LA-UR-25-26083

Approved for public release; distribution is unlimited.

Title:	Standard Analysis Report INV-SAR-81, Revision 0 Chemical and Cement Components 2023 Inventory Estimates for the Interim State Performance Assessment of the Waste Isolation Pilot Plant
Author(s):	Callicoat, Johnathon Wayne
Intended for:	Report
Issued:	2025-06-25

Los Alamos
NATIONAL LABORATORY







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

Standard Analysis Report
INV-SAR-81, Revision 0

Chemical and Cement Components 2023 Inventory Estimates for the Interim State Performance Assessment of the Waste Isolation Pilot Plant

Effective Date: 4/29/25

Originator:

JOHNATHON CALLICOAT (Affiliate) Digitally signed by JOHNATHON CALLICOAT (Affiliate) Date: 2025.04.28 13:19:19 -06'00'

John Callicoat, LANL-CO Inventory Team Member Date

Approval:

JERRY YOUNG (Affiliate) Digitally signed by JERRY YOUNG (Affiliate) Date: 2025.04.29 09:37:31 -06'00'

Jerry Young, LANL-CO Inventory Team Lead Date

PRISCILLA YANEZ (Affiliate) Digitally signed by PRISCILLA YANEZ (Affiliate) Date: 2025.04.29 09:59:19 -06'00'

Priscilla Yanez, LANL-CO Quality Assurance Manager Date

DOUGLAS WEAVER (Affiliate) Digitally signed by DOUGLAS WEAVER (Affiliate) Date: 2025.04.29 10:04:40 -06'00'

Douglas Weaver, LANL-CO Division Leader Date

HISTORY OF REVISION

Revision Number	Effective Date	Pages Affected	Description of Revision
0	4/29/25	NA	Original Release

Table of Contents

1.0 INTRODUCTION 4
2.0 OBJECTIVE 4
3.0 SCOPE 4
4.0 DATA INPUTS AND ASSUMPTIONS 4
5.0 METHOD 5
5.1 Hardware and Software Used for Analysis Activities 6
5.2 Preparation of Chemical and Cement Components for PA 6
5.2.1 Comparison to Totals from Previous Analysis 6
5.2.2 Scaling Chemical and Cement Components 8
6.0 RESULTS 9
7.0 REFERENCES 10
8.0 APPENDICES 10
Appendix A. Comparison of 2023 Inventory Data to 2021 Estimates 11

Table of Tables

Table 5-1 Decision Cases for Estimating Chemical and Cement Components 7
Table 6-1 2023 Estimated Oxyanions Mass Scaled by Handling 9
Table 6-2 2023 Estimated Complexing Agents Mass Scaled by Handling 9
Table 6-3 2023 Estimated Cement Mass Scaled by State and Handling 9
Table A-1 Oxyanions Comparison: 2023 Inventory Data and 2021 Estimates 12
Table A-2 Complexing Agents Comparison: 2023 Inventory Data and 2021 Estimates 15
Table A-3 Cement Comparison: 2023 Inventory Data and 2021 Estimates 17

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, 2023. These estimates will be included in a Performance Assessment Inventory Report developed for the U.S. Department of Energy (DOE) interim state repository configuration performance assessment (PA) for the 2026 Compliance Recertification Application (CRA).

2.0 OBJECTIVE

The objective of this analysis is to report scaled (interim state repository configuration) 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-69, *Chemical and Cement Components 2021 Inventory Estimates* (Ybarra 2022). The PA needs to account for all waste at the sites and emplaced in the Waste Isolation Pilot Plant (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 2024a), and is identified as task number 1 in INV-AP-01, *Analysis Plan for Transuranic Waste Inventory* (LANL-CO 2024b).

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.23.IS.PA (LANL-CO 2025), which contains the inventory data with a cutoff date of December 31, 2023 for an interim state repository scaling configuration. 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 2023). 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-69 to account for the component masses that were previously estimated by using the same objective and assumptions.

4.0 DATA INPUTS AND ASSUMPTIONS

The data analyzed throughout this report comes from INV-SAR-69, which is also referred to in this analysis as "previously reported," and data reports generated from the CID data version D.23.IS.PA 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.23.IS.PA to D.21.00

To perform this analysis, it must be determined whether chemical and cement components in waste streams reported in INV-SAR-69 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-69, 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.23.IS.PA. 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 2023a) and LCO-QP19-1, *Software Quality Assurance* (LANL-CO 2023b).

5.1 Hardware and Software Used for Analysis Activities

The hardware, operating system, and software used for this activity are described below:

Workstation 1:

Hardware:	Hewlett Packard Z2 Mini G9 Intel® Core™i7-13700 CPU @ 2.1 GHz 64 GB RAM 943 GB HD PN2404646
Operating System:	Microsoft® Windows 11 Enterprise Version 23H2
Software:	Comprehensive Inventory Database version v.2.04 S.2.04, data version D.23.IS.PA; Microsoft® Office Access 2016; Microsoft® Office Excel® 2016

5.2 Preparation of Chemical and Cement Components for PA

For PA purposes, the chemical and cement components must be scaled to an interim state repository configuration 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-69) to account for the estimated amount of mass emplaced at the WIPP during that time period. Section 5.2.2 describes how the resulting 2023 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-69, which includes estimates of emplaced mass as of December 31, 2021. This comparison will identify waste streams that have been shipped to the WIPP prior to and including calendar year 2023. 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-69 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-69 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-69 using the cases described above. 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 data are populated from the unscaled estimated mass tables from the previous analysis. The resulting estimates are then determined by using the cases described in Table 5-1. This data is then scaled as described in section 5.2.2 and presented in a 2023 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-69 are captured as a single subtotal entry, identified as waste stream "RF Total."

5.2.2 Scaling Chemical and Cement Components

The PA conducted in support of the interim state configuration assumes that the WIPP repository would be filled to a total inventory of 157,831.92 m^3 with limits of 1,584.80 m^3 for remote-handled (RH)-TRU waste and 156,247.12 m^3 for contact-handled (CH)-TRU waste (Wagner 2025).

So that the data reflect the interim state configuration of the WIPP repository in terms of volume, a methodology is implemented through the CID whereby a portion of the inventory is scaled. For the interim state repository configuration, the chosen scaling approach for CH-TRU waste is to scale only the projected (not yet generated) portion of the inventory, while the stored (already generated) and emplaced (already shipped to WIPP or WCS) waste are left intact. For RH-TRU waste, the chosen scaling approach is to scale both the projected and stored portions of the inventory equally, while leaving the emplaced portion intact, owing to the fact that the emplaced and stored portions combined exceed the defined interim state RH-TRU volume limit.

The scaling factors (unitless) calculated by the CID for data version D.23.IS.PA are as follows (rounded to three significant figures):

CH 2023 Interim State Inventory Scaling Factor = 1.11
RH 2023 Interim State Inventory Scaling Factor = 0.587

These scaling factors were then used to scale 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 CH waste stream's scaled mass is calculated by multiplying its projected mass by the CH scaling factor and then adding that to its stored mass as seen in Equation 1 below. The RH waste stream's scaled mass is calculated by multiplying its stored and projected mass by the RH scaling factor as seen in Equation 2 below:

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

Equation 2: RH Scaled Mass = (Stored Mass + Projected Mass) x RH Scaling Factor

In order to most accurately reflect the interim state WIPP repository, the most current inventory data must be applied whenever possible. When the resulting estimates were selected from the previously reported data and current estimates are also being reported, the CH scaled mass is calculated by apportioning stored and projected values by using the CH waste stream's current percentage of projected waste volume (Pct Proj) and then multiplying the projected portion by the appropriate 2023 scaling factor as shown in Equation 3. RH scaled mass is calculated by multiplying the stored and projected mass by the RH scaling factor as shown in Equation 4.

