05		1.84E-05	2.98E-05			0.0%
RLBW-08	3.46E-05	1.62E-05		1.04E-05	1.62E-05			0.0%
RLESG-01				1.85E+00			1.80E+00	0.0%
RLESG-08				6.42E-03	3.55E-04		6.23E-03	0.0%
RLGEV-01				3.90E+00				0.0%
RLGEV-03				5.86E-05				0.0%
RLHAN-01	8.96E-01	1.31E-01	2.57E-01		2.54E+00	5.09E-01	2.05E-01	0.0%
RLHAN-03	2.30E-03							0.0%
RLPFP-01	6.99E+03	3.38E+03		2.47E+00	1.92E+00	1.92E+00	1.33E+01	34.4%
RLPFP-05	2.32E+03	1.12E+03		8.20E-01	6.38E-01	6.38E-01	4.43E+00	0.1%
RLPFP-08	2.67E-02	1.21E-02					4.16E-05	0.0%
RLSWO-01		8.84E-01		2.29E+01			2.03E-02	21.0%
RLWAR-01				4.02E+03			1.39E+04	0.0%
RLWAR-03	6.12E-02			1.22E-01			4.10E-01	0.0%
SA-W134		1.00E-09		1.00E-09				0.0%
SA-W135		1.00E-09		1.00E-09				0.0%
RF Total	4.46E+01	5.29E+00	1.66E+01	3.63E+00	1.18E+01		3.63E+00	0.0%

2017 Estimated Complexing Agents Mass Scaled

Waste Stream ID	Acetate (kg)	Acetic Acid (kg)	Citrate (kg)	Citric Acid (kg)	EDTA (kg)	Oxalate (kg)	Oxalic Acid (kg)	Handling
RL222S-01	8.55E+00				4.20E-03		8.55E+00	CH
RL233S-01		5.50E-02		1.18E+00			5.50E-02	CH
RL300-01	3.81E+01		1.53E+01	5.31E-02	1.53E-03	8.84E+00	1.85E+01	CH
RL300-03	2.10E-03		5.24E-04	5.24E-04	1.57E-03	5.24E-04	5.24E-04	CH
RL308-01	2.10E-01		8.52E-01	1.03E-01	9.56E-01	9.58E-01	1.03E-01	CH
RL325-01	4.13E+02	3.47E+01	1.70E+03	2.06E+02	2.91E+01	6.53E+02	2.06E+02	CH
RLBAT-01		3.01E+00		1.05E+00				CH
RLBW-01	1.18E+01	3.05E+00		1.84E+00				CH
RLBW-03	9.14E-05	3.07E-05		1.84E-05	2.98E-05			CH
RLBW-08	3.46E-05	1.62E-05		1.04E-05	1.62E-05			RH
RLESG-01				1.85E+00			1.80E+00	CH
RLESG-08				6.42E-03	3.55E-04		6.23E-03	RH
RLGEV-01				3.90E+00				CH
RLGEV-03				5.86E-05				CH
RLHAN-01	8.96E-01	1.31E-01	2.57E-01		2.54E+00	5.09E-01	2.05E-01	CH
RLHAN-03	2.30E-03							CH
RLPFP-01	8.39E+03	4.06E+03		2.96E+00	2.30E+00	2.30E+00	1.60E+01	CH
RLPFP-05	2.32E+03	1.12E+03		8.20E-01	6.38E-01	6.38E-01	4.44E+00	CH
RLPFP-08	2.67E-02	1.21E-02					4.16E-05	RH
RLSWO-01		9.60E-01		2.47E+01			3.03E-02	CH
RLWAR-01				4.02E+03			1.39E+04	CH
RLWAR-03	6.12E-02			1.22E-01			4.10E-01	CH
SA-W134		1.00E-09		1.00E-09				CH
SA-W135		1.00E-09		1.00E-09				RH
RF Total	4.46E+01	5.29E+00	1.66E+01	3.63E+00	1.18E+01		3.63E+00	CH

2017 Reported Complexing Agents Mass Unscaled Totals

Site ID (Handling)	TRU Waste Generator Site	Acetate (kg)	Acetic Acid (kg)	Citrate (kg)	Citric Acid (kg)	EDTA (kg)	Oxalate (kg)	Oxalic Acid (kg)
AE Total (CH)	Argonne National Laboratory	0.00E+00	2.34E-01	0.00E+00	2.34E-01	2.34E-01	2.34E-01	2.34E-01
AE Total (RH)	Argonne National Laboratory	0.00E+00	1.84E-01	0.00E+00	1.84E-01	1.84E-01	1.84E-01	1.84E-01
IN Total (CH)	Idaho National Laboratory	7.89E+01	2.40E+03	2.76E+01	1.12E+01	3.97E+00	0.00E+00	5.38E+01
IN Total (RH)	Idaho National Laboratory	8.00E-02	1.34E-01	2.66E-02	1.05E-01	5.25E-02	2.16E-03	7.06E-02
LA Total (CH)	Los Alamos National Laboratory	0.00E+00	9.39E-01	0.00E+00	1.03E+02	0.00E+00	0.00E+00	1.73E+02
LL Total (CH)	Lawrence Livermore National Laboratory	0.00E+00	5.20E+00	0.00E+00	5.20E+00	1.79E+00	0.00E+00	5.20E+00
OR Total (CH)	Oak Ridge National Laboratory	1.14E+01	1.14E+01	1.14E+01	1.14E+01	1.14E+01	1.14E+01	1.14E+01
OR Total (RH)	Oak Ridge National Laboratory	4.62E+00	4.62E+00	4.62E+00	4.62E+00	4.62E+00	4.62E+00	4.62E+00
RF Total (CH)	Rocky Flats Environmental Technology Site	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RL Total (CH)	Hanford (Richland) Site	7.29E+03	3.38E+03	2.65E+02	1.04E+03	3.42E+01	4.01E+02	3.46E+03
RL Total (RH)	Hanford (Richland) Site	2.67E-02	1.21E-02	0.00E+00	6.43E-03	3.71E-04	0.00E+00	6.28E-03
SA Total (CH)	Sandia National Laboratories	0.00E+00	1.00E-09	0.00E+00	1.00E-09	0.00E+00	0.00E+00	0.00E+00
SA Total (RH)	Sandia National Laboratories	0.00E+00	1.00E-09	0.00E+00	1.00E-09	0.00E+00	0.00E+00	0.00E+00
CH TOTAL		**7.38E+03**	**5.80E+03**	**3.04E+02**	**1.17E+03**	**5.16E+01**	**4.13E+02**	**3.71E+03**
RH TOTAL		**4.73E+00**	**4.95E+00**	**4.65E+00**	**4.91E+00**	**4.86E+00**	**4.81E+00**	**4.88E+00**
GRAND TOTAL		**7.39E+03**	**5.81E+03**	**3.08E+02**	**1.18E+03**	**5.65E+01**	**4.18E+02**	**3.71E+03**

2011 Estimated Complexing Agents Mass Unscaled Totals

Site ID (Handling)	Acetate (kg)	Acetic Acid (kg)	Citrate (kg)	Citric Acid (kg)	EDTA (kg)	Oxalate (kg)	Oxalic Acid (kg)
AE Total (CH)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.68E+01
AE Total (RH)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
IN Total (CH)	2.46E+03	1.06E+04	8.59E+02	3.17E+02	3.15E+02	0.00E+00	2.44E+02
IN Total (RH)	2.92E-02	2.89E-02	3.42E-02	1.17E-02	2.22E-02	0.00E+00	2.89E-02
LA Total (CH)	0.00E+00	7.35E+00	0.00E+00	3.87E+02	0.00E+00	0.00E+00	2.13E+03
LL Total (CH)	0.00E+00	5.81E+00	0.00E+00	5.81E+00	5.81E+00	0.00E+00	5.81E+00
OR Total (CH)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
OR Total (RH)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RF Total (CH)	4.46E+01	5.29E+00	1.66E+01	3.63E+00	1.18E+01	0.00E+00	3.63E+00
RL Total (CH)	7.46E+03	3.43E+03	1.68E+03	4.25E+03	5.73E+00	6.50E+02	1.41E+04
RL Total (RH)	2.67E-02	1.21E-02	0.00E+00	6.43E-03	3.71E-04	0.00E+00	6.28E-03
SA Total (CH)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SA Total (RH)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CH TOTAL	**9.96E+03**	**1.41E+04**	**2.55E+03**	**4.96E+03**	**3.38E+02**	**6.50E+02**	**1.65E+04**
RH TOTAL	**5.59E-02**	**4.09E-02**	**3.42E-02**	**1.81E-02**	**2.26E-02**	**0.00E+00**	**3.51E-02**
GRAND TOTAL	**9.96E+03**	**1.41E+04**	**2.55E+03**	**4.96E+03**	**3.38E+02**	**6.50E+02**	**1.65E+04**