Equation 3: CH Scaled Mass = (Mass x (1 – Pct Proj)) + (Mass x Pct Proj x CH Scaling Factor)
Equation 4: RH Scaled Mass = (Mass x RH 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 2023 Estimated Oxyanions Mass Scaled by Handling

Oxyanion	CH (kg)	RH (kg)	Grand Total (kg)
Nitrate	1.61E+06	1.40E+03	1.61E+06
Phosphate	2.54E+05	2.76E+02	2.54E+05
Sulfate	4.68E+05	1.37E+02	4.68E+05
Grand Total	**2.33E+06**	**1.81E+03**	**2.33E+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 2023 Estimated Complexing Agents Mass Scaled by Handling

Complexing Agent	CH (kg)	RH (kg)	Grand Total (kg)
Acetate	1.58E+04	5.49E+00	1.58E+04
Acetic Acid	1.56E+04	8.37E+00	1.56E+04
Citrate	2.61E+03	5.39E+00	2.62E+03
Citric Acid	8.15E+03	7.35E+00	8.16E+03
EDTA	3.87E+02	5.50E+00	3.92E+02
Oxalate	7.10E+02	5.46E+00	7.15E+02
Oxalic Acid	1.68E+04	7.31E+00	1.68E+04
Grand Total	**6.01E+04**	**4.49E+01**	**6.01E+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 2023 Estimated Cement Mass Scaled by State and Handling

Cement State	CH (kg)	RH (kg)	Grand Total (kg)
Reacted	1.99E+06	4.57E+03	1.99E+06
Unreacted	0.00E+00	0.00E+00	0.00E+00
Both (Reacted and Unreacted)	6.55E+06	8.63E+01	6.55E+06
Grand Total	**8.54E+06**	**4.66E+03**	**8.55E+06**

7.0 REFERENCES

Los Alamos National Laboratory – Carlsbad Operations (LANL-CO). 2023a. LANL-CO Software Quality Assurance Plan, LCO-QPD-02. Los Alamos National Laboratory – Carlsbad Operations, Carlsbad, NM.

Los Alamos National Laboratory – Carlsbad Operations (LANL-CO). 2023b. Software Quality Assurance, LCO-QP19-1. Los Alamos National Laboratory – Carlsbad Operations, Carlsbad, NM.

Los Alamos National Laboratory – Carlsbad Operations (LANL-CO). 2024a. Analyses, LCO-QP9-1. Los Alamos National Laboratory – Carlsbad Operations, Carlsbad, NM.

Los Alamos National Laboratory – Carlsbad Operations (LANL-CO). 2024b. Analysis Plan for Transuranic Waste Inventory, INV-AP-01. Los Alamos National Laboratory – Carlsbad Operations, Carlsbad, NM.

Los Alamos National Laboratory – Carlsbad Operations (LANL-CO). 2025. Comprehensive Inventory Database, version 2.04, Schema Version S.2.04, Data Version D.23.IS.PA. (Data Cutoff Date: December 31, 2023). Los Alamos National Laboratory, Carlsbad Operations, Carlsbad, NM.

U.S. Department of Energy (DOE). 2023. Quality Assurance Program Document, DOE/CBFO-94-1012, Revision 14. Carlsbad Field Office, Carlsbad, NM.

Wagner, S. 2025. Letter to Anderson Ward (Subject: Sandia's WIPP Inventory Needs for Compliance Recertification Application 2026 Interim State Performance Assessment). April 1, 2025. Sandia National Laboratories, Carlsbad, NM.

Ybarra, M. 2022. *Chemical and Cement Components 2021 Inventory Estimates*. INV-SAR-69, Revision 0. Los Alamos National Laboratory - Carlsbad Operations, Carlsbad, NM.

8.0 APPENDICES

Appendix A Comparison of 2023 Inventory Data to 2021 Estimates

Appendix A. Comparison of 2023 Inventory Data to 2021 Estimates

Table A-1 Oxyanions Comparison: 2023 Inventory Data and 2021 Estimates

2023 Reported Oxyanions Mass Unscaled

Waste Stream ID	Crosswalk	Nitrate (kg)	Phosphate (kg)	Sulfate (kg)	Shipped	[1]Case
AE-T001	AE-T001	9.41E+01	4.69E+01	4.70E+01	Y	2
	Shipped				Y	2
AE-T009	AE-T001, AE-T009	1.42E+02	1.42E+02	1.42E+02	Y	2
	Shipped				Y	2
IN-AE-AGHC-02	IN-AE-AGHC-02	8.35E-04	8.35E-01	8.35E-02	N	3
	Shipped				Y	2
	No longer reporting Oxyanions				Y	2
	Shipped				Y	2
	Potentially shipped cement from IN-W208R in 2011				Y	2
	Shipped				Y	2
	Shipped				Y	2
IN-BN510.4	IN-BN510, IN-BN510.1, IN-BN510.2, IN-BN510.3, IN-BN510.4	1.00E+03		1.80E+04	Y	2
IN-BNINW216	IN-BNINW216	3.22E+02	1.56E+00	4.38E+00	Y	2
IN-BNINW218	IN-BNINW218	2.45E+03		6.24E+00	Y	2
IN-ID-ANLE-BIN	IN-ID-ANLE-BIN	2.16E-03	2.16E-03	2.16E-03	N	3
IN-ID-ANLW-W269-RH	IN-ID-ANLW-W269-RH	6.99E-05	6.99E-05	6.99E-05	N	3
IN-ID-BTO-030	IN-ID-BTO-030	5.00E-03	5.00E-03		N	3
IN-ID-HFEF-S3000-RP	IN-ID-HFEF-S3000-RP	1.54E-03	1.54E-03	1.54E-03	N	3
IN-ID-HFEF-S5000-RP	IN-ID-HFEF-S5000-RP	3.09E-03	3.09E-03	3.09E-03	N	3
	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	IN-ID-MISC-RH	9.50E-03	9.50E-03		N	3
	Shipped				Y	2
IN-ID-RF-S5000-RH	IN-ID-RF-S5000-RH			5.50E-03	N	3
IN-ID-Sample Fuel	IN-ID-Sample Fuel	3.75E-04	3.75E-04	7.50E-03	N	3
IN-ID-SDA-Debris	IN-ID-SDA-Debris	1.25E+03	2.50E+00	9.99E+02	Y	2
IN-ID-SDA-Sludge	IN-ID-SDA-Sludge	1.70E+04	1.14E+04	2.27E+04	Y	2
IN-ID-SDA-Soil	IN-ID-SDA-Soil	6.60E+02	3.30E+02	8.25E+02	Y	2
	Shipped				Y	2
LA-CIN01.001	LA-CIN01.001, LA-CIN02.001, LA-MHD01.001, LA-MHD01-Pits, LA-MHD03.001, LA-MIN02-V.001, LA-MIN05-V.001	5.54E+02		1.12E+03	Y	2
	No longer reporting Oxyanions				Y	2
LA-CIN03.001	LA-CIN03.001	1.53E+02		8.74E+00	Y	2
LA-CIN04.001	New Waste Stream, LA-TA-21-13, LA-TA-21-16	1.77E+05		2.81E+04	N	1
LA-MHD01-Pits	LA-MHD01-Pits	2.83E+02		2.48E+02	N	3
LA-MHD01.001	LA-CIN01.001, LA-MHD01.001, LA-MHD01-Pits	6.85E+02		5.98E+02	Y	2
LA-MHD03.001	LA-MHD03.001	2.34E+02		1.48E+02	Y	2
	No longer reporting Oxyanions				Y	2
	No longer reporting Oxyanions				Y	2
LA-MIN02-V.001	LA-MIN02-V.001	3.76E+02		1.62E+00	Y	2
	No longer reporting Oxyanions				Y	2
LA-MIN05-V.001	LA-MIN05-V.001	4.24E+00			Y	2
LA-MIN06-NS.001	LA-MHD01.001, LA-MIN06-NS.001	8.17E+01			Y	2
LA-TA-21-13	LA-TA-21-13	2.95E+03		4.69E+02	N	3
LA-TA-21-15	LA-TA-21-15	1.21E+02		2.35E+01	N	3
LA-TA-21-16	LA-TA-21-16	1.06E+03		9.91E+02	N	3
LB-T001	LB-T001	1.20E-01			Y	2
	No longer reporting Oxyanions				Y	2
LL-M001	LL-M001	2.12E+00	2.12E+00	2.12E+00	Y	2
LL-W018-S5100	LL-W018-S5100	5.69E-01	5.69E-01	5.69E-01	N	3
LL-W019	LL-W019	4.86E-01	4.86E-01	4.86E-01	Y	2
OR-CHEM-CH-HET	OR-CHEM-CH-HET, OR-CHEM-RH-HET	8.75E-02	8.75E-02	8.75E-02	Y	2
OR-CHEM-RH-HET	OR-CHEM-RH-HET	1.38E-02	1.38E-02	1.38E-02	N	3