2017 Estimated Complexing Agents Mass Unscaled Totals

Site ID (Handling)	Acetate (kg)	Acetic Acid (kg)	Citrate (kg)	Citric Acid (kg)	EDTA (kg)	Oxalate (kg)	Oxalic Acid (kg)	Total (kg)
AE Total (CH)	0.00E+00	2.34E-01	0.00E+00	2.34E-01	2.34E-01	2.34E-01	2.70E+01	2.79E+01
AE Total (RH)	0.00E+00	1.84E-01	0.00E+00	1.84E-01	1.84E-01	1.84E-01	1.84E-01	9.19E-01
IN Total (CH)	2.46E+03	1.06E+04	8.59E+02	3.17E+02	3.14E+02	0.00E+00	2.48E+02	1.48E+04
IN Total (RH)	1.00E-01	1.48E-01	4.67E-02	1.10E-01	6.13E-02	2.16E-03	8.48E-02	5.54E-01
LA Total (CH)	0.00E+00	7.40E+00	0.00E+00	3.93E+02	0.00E+00	0.00E+00	2.20E+03	2.60E+03
LL Total (CH)	0.00E+00	5.61E+00	0.00E+00	5.61E+00	5.61E+00	0.00E+00	5.61E+00	2.24E+01
OR Total (CH)	1.14E+01	1.14E+01	1.14E+01	1.14E+01	1.14E+01	1.14E+01	1.14E+01	7.99E+01
OR Total (RH)	4.62E+00	4.62E+00	4.62E+00	4.62E+00	4.62E+00	4.62E+00	4.62E+00	3.23E+01
RF Total (CH)	4.46E+01	5.29E+00	1.66E+01	3.63E+00	1.18E+01	0.00E+00	3.63E+00	8.55E+01
RL Total (CH)	9.78E+03	4.55E+03	1.68E+03	4.26E+03	3.49E+01	6.51E+02	1.41E+04	3.51E+04
RL Total (RH)	2.67E-02	1.21E-02	0.00E+00	6.43E-03	3.71E-04	0.00E+00	6.28E-03	5.19E-02
SA Total (CH)	0.00E+00	1.00E-09	0.00E+00	1.00E-09	0.00E+00	0.00E+00	0.00E+00	2.00E-09
SA Total (RH)	0.00E+00	1.00E-09	0.00E+00	1.00E-09	0.00E+00	0.00E+00	0.00E+00	2.00E-09
CH TOTAL	**1.23E+04**	**1.52E+04**	**2.56E+03**	**4.99E+03**	**3.78E+02**	**6.62E+02**	**1.66E+04**	**5.27E+04**
RH TOTAL	**4.75E+00**	**4.96E+00**	**4.67E+00**	**4.92E+00**	**4.86E+00**	**4.81E+00**	**4.89E+00**	**3.39E+01**
GRAND TOTAL	**1.23E+04**	**1.52E+04**	**2.57E+03**	**4.99E+03**	**3.83E+02**	**6.67E+02**	**1.66E+04**	**5.28E+04**

2017 Estimated Complexing Agents Mass Scaled Totals

Site ID (Handling)	Acetate kg	Acetic Acid kg	Citrate kg	Citric Acid kg	EDTA kg	Oxalate kg	Oxalic Acid kg	Total (kg)
AE Total (CH)	0.00E+00	3.44E-01	0.00E+00	3.44E-01	3.44E-01	3.44E-01	3.04E+01	3.18E+01
AE Total (RH)	0.00E+00	1.14E+00	0.00E+00	1.14E+00	1.14E+00	1.14E+00	1.14E+00	5.68E+00
IN Total (CH)	2.46E+03	1.06E+04	8.59E+02	3.17E+02	3.14E+02	0.00E+00	2.48E+02	1.48E+04
IN Total (RH)	1.00E-01	1.48E-01	4.67E-02	1.10E-01	6.13E-02	2.16E-03	8.48E-02	5.54E-01
LA Total (CH)	0.00E+00	9.94E+00	0.00E+00	4.51E+02	0.00E+00	0.00E+00	2.53E+03	2.99E+03
LL Total (CH)	0.00E+00	7.75E+00	0.00E+00	7.75E+00	7.75E+00	0.00E+00	7.75E+00	3.10E+01
OR Total (CH)	1.22E+01	1.22E+01	1.22E+01	1.22E+01	1.22E+01	1.22E+01	1.22E+01	8.54E+01
OR Total (RH)	1.98E+01	1.98E+01	1.98E+01	1.98E+01	1.98E+01	1.98E+01	1.98E+01	1.38E+02
RF Total (CH)	4.46E+01	5.29E+00	1.66E+01	3.63E+00	1.18E+01	0.00E+00	3.63E+00	8.55E+01
RL Total (CH)	1.12E+04	5.22E+03	1.72E+03	4.26E+03	3.56E+01	6.67E+02	1.41E+04	3.72E+04
RL Total (RH)	2.67E-02	1.21E-02	0.00E+00	6.43E-03	3.71E-04	0.00E+00	6.28E-03	5.19E-02
SA Total (CH)	0.00E+00	1.00E-09	0.00E+00	1.00E-09	0.00E+00	0.00E+00	0.00E+00	2.00E-09
SA Total (RH)	0.00E+00	1.00E-09	0.00E+00	1.00E-09	0.00E+00	0.00E+00	0.00E+00	2.00E-09
CH TOTAL	**1.37E+04**	**1.59E+04**	**2.61E+03**	**5.05E+03**	**3.82E+02**	**6.79E+02**	**1.70E+04**	**5.53E+04**
RH TOTAL	**1.99E+01**	**2.11E+01**	**1.98E+01**	**2.10E+01**	**2.10E+01**	**2.09E+01**	**2.10E+01**	**1.45E+02**
GRAND TOTAL	**1.37E+04**	**1.59E+04**	**2.63E+03**	**5.08E+03**	**4.03E+02**	**7.00E+02**	**1.70E+04**	**5.54E+04**

[1] *See* Table 5-1. *Decision Cases for Estimating Chemical and Cement Components*

Table A-3 Cement Comparison: 2017 Inventory Data and 2011 Estimates

2017 Reported Cement Mass Unscaled

Waste Stream ID	Crosswalk	Cement (kg)	Shipped	[1]Case
IN-BN004	IN-BN004	7.15E+02	Y	2
	Waste Stream Deleted From Inventory		N	5
IN-BN222	IN-BN222	1.86E+02	Y	2
	Waste Stream Deleted From Inventory		N	5
	Potentially shipped cement from IN-W208R in 2011		Y	2
	Waste Stream Deleted From Inventory		N	5
	Waste Stream Deleted From Inventory		N	5
	Waste Stream Deleted From Inventory		N	5
IN-BN836	IN-BN836	1.14E-01	Y	2
	Waste Stream Deleted From Inventory		N	5
	Waste Stream Deleted From Inventory		N	5
IN-BNINW216	IN-BNINW216	3.10E+03	Y	2
IN-BNINW218	IN-BNINW218	1.95E+03	Y	2
	Waste Stream Deleted From Inventory		Y	2
IN-ID-BTO-030	IN-ID-BTO-030	6.68E+01	N	3
	Shipped		Y	2
	Shipped		Y	2
IN-ID-RF-S3150-A	IN-ID-RF-S3150-A	4.54E+02	Y	2
IN-ID-RF-S5000-RH	New Waste Stream	1.47E+02	N	1
	Shipped		Y	2
IN-ID-SDA-Debris	IN-ID-SDA-Debris	4.07E+02	Y	2
IN-ID-SDA-Sludge	IN-ID-SDA-Sludge	5.16E+02	Y	2
IN-ID-SDA-Soil	IN-ID-SDA-Soil	1.95E+02	Y	2
IN-RF-005	New Waste Stream	1.02E+03	N	1
IN-RF-745	New Waste Stream	4.16E+02	N	1
IN-RF-823	New Waste Stream, IN-BN823	2.34E+02	N	1
LA-CIN01.001	LA-CIN01.001, LA-TA-55-14	4.64E+05	Y	2
LA-CIN02.001	LA-CIN02.001	6.20E+04	Y	2
LA-CIN03.001	LA-CIN03.001	1.86E+03	N	3
LA-LA225D	New Waste Stream	4.49E+02	N	1
LA-TA-03-28	LA-TA-03-28	1.06E+03	N	3
LA-TA-21-13	LA-TA-21-13	9.85E+05	N	3
LA-TA-21-16	LA-TA-21-16	1.18E+04	N	3
LA-TA-50-18	LA-TA-50-18	4.27E+02	N	3
	Waste Stream Deleted From Inventory		N	5
LA-TA-55-38	LA-TA-55-38	1.54E+01	N	3
LL-M001	LL-M001	3.43E+03	Y	2
	No longer reporting Cements		N	5
LL-W019	New Waste Stream	1.27E+02	Y	1
	Shipped		Y	2
	Shipped		Y	2
	Shipped		Y	2
	Shipped		Y	2
	Shipped		Y	2
NT-W021	NT-W021	1.20E+01	N	3
OR-NFS-CH-HOM	New Waste Stream	1.00E+02	N	1
OR-RF-CH-HOM	New Waste Stream	1.50E+01	N	1
RL105-03	RL105-03	6.37E+04	N	3
RL105-09	RL105-09	7.19E+02	N	3
RL300-03	RL300-03	2.12E+03	N	3
RL308-03	RL308-03	9.53E+01	N	3
RL325-03	RL325-03	5.83E+02	N	3
RL325-09	New Waste Stream	5.83E+02	N	1
RLESG-03	RLESG-03	2.33E+01	N	3
RLP11-01	RLP11-01	7.28E+02	N	3
RLWAR-03	RLWAR-03	2.92E+03	N	3