2021 Estimated Oxyanions Mass Unscaled

Waste Stream ID	Nitrate (kg)	Phosphate (kg)	Sulfate (kg)
AE-T001	4.30E+02	2.15E+02	2.15E+02
AE-T003	1.08E+00	2.98E-01	4.59E-01
AE-T009	2.18E+02	2.18E+02	2.18E+02
IN-AE-AGHC-01	5.45E-03	5.45E-03	5.45E-03
IN-AE-AGHC-02	8.35E-04	8.35E-01	8.35E-02
IN-AW-161	1.27E-03	1.27E-03	1.27E-03
IN-BN004		5.14E+03	5.14E+03
IN-BN510	2.78E-01		5.01E+00
IN-BN510.1	5.97E+00		1.07E+02
IN-BN510.2	3.43E+00		6.17E+01
IN-BN510.3	1.13E+02		2.03E+03
IN-BN510.4	1.20E+03		2.16E+04
IN-BNINW216	6.60E+05	7.99E+00	9.24E+03
IN-BNINW218	1.89E+05		1.31E+03
IN-ID-ANLE-BIN	2.16E-03	2.16E-03	2.16E-03
IN-ID-ANLW-W269-RH	6.99E-05	6.99E-05	6.99E-05
IN-ID-BTO-030	5.00E-03	5.00E-03	
IN-ID-HFEF-S3000-RP	1.54E-03	1.54E-03	1.54E-03
IN-ID-HFEF-S5000-RP	3.09E-03	3.09E-03	3.09E-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-MISC-RH	9.50E-03	9.50E-03	
IN-ID-RF-S3150-A			5.40E+02
IN-ID-RF-S5000-RH			5.50E-03
IN-ID-Sample Fuel	3.75E-04	3.75E-04	7.50E-03
IN-ID-SDA-Debris	8.10E+04	2.08E+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	1.26E+03		2.55E+03
LA-CIN02.001	4.88E+02		7.76E+01
LA-CIN03.001	8.21E+02		1.31E+02
LA-MHD01-Pits	3.47E+02		3.03E+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	8.07E+03		3.49E+01
LA-MIN03-NC.001	1.43E+04		1.34E+04
LA-MIN05-V.001	1.47E+01		
LA-MIN06-NS.001	6.54E+02		
LA-TA-21-13	2.01E+05		3.20E+04
LA-TA-21-15	1.21E+02		2.35E+01
LA-TA-21-16	1.08E+03		1.00E+03
LB-T001	1.20E-01	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	5.69E-01	5.69E-01	5.69E-01
LL-W019	7.32E-01	7.32E-01	7.32E-01
OR-CHEM-CH-HET	2.43E-01	2.43E-01	2.43E-01
OR-CHEM-RH-HET	1.38E-02	1.38E-02	1.38E-02

2023 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	26.2%
AE-T003	1.08E+00	2.98E-01	4.59E-01	0.0%
AE-T009	2.18E+02	2.18E+02	2.18E+02	39.7%
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-BN510	2.78E-01		5.01E+00	0.0%
IN-BN510.1	5.97E+00		1.07E+02	0.0%
IN-BN510.2	3.43E+00		6.17E+01	0.0%
IN-BN510.3	1.13E+02		2.03E+03	0.0%
IN-BN510.4	1.20E+03		2.16E+04	0.0%
IN-BNINW216	6.60E+05	7.99E+00	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	2.50E+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%
LA-CIN01.001	1.26E+03		2.55E+03	38.3%
LA-CIN02.001	4.88E+02		7.76E+01	0.0%
LA-CIN03.001	8.21E+02		1.31E+02	0.0%
LA-CIN04.001	1.77E+05		2.81E+04	0.0%
LA-MHD01-Pits	2.83E+02		2.48E+02	100.0%
LA-MHD01.001	1.01E+05		1.96E+04	96.1%
LA-MHD03.001	3.47E+02		3.23E+02	90.9%
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-MIN05-V.001	1.47E+01			0.0%
LA-MIN06-NS.001	6.54E+02			0.0%
LA-TA-21-13	2.95E+03		4.69E+02	0.0%
LA-TA-21-15	1.21E+02		2.35E+01	0.0%
LA-TA-21-16	1.06E+03		9.91E+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	93.9%
LL-W018-S5100	5.69E-01	5.69E-01	5.69E-01	0.0%
LL-W019	7.32E-01	7.32E-01	7.32E-01	84.8%
OR-CHEM-CH-HET	2.43E-01	2.43E-01	2.43E-01	0.0%
OR-CHEM-RH-HET	1.38E-02	1.38E-02	1.38E-02	0.0%

2023 Estimated Oxyanions Mass Scaled

Waste Stream ID	Nitrate (kg)	Phosphate (kg)	Sulfate (kg)	Handling
AE-T001	4.42E+02	2.21E+02	2.21E+02	CH
AE-T003	1.08E+00	2.98E-01	4.59E-01	CH
AE-T009	1.28E+02	1.28E+02	1.28E+02	RH
IN-AE-AGHC-01	5.45E-03	5.45E-03	5.45E-03	RH
IN-AE-AGHC-02	4.90E-04	4.90E-01	4.90E-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-BN510	2.78E-01		5.01E+00	CH
IN-BN510.1	5.97E+00		1.07E+02	CH
IN-BN510.2	3.43E+00		6.17E+01	CH
IN-BN510.3	1.13E+02		2.03E+03	CH
IN-BN510.4	1.20E+03		2.16E+04	CH
IN-BNINW216	6.60E+05	7.99E+00	9.24E+03	CH
IN-BNINW218	1.89E+05		1.31E+03	CH
IN-ID-ANLE-BIN	1.27E-03	1.27E-03	1.27E-03	RH
IN-ID-ANLW-W269-RH	4.10E-05	4.10E-05	4.10E-05	RH
IN-ID-BTO-030	2.94E-03	2.94E-03		RH
IN-ID-HFEF-S3000-RP	9.06E-04	9.06E-04	9.06E-04	RH
IN-ID-HFEF-S5000-RP	1.81E-03	1.81E-03	1.81E-03	RH
IN-ID-INL-152	5.06E-04	5.06E-04	5.06E-04	RH
IN-ID-INL-152M	9.02E-03	9.02E-03	9.02E-03	RH
IN-ID-MFC-SOLID	3.73E-05	3.73E-05	3.73E-05	RH
IN-ID-MISC-RH	5.58E-03	5.58E-03		RH
IN-ID-RF-S3150-A			5.40E+02	CH
IN-ID-RF-S5000-RH			3.23E-03	RH
IN-ID-Sample Fuel	2.20E-04	2.20E-04	4.40E-03	RH
IN-ID-SDA-Debris	8.10E+04	2.50E+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
LA-CIN01.001	1.31E+03		2.66E+03	CH
LA-CIN02.001	4.88E+02		7.76E+01	CH
LA-CIN03.001	8.21E+02		1.31E+02	CH
LA-CIN04.001	1.77E+05		2.81E+04	CH
LA-MHD01-Pits	3.15E+02		2.75E+02	CH
LA-MHD01.001	1.12E+05		2.16E+04	CH
LA-MHD03.001	3.82E+02		3.55E+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-MIN05-V.001	1.47E+01			CH
LA-MIN06-NS.001	6.54E+02			CH
LA-TA-21-13	2.95E+03		4.69E+02	CH
LA-TA-21-15	1.21E+02		2.35E+01	CH
LA-TA-21-16	1.06E+03		9.91E+02	CH
LB-T001	1.27E-01	1.97E-02	3.66E-04	CH
LB-T002	5.25E-03	6.20E-04		CH
LL-M001	3.59E+00	3.59E+00	3.59E+00	CH
LL-W018-S5100	5.69E-01	5.69E-01	5.69E-01	CH
LL-W019	8.00E-01	8.00E-01	8.00E-01	CH
OR-CHEM-CH-HET	2.43E-01	2.43E-01	2.43E-01	CH
OR-CHEM-RH-HET	8.09E-03	8.09E-03	8.09E-03	RH