2011 Estimated Cement Mass Unscaled

Waste Stream ID	Cement (kg)
IN-BN004	2.18E+05
IN-BN095	1.09E+04
IN-BN222	2.44E+04
IN-BN432	1.30E+04
IN-BN510.1	4.63E+00
IN-BN806	2.02E+03
IN-BN817	1.86E+03
IN-BN823	9.91E+02
IN-BN836	5.77E+04
IN-BN976	1.00E+00
IN-BN978	6.04E+03
IN-BNINW216	4.87E+06
IN-BNINW218	1.04E+06
IN-GEM-01	8.49E+02
IN-ID-BTO-030	6.68E+01
IN-ID-NTLLNL-S3900	2.62E+02
IN-ID-NTLLNL-S5400	9.63E+02
IN-ID-RF-S3150-A	1.71E+02
IN-ID-SA-T001	9.36E+01
IN-ID-SDA-Debris	5.83E+02
IN-ID-SDA-Sludge	2.70E+03
IN-ID-SDA-Soil	4.94E+02
LA-CIN01.001	5.60E+05
LA-CIN02.001	1.64E+05
LA-CIN03.001	1.96E+03
LA-TA-03-28	1.06E+03
LA-TA-21-13	1.07E+06
LA-TA-21-16	1.18E+04
LA-TA-50-18	4.27E+02
LA-TA-55-14	7.34E+02
LA-TA-55-38	3.43E+02
LL-M001	2.25E+05
LL-W018-S5100	6.27E+02
NTLBL-S3900	6.24E+00
NTLBL-S5400	1.87E+01
NTLLNL-S3900	1.06E+02
NTLLNL-S5400	3.49E+03
NTLRC-S5400	2.97E+00
NT-W021	1.20E+01
RL105-03	6.37E+04
RL105-09	3.60E+05
RL300-03	2.12E+03
RL308-03	9.53E+01
RL325-03	5.83E+02
RLESG-03	2.33E+01
RLP11-01	7.28E+02
RLWAR-03	2.92E+03

2017 Estimated Cement Mass Unscaled

Waste Stream ID	Cement (kg)	Pct Proj (%)
IN-BN004	2.18E+05	0.0%
IN-BN222	2.44E+04	0.0%
IN-BN510.1	4.63E+00	0.0%
IN-BN836	5.77E+04	0.0%
IN-BNINW216	4.87E+06	0.0%
IN-BNINW218	1.04E+06	0.0%
IN-GEM-01	8.49E+02	0.0%
IN-ID-BTO-030	6.68E+01	0.0%
IN-ID-NTLLNL-S3900	2.62E+02	0.0%
IN-ID-NTLLNL-S5400	9.63E+02	0.0%
IN-ID-RF-S3150-A	4.54E+02	0.0%
IN-ID-RF-S5000-RH	1.47E+02	0.0%
IN-ID-SA-T001	9.36E+01	0.0%
IN-ID-SDA-Debris	5.83E+02	0.0%
IN-ID-SDA-Sludge	2.70E+03	0.0%
IN-ID-SDA-Soil	4.94E+02	0.0%
IN-RF-005	1.02E+03	0.0%
IN-RF-745	4.16E+02	0.0%
IN-RF-823	2.34E+02	0.0%
LA-CIN01.001	5.60E+05	50.8%
LA-CIN02.001	1.64E+05	0.0%
LA-CIN03.001	1.86E+03	0.0%
LA-LA225D	4.49E+02	0.0%
LA-TA-03-28	1.06E+03	0.0%
LA-TA-21-13	9.85E+05	0.0%
LA-TA-21-16	1.18E+04	0.0%
LA-TA-50-18	4.27E+02	0.0%
LA-TA-55-38	1.54E+01	0.0%
LL-M001	2.25E+05	73.1%
LL-W019	1.27E+02	57.3%
NTLBL-S3900	6.24E+00	0.0%
NTLBL-S5400	1.87E+01	0.0%
NTLLNL-S3900	1.06E+02	0.0%
NTLLNL-S5400	3.49E+03	0.0%
NTLRC-S5400	2.97E+00	0.0%
NT-W021	1.20E+01	0.0%
OR-NFS-CH-HOM	1.00E+02	0.0%
OR-RF-CH-HOM	1.50E+01	0.0%
RL105-03	6.37E+04	0.0%
RL105-09	7.19E+02	0.0%
RL300-03	2.12E+03	0.0%
RL308-03	9.53E+01	0.0%
RL325-03	5.83E+02	0.0%
RL325-09	5.83E+02	0.0%
RLESG-03	2.33E+01	0.0%
RLP11-01	7.28E+02	0.0%
RLWAR-03	2.92E+03	0.0%

2017 Estimated Cement Mass Scaled

Waste Stream ID	Cement (kg)	Handling	Cement Type
IN-BN004	2.18E+05	CH	Both
IN-BN222	2.44E+04	CH	Reacted
IN-BN510.1	4.63E+00	CH	Reacted
IN-BN836	5.77E+04	CH	Both
IN-BNINW216	4.87E+06	CH	Both
IN-BNINW218	1.04E+06	CH	Both
IN-GEM-01	8.49E+02	CH	Both
IN-ID-BTO-030	6.68E+01	RH	Reacted
IN-ID-NTLLNL-S3900	2.62E+02	CH	Reacted
IN-ID-NTLLNL-S5400	9.63E+02	CH	Reacted
IN-ID-RF-S3150-A	4.54E+02	CH	Reacted
IN-ID-RF-S5000-RH	1.47E+02	RH	Both
IN-ID-SA-T001	9.36E+01	CH	Both
IN-ID-SDA-Debris	5.83E+02	CH	Both
IN-ID-SDA-Sludge	2.70E+03	CH	Both
IN-ID-SDA-Soil	4.94E+02	CH	Both
IN-RF-005	1.02E+03	CH	Reacted
IN-RF-745	4.16E+02	CH	Reacted
IN-RF-823	2.34E+02	CH	Reacted
LA-CIN01.001	7.25E+05	CH	Reacted
LA-CIN02.001	1.64E+05	CH	Reacted
LA-CIN03.001	1.86E+03	CH	Reacted
LA-LA225D	4.49E+02	CH	Reacted
LA-TA-03-28	1.06E+03	CH	Reacted
LA-TA-21-13	9.85E+05	CH	Reacted
LA-TA-21-16	1.18E+04	CH	Reacted
LA-TA-50-18	4.27E+02	CH	Reacted
LA-TA-55-38	1.54E+01	CH	Reacted
LL-M001	3.20E+05	CH	Reacted
LL-W019	1.69E+02	CH	Both
NTLBL-S3900	6.24E+00	CH	Reacted
NTLBL-S5400	1.87E+01	CH	Reacted
NTLLNL-S3900	1.06E+02	CH	Reacted
NTLLNL-S5400	3.49E+03	CH	Reacted
NTLRC-S5400	2.97E+00	CH	Reacted
NT-W021	1.20E+01	CH	Reacted
OR-NFS-CH-HOM	1.00E+02	CH	Reacted
OR-RF-CH-HOM	1.50E+01	CH	Reacted
RL105-03	6.37E+04	CH	Reacted
RL105-09	7.19E+02	RH	Reacted
RL300-03	2.12E+03	CH	Reacted
RL308-03	9.53E+01	CH	Reacted
RL325-03	5.83E+02	CH	Reacted
RL325-09	5.83E+02	RH	Reacted
RLESG-03	2.33E+01	CH	Reacted
RLP11-01	7.28E+02	CH	Reacted
RLWAR-03	2.92E+03	CH	Reacted

2017 Reported Cement Mass Unscaled

Waste Stream ID	Crosswalk	Cement (kg)	Shipped	[1]Case
SA-W137	SA-W137	5.00E-03	N	3
SP-RHHD	New Waste Stream	5.66E+02	N	1
SR-AGNS-HOM	SR-AGNS-HOM	2.03E+03	Y	2
	Shipped		Y	2
	Shipped		Y	2
	Shipped		Y	2
	Shipped		Y	2
	Shipped		Y	2
	Shipped		Y	2
	Shipped		Y	2
SR-KAC-PuOx	New Waste Stream	2.03E+03	N	1
SR-NIST-HET	SR-NIST-HET	2.90E+01	N	3
SR-SDD-HET-A	SR-SDD-HET-A, SR-SDD-HOM-A	6.03E+00	Y	2
	Shipped		Y	2
SR-SDD-HOM-A	SR-SDD-HOM-A	2.09E+03	Y	2
SR-SDD-HOM-B	SR-SDD-HOM-B	1.74E+03	Y	2
	Shipped		Y	2
	Shipped		Y	2