2023 Reported Oxyanions Mass Unscaled

Waste Stream ID	Crosswalk	Nitrate (kg)	Phosphate (kg)	Sulfate (kg)	Shipped	[1]Case
OR-CRF-CH-HET	OR-CRF-CH-HET	3.56E-02	3.56E-02	3.56E-02	N	3
OR-GENR-CH-HET	OR-GENR-CH-HET, OR-GENR-RH-HET	6.85E-02	6.85E-02	6.85E-02	Y	2
	No longer reporting Oxyanions				N	5
OR-GRSC-CH-HET	New Waste Stream, OR-GRSC-RH-HOM	1.31E-02	1.31E-02	1.31E-02	N	1
OR-GRSC-RH-HOM	OR-GRSC-RH-HOM	1.52E-02	1.52E-02	1.52E-02	N	3
OR-IFEL-CH-HET	OR-IFEL-CH-HET	7.77E-02	7.77E-02	7.77E-02	N	3
OR-ISTP-CH-HET	OR-ISTP-CH-HET	2.89E-01	2.89E-01	2.89E-01	Y	2
OR-ISTP-RH-HET	OR-ISTP-RH-HET	1.19E-02	1.19E-02	1.19E-02	N	3
OR-LWT-CH-HET	OR-LWT-CH-HET	1.43E-02	1.43E-02	1.43E-02	Y	2
OR-MRF-CH-HET	OR-MRF-CH-HET	1.20E-01	1.20E-01	1.20E-01	N	3
OR-MRF-RH-HET	OR-MRF-RH-HET	2.94E-02	2.94E-02	2.94E-02	N	3
OR-MSRE-CH-HET	New Waste Stream, OR-TBD-CH-HET	4.99E-02	4.99E-02	4.99E-02	N	1
OR-MSRE-RH-HET	New Waste Stream, OR-TBD-RH-HET	2.68E-02	2.68E-02	2.68E-02	N	1
OR-NBL-CH-HET	OR-NBL-CH-HET	4.61E-02	4.61E-02	4.61E-02	Y	2
OR-NFS-CH-HET-A	OR-NFS-CH-HET-A	1.16E+00	1.16E+00	1.16E+00	Y	2
OR-PGDP-CH-HET	OR-PGDP-CH-HET	1.66E-01	1.66E-01	1.66E-01	N	3
OR-PUBE-CH-HOM	OR-PUBE-CH-HOM	1.10E-03	1.10E-03	1.10E-03	N	3
OR-RADP-CH-HET	OR-RADP-CH-HET	7.38E-02	7.38E-02	7.38E-02	Y	2
OR-RADP-RH-HET	OR-RADP-RH-HET	2.20E-02	2.20E-02	2.20E-02	N	3
OR-REDC-CH-HET	OR-REDC-CH-HET	4.15E+00	4.15E+00	4.15E+00	Y	2
OR-REDC-RH-HET	OR-REDC-RH-HET	4.05E+00	4.05E+00	4.05E+00	Y	2
OR-RF-CH-HET	OR-RF-CH-HET	9.17E-02	9.17E-02	9.17E-02	Y	2
OR-RF-RH-HET	OR-RF-RH-HET	4.88E+00	4.88E+00	4.88E+00	N	3
OR-RF-RH-HET-A	New Waste Stream, OR-RF-CH-HET	1.12E-02	1.12E-02	1.12E-02	N	1
OR-SOURCE-CH-HET	OR-SOURCE-CH-HET	1.09E-01	1.09E-01	1.09E-01	N	3
OR-SWSA-CH-HET	OR-SWSA-CH-HET	6.66E-03	6.66E-03	6.66E-03	N	3
OR-SWSA-CH-SOIL	OR-SWSA-CH-SOIL	9.98E-02	9.98E-02	9.98E-02	N	3
	No longer reporting Oxyanions				N	5
	No longer reporting Oxyanions				N	5
OR-TDYN-CH-HET	New Waste Stream, OR-TBD-CH-HET	6.66E-03	6.66E-03	6.66E-03	N	1
OR-WC14-RH-HET	OR-WC14-RH-HET	8.91E-03	8.91E-03	8.91E-03	N	3
	No longer reporting Oxyanions				N	5
RL200-01	RL200-01	2.44E+03	2.35E+03		N	3
RL200-02	RL200-02	4.20E+03	1.99E+03	1.79E+03	N	3
RL201-03	RL201-03			2.12E+00	N	3
RL202S-01	RL202S-01	1.65E+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	RL221U-08	1.89E+03		5.32E+00	N	3
RL222S-01	RL222S-01	2.76E+02	4.11E+02	3.85E+01	N	3
RL231Z-01	RL231Z-01	3.94E+01	2.86E+03	5.08E+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	1.24E+01	1.40E+00	5.60E+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	8.57E+02	3.06E+02	4.46E+02	Y	2
RL325-03	RL325-03	6.95E+02	5.47E+00	4.48E+01	N	3
RL325-08	RL325-08	1.95E+02	4.38E+00		N	3
RL325-09	RL325-09	6.62E+00		5.10E-03	N	3
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
RLCFF-01	RLCFF-01			2.60E-03	N	3

2021 Estimated Oxyanions Mass Unscaled

Waste Stream ID	Nitrate (kg)	Phosphate (kg)	Sulfate (kg)
OR-CRF-CH-HET	4.11E-02	4.11E-02	4.11E-02
OR-GENR-CH-HET	2.05E-01	2.05E-01	2.05E-01
OR-GENR-RH-HET	2.75E-03	2.75E-03	2.75E-03
OR-GRSC-RH-HOM	2.82E-02	2.82E-02	2.82E-02
OR-IFEL-CH-HET	7.07E-02	7.07E-02	7.07E-02
OR-ISTP-CH-HET	1.15E+00	1.15E+00	1.15E+00
OR-ISTP-RH-HET	2.99E-02	2.99E-02	2.99E-02
OR-LWT-CH-HET	1.71E-02	1.71E-02	1.71E-02
OR-MRF-CH-HET	1.20E-01	1.20E-01	1.20E-01
OR-MRF-RH-HET	2.94E-02	2.94E-02	2.94E-02
OR-NBL-CH-HET	1.15E-01	1.15E-01	1.15E-01
OR-NFS-CH-HET-A	2.28E+00	2.28E+00	2.28E+00
OR-PGDP-CH-HET	1.50E-01	1.50E-01	1.50E-01
OR-PUBE-CH-HOM	1.10E-03	1.10E-03	1.10E-03
OR-RADP-CH-HET	2.83E-01	2.83E-01	2.83E-01
OR-RADP-RH-HET	1.10E-02	1.10E-02	1.10E-02
OR-REDC-CH-HET	5.32E+00	5.32E+00	5.32E+00
OR-REDC-RH-HET	4.10E+00	4.10E+00	4.10E+00
OR-RF-CH-HET	7.07E-01	7.07E-01	7.07E-01
OR-RF-RH-HET	2.47E+00	2.47E+00	2.47E+00
OR-SOURCE-CH-HET	8.37E-02	8.37E-02	8.37E-02
OR-SWSA-CH-HET	6.66E-03	6.66E-03	6.66E-03
OR-SWSA-CH-SOIL	9.98E-02	9.98E-02	9.98E-02
OR-TBD-CH-HET	1.72E-01	1.72E-01	1.72E-01
OR-TBD-RH-HET	1.02E+00	1.02E+00	1.02E+00
OR-WC14-RH-HET	8.91E-03	8.91E-03	8.91E-03
OR-Y12-CH-HET	3.14E-03	3.14E-03	3.14E-03
RL200-01	2.44E+03	2.35E+03	
RL200-02	6.52E+04	8.58E+04	8.57E+03
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-08	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	5.60E+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	1.69E+02		
RL325-08	4.31E-01	2.59E-01	
RL325-09	1.09E+00		2.10E-03
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
RLCFF-01			2.60E-03