2011 Estimated Cement Mass Unscaled

Waste Stream ID	Cement (kg)
SA-W137	5.00E-03
SR-AGNS-HOM	3.92E+03
SR-BCLCH-MT01	7.08E+02
SR-BCLDP.001.001	7.86E+01
SR-BCLDP.001.002	4.59E+02
SR-BCLDP.002	1.50E+01
SR-BCLDP.003	7.56E+02
SR-BCLDP.004.002	4.50E+01
SR-BCLDP.004.003	6.41E+01
SR-NIST-HET	3.05E+01
SR-SDD-HET-A	8.00E+00
SR-SDD-HET-B	2.19E+01
SR-SDD-HOM-A	3.01E+03
SR-SDD-HOM-B	4.20E+03
SR-W027-221H-HET-D	5.32E+02
RF Total	3.58E+05

2017 Estimated Cement Mass Unscaled

Waste Stream ID	Cement (kg)	Pct Proj (%)
SA-W137	5.00E-03	0.0%
SP-RHHD	5.66E+02	0.0%
SR-AGNS-HOM	3.92E+03	0.0%
SR-BCLCH-MT01	7.08E+02	0.0%
SR-BCLDP.001.001	7.86E+01	0.0%
SR-BCLDP.001.002	4.59E+02	0.0%
SR-BCLDP.002	1.50E+01	0.0%
SR-BCLDP.003	7.56E+02	0.0%
SR-BCLDP.004.002	4.50E+01	0.0%
SR-BCLDP.004.003	6.41E+01	0.0%
SR-KAC-PuOx	2.03E+03	100.0%
SR-NIST-HET	2.90E+01	0.0%
SR-SDD-HET-A	8.00E+00	0.0%
SR-SDD-HET-B	2.19E+01	0.0%
SR-SDD-HOM-A	3.01E+03	0.0%
SR-SDD-HOM-B	4.20E+03	0.0%
SR-W027-221H-HET-D	5.32E+02	0.0%
RF Total	3.58E+05	0.0%

2017 Estimated Cement Mass Scaled

Waste Stream ID	Cement (kg)	Handling	Cement Type
SA-W137	5.00E-03	CH	Both
SP-RHHD	5.66E+02	RH	Reacted
SR-AGNS-HOM	3.92E+03	CH	Reacted
SR-BCLCH-MT01	7.08E+02	CH	Reacted
SR-BCLDP.001.001	7.86E+01	RH	Reacted
SR-BCLDP.001.002	4.59E+02	RH	Reacted
SR-BCLDP.002	1.50E+01	RH	Reacted
SR-BCLDP.003	7.56E+02	RH	Reacted
SR-BCLDP.004.002	4.50E+01	RH	Reacted
SR-BCLDP.004.003	6.41E+01	RH	Reacted
SR-KAC-PuOx	3.20E+03	CH	Unreacted
SR-NIST-HET	2.90E+01	CH	Reacted
SR-SDD-HET-A	8.00E+00	CH	Reacted
SR-SDD-HET-B	2.19E+01	CH	Reacted
SR-SDD-HOM-A	3.01E+03	CH	Reacted
SR-SDD-HOM-B	4.20E+03	CH	Reacted
SR-W027-221H-HET-D	5.32E+02	CH	Reacted
RF Total	3.58E+05	CH	Both

2017 Reported Cement Mass Unscaled Totals

Site ID (Handling)	TRU Waste Generator Site	Cement (kg)
AW Total (RH)	Material and Fuels Complex	0.00E+00
IN Total (CH)	Idaho National Laboratory	9.20E+03
IN Total (RH)	Idaho National Laboratory	2.14E+02
LA Total (CH)	Los Alamos National Laboratory	1.53E+06
LL Total (CH)	Lawrence Livermore National Laboratory	3.56E+03
NT Total (CH)	Nevada National Security Site	1.20E+01
OR Total (CH)	Oak Ridge National Laboratory	1.15E+02
OR Total (RH)	Oak Ridge National Laboratory	0.00E+00
RF Total (CH)	Rocky Flats Environmental Technology Site	0.00E+00
RL Total (CH)	Hanford (Richland) Site	7.02E+04
RL Total (RH)	Hanford (Richland) Site	1.30E+03
SA Total (CH)	Sandia National Laboratories	5.00E-03
SP Total (RH)	Separations Process Research Unit	5.66E+02
SR Total (CH)	Savannah River Site	7.92E+03
SR Total (RH)	Savannah River Site	0.00E+00
CH TOTAL		**1.62E+06**
RH TOTAL		**2.08E+03**
GRAND TOTAL		**1.62E+06**