2023 Estimated Oxyanions Mass Unscaled

Waste Stream ID	Nitrate (kg)	Phosphate (kg)	Sulfate (kg)	Pct Proj (%)
OR-CRF-CH-HET	3.56E-02	3.56E-02	3.56E-02	0.0%
OR-GENR-CH-HET	2.05E-01	2.05E-01	2.05E-01	0.0%
OR-GRSC-CH-HET	1.31E-02	1.31E-02	1.31E-02	0.0%
OR-GRSC-RH-HOM	1.52E-02	1.52E-02	1.52E-02	0.0%
OR-IFEL-CH-HET	7.77E-02	7.77E-02	7.77E-02	0.0%
OR-ISTP-CH-HET	1.15E+00	1.15E+00	1.15E+00	0.0%
OR-ISTP-RH-HET	1.19E-02	1.19E-02	1.19E-02	0.0%
OR-LWT-CH-HET	1.71E-02	1.71E-02	1.71E-02	0.0%
OR-MRF-CH-HET	1.20E-01	1.20E-01	1.20E-01	0.0%
OR-MRF-RH-HET	2.94E-02	2.94E-02	2.94E-02	0.0%
OR-MSRE-CH-HET	4.99E-02	4.99E-02	4.99E-02	0.0%
OR-MSRE-RH-HET	2.68E-02	2.68E-02	2.68E-02	0.0%
OR-NBL-CH-HET	1.15E-01	1.15E-01	1.15E-01	0.0%
OR-NFS-CH-HET-A	2.28E+00	2.28E+00	2.28E+00	0.0%
OR-PGDP-CH-HET	1.66E-01	1.66E-01	1.66E-01	0.0%
OR-PUBE-CH-HOM	1.10E-03	1.10E-03	1.10E-03	0.0%
OR-RADP-CH-HET	2.83E-01	2.83E-01	2.83E-01	0.0%
OR-RADP-RH-HET	2.20E-02	2.20E-02	2.20E-02	0.0%
OR-REDC-CH-HET	5.32E+00	5.32E+00	5.32E+00	88.7%
OR-REDC-RH-HET	4.10E+00	4.10E+00	4.10E+00	84.8%
OR-RF-CH-HET	7.07E-01	7.07E-01	7.07E-01	0.0%
OR-RF-RH-HET	4.88E+00	4.88E+00	4.88E+00	88.7%
OR-RF-RH-HET-A	1.12E-02	1.12E-02	1.12E-02	0.0%
OR-SOURCE-CH-HET	1.09E-01	1.09E-01	1.09E-01	0.0%
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-TDYN-CH-HET	6.66E-03	6.66E-03	6.66E-03	0.0%
OR-WC14-RH-HET	8.91E-03	8.91E-03	8.91E-03	0.0%
RL200-01	2.44E+03	2.35E+03		89.6%
RL200-02	4.20E+03	1.99E+03	1.79E+03	99.9%
RL201-03			2.12E+00	0.0%
RL202S-01	1.65E+01			97.3%
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	2.76E+02	4.11E+02	3.85E+01	51.1%
RL231Z-01	4.18E+01	3.03E+03	5.39E+03	5.9%
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	5.60E+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	24.7%
RL325-03	6.95E+02	5.47E+00	4.48E+01	41.1%
RL325-08	1.95E+02	4.38E+00		47.9%
RL325-09	6.62E+00		5.10E-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%
RLCFF-01			2.60E-03	0.0%

2023 Estimated Oxyanions Mass Scaled

Waste Stream ID	Nitrate (kg)	Phosphate (kg)	Sulfate (kg)	Handling
OR-CRF-CH-HET	3.56E-02	3.56E-02	3.56E-02	CH
OR-GENR-CH-HET	2.05E-01	2.05E-01	2.05E-01	CH
OR-GRSC-CH-HET	1.31E-02	1.31E-02	1.31E-02	CH
OR-GRSC-RH-HOM	8.95E-03	8.95E-03	8.95E-03	RH
OR-IFEL-CH-HET	7.77E-02	7.77E-02	7.77E-02	CH
OR-ISTP-CH-HET	1.15E+00	1.15E+00	1.15E+00	CH
OR-ISTP-RH-HET	7.00E-03	7.00E-03	7.00E-03	RH
OR-LWT-CH-HET	1.71E-02	1.71E-02	1.71E-02	CH
OR-MRF-CH-HET	1.20E-01	1.20E-01	1.20E-01	CH
OR-MRF-RH-HET	1.72E-02	1.72E-02	1.72E-02	RH
OR-MSRE-CH-HET	4.99E-02	4.99E-02	4.99E-02	CH
OR-MSRE-RH-HET	1.58E-02	1.58E-02	1.58E-02	RH
OR-NBL-CH-HET	1.15E-01	1.15E-01	1.15E-01	CH
OR-NFS-CH-HET-A	2.28E+00	2.28E+00	2.28E+00	CH
OR-PGDP-CH-HET	1.66E-01	1.66E-01	1.66E-01	CH
OR-PUBE-CH-HOM	1.10E-03	1.10E-03	1.10E-03	CH
OR-RADP-CH-HET	2.83E-01	2.83E-01	2.83E-01	CH
OR-RADP-RH-HET	1.29E-02	1.29E-02	1.29E-02	RH
OR-REDC-CH-HET	5.84E+00	5.84E+00	5.84E+00	CH
OR-REDC-RH-HET	2.41E+00	2.41E+00	2.41E+00	RH
OR-RF-CH-HET	7.07E-01	7.07E-01	7.07E-01	CH
OR-RF-RH-HET	2.86E+00	2.86E+00	2.86E+00	RH
OR-RF-RH-HET-A	6.59E-03	6.59E-03	6.59E-03	RH
OR-SOURCE-CH-HET	1.09E-01	1.09E-01	1.09E-01	CH
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-TDYN-CH-HET	6.66E-03	6.66E-03	6.66E-03	CH
OR-WC14-RH-HET	5.23E-03	5.23E-03	5.23E-03	RH
RL200-01	2.68E+03	2.58E+03		CH
RL200-02	4.66E+03	2.20E+03	1.98E+03	CH
RL201-03			2.12E+00	CH
RL202S-01	1.82E+01			CH
RL209E-01	5.53E+02	1.67E+02	1.32E+03	CH
RL209E-08	5.06E-02		7.23E-03	RH
RL216Z-02	1.57E+03	1.75E+03	7.03E+01	CH
RL221U-03		1.97E-03		CH
RL221U-08	1.11E+03		3.12E+00	RH
RL222S-01	2.92E+02	4.36E+02	4.08E+01	CH
RL231Z-01	4.20E+01	3.05E+03	5.42E+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	5.60E+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	1.66E+04	4.71E+03	1.26E+04	CH
RL325-03	7.28E+02	5.73E+00	4.69E+01	CH
RL325-08	1.15E+02	2.57E+00		RH
RL325-09	3.88E+00		2.99E-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	8.83E-06		3.62E-03	RH
RLCFF-01			2.60E-03	CH

2023 Reported Oxyanions Mass Unscaled

Waste Stream ID	Crosswalk	Nitrate (kg)	Phosphate (kg)	Sulfate (kg)	Shipped	[1]Case
RLESG-01	RLESG-01	1.76E+00	1.11E+02	4.12E+03	Y	2
RLESG-08	RLESG-08, RLESG-09	2.10E+00			N	3
RLESG-09	RLESG-09	9.50E-01	1.72E+02		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	1.70E+01	7.15E+00	1.03E+01	N	3
RLPFP-01	RLPFP-01	5.89E+04	6.24E+04	2.33E+03	Y	2
RLPFP-01A	RLPFP-01A	1.24E+02	1.22E+02	4.72E-01	N	3
RLPFP-03	RLPFP-03	1.75E+03	1.12E+02		N	3
RLPFP-04	RLPFP-04	1.75E-02	1.49E-01		N	3
	Shipped				Y	2
RLPFP-08	RLPFP-08	5.46E+01	6.51E+01	5.04E-01	N	3
RLPURX-01	RLPURX-01	1.57E+01			Y	2
RLSWO-01	RLSWO-01	2.46E+00	1.98E+01	5.87E-01	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	SA-W134	1.00E-09			Y	2
SA-W135	SA-W135	1.00E-09			Y	2
SA-W137	SA-W137	1.00E-06			N	3
SR-CH-PP	SR-CH-PP	1.85E+03		1.62E+03	N	3
	Shipped				Y	2

2021 Estimated Oxyanions Mass Unscaled

Waste Stream ID	Nitrate (kg)	Phosphate (kg)	Sulfate (kg)
RLESG-01	1.80E+00	1.14E+02	4.21E+03
RLESG-08	1.80E+00		
RLESG-09	1.62E+00	2.16E+02	
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	1.70E+01	7.15E+00	1.03E+01
RLPFP-01	1.28E+05	1.26E+05	5.47E+03
RLPFP-01A	1.24E+02	1.22E+02	4.72E-01
RLPFP-03	1.75E+03	1.12E+02	
RLPFP-04	1.75E-02	1.49E-01	
RLPFP-05	4.24E+04	4.18E+04	1.82E+03
RLPFP-08	5.46E+01	6.51E+01	5.04E-01
RLPURX-01	3.89E+01		
RLSWO-01	3.75E+01	4.57E+02	7.32E+00
RLWAR-01	1.20E+04		2.06E+03
RLWAR-03	3.67E-01		6.12E-02
SA-W134	1.00E-09		
SA-W135	1.00E-09		
SA-W137	1.00E-06		
SR-CH-PP	1.85E+03		1.62E+03
RF Total	9.31E+03	8.50E+01	5.52E+04

2023 Estimated Oxyanions Mass Unscaled

Waste Stream ID	Nitrate (kg)	Phosphate (kg)	Sulfate (kg)	Pct Proj (%)
RLESG-01	1.80E+00	1.14E+02	4.21E+03	0.0%
RLESG-08	2.10E+00			0.0%
RLESG-09	9.50E-01	1.72E+02		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	1.70E+01	7.15E+00	1.03E+01	0.0%
RLPFP-01	1.28E+05	1.26E+05	5.47E+03	0.0%
RLPFP-01A	1.24E+02	1.22E+02	4.72E-01	0.0%
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	0.0%
RLPFP-08	5.46E+01	6.51E+01	5.04E-01	0.0%
RLPURX-01	3.89E+01			0.0%
RLSWO-01	3.75E+01	4.57E+02	7.32E+00	17.1%
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%
SR-CH-PP	1.85E+03		1.62E+03	100.0%
RF Total	9.31E+03	8.50E+01	5.52E+04	0.0%

2023 Estimated Oxyanions Mass Scaled

Waste Stream ID	Nitrate (kg)	Phosphate (kg)	Sulfate (kg)	Handling
RLESG-01	1.80E+00	1.14E+02	4.21E+03	CH
RLESG-08	1.23E+00			RH
RLESG-09	5.58E-01	1.01E+02		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	1.70E+01	7.15E+00	1.03E+01	CH
RLPFP-01	1.28E+05	1.26E+05	5.47E+03	CH
RLPFP-01A	1.24E+02	1.22E+02	4.72E-01	CH
RLPFP-03	1.75E+03	1.12E+02		CH
RLPFP-04	1.75E-02	1.49E-01		CH
RLPFP-05	4.24E+04	4.18E+04	1.82E+03	CH
RLPFP-08	3.21E+01	3.82E+01	2.96E-01	RH
RLPURX-01	3.89E+01			CH
RLSWO-01	3.82E+01	4.65E+02	7.46E+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	5.87E-10			RH
SA-W137	1.00E-06			CH
SR-CH-PP	2.06E+03		1.80E+03	CH
RF Total	9.31E+03	8.50E+01	5.52E+04	CH

2023 Reported Oxyanions Mass Unscaled Totals

Site ID (Handling)	TRU Waste Generator Site	Nitrate (kg)	Phosphate (kg)	Sulfate (kg)
AE Total (CH)	Argonne National Laboratory	9.41E+01	4.69E+01	4.70E+01
AE Total (RH)	Argonne National Laboratory	1.42E+02	1.42E+02	1.42E+02
IN Total (CH)	Idaho National Laboratory	2.27E+04	1.17E+04	4.26E+04
IN Total (RH)	Idaho National Laboratory	3.10E-02	8.65E-01	1.12E-01
LA Total (CH)	Los Alamos National Laboratory	1.83E+05	0.00E+00	3.17E+04
LB Total (CH)	Lawrence Berkeley National Laboratory	1.20E-01	0.00E+00	0.00E+00
LL Total (CH)	Lawrence Livermore National Laboratory	3.17E+00	3.17E+00	3.17E+00
OR Total (CH)	Oak Ridge National Laboratory	6.67E+00	6.67E+00	6.67E+00
OR Total (RH)	Oak Ridge National Laboratory	9.07E+00	9.07E+00	9.07E+00
RF Total (CH)	Rocky Flats Environmental Technology Site	0.00E+00	0.00E+00	0.00E+00
RL Total (CH)	Hanford (Richland) Site	7.47E+04	7.27E+04	1.81E+04
RL Total (RH)	Hanford (Richland) Site	2.15E+03	2.41E+02	5.85E+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
SR Total (CH)	Savannah River Site	1.85E+03	0.00E+00	1.62E+03
CH TOTAL		**2.83E+05**	**8.45E+04**	**9.41E+04**
RH TOTAL		**2.30E+03**	**3.94E+02**	**1.57E+02**
GRAND TOTAL		**2.85E+05**	**8.49E+04**	**9.42E+04**