2011 Estimated Cement Mass Unscaled Totals

Site ID (Handling)	Cement (kg)
AW Total (RH)	0.00E+00
IN Total (CH)	6.26E+06
IN Total (RH)	6.68E+01
LA Total (CH)	1.82E+06
LL Total (CH)	2.25E+05
NT Total (CH)	3.64E+03
OR Total (CH)	0.00E+00
OR Total (RH)	0.00E+00
RF Total (CH)	3.58E+05
RL Total (CH)	7.02E+04
RL Total (RH)	3.60E+05
SA Total (CH)	5.00E-03
SP Total (RH)	0.00E+00
SR Total (CH)	1.24E+04
SR Total (RH)	1.42E+03
CH TOTAL	**8.74E+06**
RH TOTAL	**3.62E+05**
GRAND TOTAL	**9.10E+06**

2017 Estimated Cement Mass Unscaled Totals

Site ID (Handling)	Cement (kg)
AW Total (RH)	0.00E+00
IN Total (CH)	6.22E+06
IN Total (RH)	2.14E+02
LA Total (CH)	1.73E+06
LL Total (CH)	2.25E+05
NT Total (CH)	3.64E+03
OR Total (CH)	1.15E+02
OR Total (RH)	0.00E+00
RF Total (CH)	3.58E+05
RL Total (CH)	7.02E+04
RL Total (RH)	1.30E+03
SA Total (CH)	5.00E-03
SP Total (RH)	5.66E+02
SR Total (CH)	1.44E+04
SR Total (RH)	1.42E+03
CH TOTAL	**8.62E+06**
RH TOTAL	**3.50E+03**
GRAND TOTAL	**8.62E+06**
CH REACTED TOTAL	**2.06E+06**
CH UNREACTED TOTAL	**2.03E+03**
CH BOTH TOTAL	**6.55E+06**
CH GRAND TOTAL	**8.62E+06**
RH REACTED TOTAL	**3.35E+03**
RH UNREACTED TOTAL	**0.00E+00**
RH BOTH TOTAL	**1.47E+02**
RH GRAND TOTAL	**3.50E+03**
CH AND RH REACTED TOTAL	**2.07E+06**
CH AND RH UNREACTED TOTAL	**2.03E+03**
CH AND RH BOTH TOTAL	**6.55E+06**
GRAND TOTAL	**8.62E+06**

2017 Estimated Cement Mass Scaled Totals

Site ID (Handling)	Cement (kg)
AW Total (RH)	0.00E+00
IN Total (CH)	6.22E+06
IN Total (RH)	2.14E+02
LA Total (CH)	1.89E+06
LL Total (CH)	3.20E+05
NT Total (CH)	3.64E+03
OR Total (CH)	1.15E+02
OR Total (RH)	0.00E+00
RF Total (CH)	3.58E+05
RL Total (CH)	7.02E+04
RL Total (RH)	1.30E+03
SA Total (CH)	5.00E-03
SP Total (RH)	5.66E+02
SR Total (CH)	1.56E+04
SR Total (RH)	1.42E+03
CH TOTAL	**8.88E+06**
RH TOTAL	**3.50E+03**
GRAND TOTAL	**8.88E+06**
CH REACTED TOTAL	**2.32E+06**
CH UNREACTED TOTAL	**3.20E+03**
CH BOTH TOTAL	**6.55E+06**
CH GRAND TOTAL	**8.88E+06**
RH REACTED TOTAL	**3.35E+03**
RH UNREACTED TOTAL	**0.00E+00**
RH BOTH TOTAL	**1.47E+02**
RH GRAND TOTAL	**3.50E+03**
CH AND RH REACTED TOTAL	**2.33E+06**
CH AND RH UNREACTED TOTAL	**3.20E+03**
CH AND RH BOTH TOTAL	**6.55E+06**
GRAND TOTAL	**8.88E+06**

[1] *See* Table 5-1. *Decision Cases for Estimating Chemical and Cement Components*