2021 Estimated Oxyanions Unscaled Totals

Site ID (Handling)	Nitrate (kg)	Phosphate (kg)	Sulfate (kg)
AE Total (CH)	4.31E+02	2.15E+02	2.15E+02
AE Total (RH)	2.18E+02	2.18E+02	2.18E+02
IN Total (CH)	1.06E+06	7.02E+04	3.03E+05
IN Total (RH)	8.96E-02	8.79E-01	1.26E-01
LA Total (CH)	3.34E+05	0.00E+00	7.01E+04
LB Total (CH)	1.25E-01	2.04E-02	3.66E-04
LL Total (CH)	4.55E+00	4.55E+00	4.55E+00
OR Total (CH)	1.11E+01	1.11E+01	1.11E+01
OR Total (RH)	7.72E+00	7.72E+00	7.72E+00
RF Total (CH)	9.31E+03	8.50E+01	5.52E+04
RL Total (CH)	2.71E+05	2.67E+05	4.46E+04
RL Total (RH)	1.95E+03	2.82E+02	5.84E+00
SA Total (CH)	1.00E-06	0.00E+00	0.00E+00
SA Total (RH)	1.00E-09	0.00E+00	0.00E+00
SR Total (CH)	1.85E+03	0.00E+00	1.62E+03
CH TOTAL	**1.68E+06**	**3.37E+05**	**4.75E+05**
RH TOTAL	**2.18E+03**	**5.08E+02**	**2.32E+02**
GRAND TOTAL	**1.68E+06**	**3.38E+05**	**4.75E+05**

2023 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	3.03E+05	1.43E+06
IN Total (RH)	8.96E-02	8.79E-01	1.26E-01	1.09E+00
LA Total (CH)	3.12E+05	0.00E+00	6.66E+04	3.79E+05
LB Total (CH)	1.25E-01	2.04E-02	3.66E-04	1.46E-01
LL Total (CH)	4.55E+00	4.55E+00	4.55E+00	1.37E+01
OR Total (CH)	1.10E+01	1.10E+01	1.10E+01	3.30E+01
OR Total (RH)	9.12E+00	9.12E+00	9.12E+00	2.74E+01
RF Total (CH)	9.31E+03	8.50E+01	5.52E+04	6.46E+04
RL Total (CH)	2.11E+05	1.83E+05	3.79E+04	4.32E+05
RL Total (RH)	2.15E+03	2.41E+02	5.85E+00	2.40E+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
SR Total (CH)	1.85E+03	0.00E+00	1.62E+03	3.47E+03
CH TOTAL	**1.59E+06**	**2.53E+05**	**4.65E+05**	**2.31E+06**
RH TOTAL	**2.38E+03**	**4.69E+02**	**2.33E+02**	**3.08E+03**
GRAND TOTAL	**1.60E+06**	**2.54E+05**	**4.65E+05**	**2.32E+06**

2023 Estimated Oxyanions Mass Scaled Totals

Site ID (Handling)	Nitrate (kg)	Phosphate (kg)	Sulfate (kg)	Total (kg)
AE Total (CH)	4.43E+02	2.21E+02	2.22E+02	8.86E+02
AE Total (RH)	1.28E+02	1.28E+02	1.28E+02	3.84E+02
IN Total (CH)	1.06E+06	7.02E+04	3.03E+05	1.43E+06
IN Total (RH)	7.39E-02	5.19E-01	7.70E-02	6.70E-01
LA Total (CH)	3.23E+05	0.00E+00	6.88E+04	3.92E+05
LB Total (CH)	1.32E-01	2.04E-02	3.66E-04	1.53E-01
LL Total (CH)	4.96E+00	4.96E+00	4.96E+00	1.49E+01
OR Total (CH)	1.15E+01	1.15E+01	1.15E+01	3.46E+01
OR Total (RH)	5.35E+00	5.35E+00	5.35E+00	1.61E+01
RF Total (CH)	9.31E+03	8.50E+01	5.52E+04	6.46E+04
RL Total (CH)	2.12E+05	1.84E+05	3.85E+04	4.34E+05
RL Total (RH)	1.26E+03	1.42E+02	3.43E+00	1.41E+03
SA Total (CH)	1.00E-06	0.00E+00	0.00E+00	1.00E-06
SA Total (RH)	5.87E-10	0.00E+00	0.00E+00	5.87E-10
SR Total (CH)	2.06E+03	0.00E+00	1.80E+03	3.85E+03
CH TOTAL	**1.61E+06**	**2.54E+05**	**4.68E+05**	**2.33E+06**
RH TOTAL	**1.40E+03**	**2.76E+02**	**1.37E+02**	**1.81E+03**
GRAND TOTAL	**1.61E+06**	**2.54E+05**	**4.68E+05**	**2.33E+06**

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

Table A-2 Complexing Agents Comparison: 2023 Inventory Data and 2021 Estimates

2023 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	AE-T001		5.80E-02		5.80E-02	5.80E-02	5.80E-02	5.80E-02	Y	2
	Shipped								Y	2
AE-T009	AE-T001, AE-T009		1.05E-01		1.05E-01	1.05E-01	1.05E-01	1.05E-01	Y	2
	Shipped								Y	2
	Shipped								Y	2
	Shipped								Y	2
IN-AE-AGHC-02	IN-AE-AGHC-02		8.35E-04		8.35E-04			8.35E-04	N	3
	Shipped								Y	2
	No longer reporting Complexing Agents								Y	2
	No longer reporting Complexing Agents								Y	2
IN-ID-ANLE-BIN	IN-ID-ANLE-BIN	2.16E-03	4.32E-02		4.32E-02	2.16E-03	2.16E-03	4.32E-02	N	3
IN-ID-ANLW-W269-RH	IN-ID-ANLW-W269-RH	6.99E-04	6.99E-05	6.99E-04	6.99E-04	6.99E-05		6.99E-05	N	3
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	IN-ID-HFEF-S3000-RP	1.54E-03	1.54E-03	1.54E-03		1.54E-03		1.54E-03	N	3
IN-ID-HFEF-S5000-RP	IN-ID-HFEF-S5000-RP	3.09E-03	3.09E-03	3.09E-03		3.09E-03		3.09E-03	N	3
	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	IN-ID-MISC-RH	9.50E-04	9.50E-03	9.50E-04		9.50E-04		9.50E-04	N	3
IN-ID-RF-S5000-RH	IN-ID-RF-S5000-RH		5.50E-02		5.50E-02				N	3
	Shipped								Y	2
IN-ID-Sample Fuel	IN-ID-Sample Fuel	6.25E-02	7.50E-03	6.25E-03		3.13E-02		7.50E-03	N	3
IN-ID-SDA-Debris	IN-ID-SDA-Debris		2.50E+02		2.50E-01	3.75E-01		6.24E-01	Y	2
IN-ID-SDA-Sludge	IN-ID-SDA-Sludge		8.52E+02		1.70E+00	8.52E-01		1.14E+01	Y	2
IN-ID-SDA-Soil	IN-ID-SDA-Soil		3.30E+01		1.65E-02	1.65E-02		6.60E-01	Y	2
	Shipped								Y	2
LA-CIN01.001	LA-CIN01.001, LA-CIN02.001, LA-MHD01.001, LA-MHD01-Pits, LA-MHD03.001, LA-MIN02-V.001				6.37E+01				Y	2
	No longer reporting Complexing Agents								Y	2
LA-CIN03.001	LA-CIN03.001				5.55E-01				Y	2
LA-MHD01.001	LA-CIN01.001, LA-MHD01.001, LA-MHD01-Pits				5.98E+02				Y	2
LA-MHD01-Pits	LA-MHD01-Pits				2.48E+02				N	3
LA-MHD03.001	LA-MHD03.001				1.48E+02				Y	2
LA-MIN02-V.001	LA-MIN02-V.001		5.41E-03		5.94E-01			7.48E+00	Y	2
	No longer reporting Complexing Agents								Y	2
LL-M001	LL-M001		2.12E+00		2.12E+00			2.12E+00	Y	2
LL-W018-S5100	LL-W018-S5100		5.69E-01		5.69E-01	5.69E-01		5.69E-01	N	3
LL-W019	LL-W019		4.86E-01		4.86E-01			4.86E-01	Y	2
OR-CHEM-CH-HET	OR-CHEM-CH-HET, OR-CHEM-RH-HET	8.75E-02	8.75E-02	8.75E-02	8.75E-02	8.75E-02	8.75E-02	8.75E-02	Y	2
OR-CHEM-RH-HET	OR-CHEM-RH-HET	1.38E-02	1.38E-02	1.38E-02	1.38E-02	1.38E-02	1.38E-02	1.38E-02	N	3
OR-CRF-CH-HET	OR-CRF-CH-HET	3.56E-02	3.56E-02	3.56E-02	3.56E-02	3.56E-02	3.56E-02	3.56E-02	N	3
OR-GENR-CH-HET	OR-GENR-CH-HET, OR-GENR-RH-HET	6.85E-02	6.85E-02	6.85E-02	6.85E-02	6.85E-02	6.85E-02	6.85E-02	Y	2
	No longer reporting Complexing Agents								N	5
OR-GRSC-CH-HET	New Waste Stream, OR-GRSC-RH-HOM	1.31E-02	1.31E-02	1.31E-02	1.31E-02	1.31E-02	1.31E-02	1.31E-02	N	1
OR-GRSC-RH-HOM	OR-GRSC-RH-HOM	1.52E-02	1.52E-02	1.52E-02	1.52E-02	1.52E-02	1.52E-02	1.52E-02	N	3
OR-IFEL-CH-HET	OR-IFEL-CH-HET	7.77E-02	7.77E-02	7.77E-02	7.77E-02	7.77E-02	7.77E-02	7.77E-02	N	3
OR-ISTP-CH-HET	OR-ISTP-CH-HET	2.89E-01	2.89E-01	2.89E-01	2.89E-01	2.89E-01	2.89E-01	2.89E-01	Y	2
OR-ISTP-RH-HET	OR-ISTP-RH-HET	1.19E-02	1.19E-02	1.19E-02	1.19E-02	1.19E-02	1.19E-02	1.19E-02	N	3
OR-LWT-CH-HET	OR-LWT-CH-HET	1.43E-02	1.43E-02	1.43E-02	1.43E-02	1.43E-02	1.43E-02	1.43E-02	Y	2
OR-MRF-CH-HET	OR-MRF-CH-HET	1.20E-01	1.20E-01	1.20E-01	1.20E-01	1.20E-01	1.20E-01	1.20E-01	N	3
OR-MRF-RH-HET	OR-MRF-RH-HET	2.94E-02	2.94E-02	2.94E-02	2.94E-02	2.94E-02	2.94E-02	2.94E-02	N	3
OR-MSRE-CH-HET	New Waste Stream, OR-TBD-CH-HET	4.99E-02	4.99E-02	4.99E-02	4.99E-02	4.99E-02	4.99E-02	4.99E-02	N	1
OR-MSRE-RH-HET	New Waste Stream, OR-TBD-RH-HET	2.68E-02	2.68E-02	2.68E-02	2.68E-02	2.68E-02	2.68E-02	2.68E-02	N	1
OR-NBL-CH-HET	OR-NBL-CH-HET	4.61E-02	4.61E-02	4.61E-02	4.61E-02	4.61E-02	4.61E-02	4.61E-02	Y	2
OR-NFS-CH-HET-A	OR-NFS-CH-HET-A	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00	1.16E+00	Y	2
OR-PGDP-CH-HET	OR-PGDP-CH-HET	1.66E-01	1.66E-01	1.66E-01	1.66E-01	1.66E-01	1.66E-01	1.66E-01	N	3
OR-PUBE-CH-HOM	OR-PUBE-CH-HOM	1.10E-03	1.10E-03	1.10E-03	1.10E-03	1.10E-03	1.10E-03	1.10E-03	N	3
OR-RADP-CH-HET	OR-RADP-CH-HET	7.38E-02	7.38E-02	7.38E-02	7.38E-02	7.38E-02	7.38E-02	7.38E-02	Y	2
OR-RADP-RH-HET	OR-RADP-RH-HET	2.20E-02	2.20E-02	2.20E-02	2.20E-02	2.20E-02	2.20E-02	2.20E-02	N	3
OR-REDC-CH-HET	OR-REDC-CH-HET	4.15E+00	4.15E+00	4.15E+00	4.15E+00	4.15E+00	4.15E+00	4.15E+00	Y	2
OR-REDC-RH-HET	OR-REDC-RH-HET	4.05E+00	4.05E+00	4.05E+00	4.05E+00	4.05E+00	4.05E+00	4.05E+00	Y	2
OR-RF-CH-HET	OR-RF-CH-HET	9.17E-02	9.17E-02	9.17E-02	9.17E-02	9.17E-02	9.17E-02	9.17E-02	Y	2
OR-RF-RH-HET	OR-RF-RH-HET	4.88E+00	4.88E+00	4.88E+00	4.88E+00	4.88E+00	4.88E+00	4.88E+00	N	3
OR-RF-RH-HET-A	New Waste Stream, OR-RF-CH-HET	1.12E-02	1.12E-02	1.12E-02	1.12E-02	1.12E-02	1.12E-02	1.12E-02	N	1

2021 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-T001		2.05E-01		2.05E-01	2.05E-01	2.05E-01	2.05E-01
AE-T003		2.91E-02		2.91E-02	2.91E-02	2.91E-02	2.68E+01
AE-T009		1.84E-01		1.84E-01	1.84E-01	1.84E-01	1.84E-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		8.35E-04		8.35E-04			8.35E-04
IN-AW-161	1.27E-02	1.27E-03	1.27E-02		1.27E-03		1.27E-03
IN-BN004					2.24E+02		
IN-BNINW218	2.46E+03	2.90E+02	8.59E+02	2.01E+02	1.61E+00		2.01E+02
IN-ID-ANLE-BIN	2.16E-03	4.32E-02		4.32E-02	2.16E-03	2.16E-03	4.32E-02
IN-ID-ANLW-W269-RH	6.99E-04	6.99E-05	6.99E-04	6.99E-04	6.99E-05		6.99E-05
IN-ID-BTO-030		5.00E-03	5.00E-03	5.00E-03	5.00E-03		5.00E-03
IN-ID-HFEF-S3000-RP	1.54E-03	1.54E-03	1.54E-03		1.54E-03		1.54E-03
IN-ID-HFEF-S5000-RP	3.09E-03	3.09E-03	3.09E-03		3.09E-03		3.09E-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-MISC-RH	9.50E-04	9.50E-03	9.50E-04		9.50E-04		9.50E-04
IN-ID-RF-S5000-RH		5.50E-02		5.50E-02			
IN-ID-RF-S5300-A					2.69E+01		
IN-ID-Sample Fuel	6.25E-02	7.50E-03	6.25E-03		3.13E-02		7.50E-03
IN-ID-SDA-Debris		3.86E+03		4.45E+00	2.37E-01		3.11E+00
IN-ID-SDA-Sludge		5.24E+03		8.54E+01	4.07E+00		3.69E+01
IN-ID-SDA-Soil		1.23E+03		2.59E+01	1.23E+00		7.66E+00
INW169.001-S					1.09E+00		
LA-CIN01.001		1.01E+00		1.45E+02			1.73E+01
LA-CIN02.001		1.74E+00		1.92E+02			1.08E+03
LA-CIN03.001				6.86E-01			
LA-MHD01.001		4.28E+00		2.91E+02			6.14E+02
LA-MHD01-Pits				3.03E+02			
LA-MHD03.001				1.79E+02			
LA-MIN02-V.001		1.16E-01		1.28E+01			1.59E+02
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		5.69E-01		5.69E-01	5.69E-01		5.69E-01
LL-W019		7.32E-01		7.32E-01	5.70E-01		7.32E-01
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
OR-CHEM-RH-HET	1.38E-02	1.38E-02	1.38E-02	1.38E-02	1.38E-02	1.38E-02	1.38E-02
OR-CRF-CH-HET	4.11E-02	4.11E-02	4.11E-02	4.11E-02	4.11E-02	4.11E-02	4.11E-02
OR-GENR-CH-HET	2.05E-01	2.05E-01	2.05E-01	2.05E-01	2.05E-01	2.05E-01	2.05E-01
OR-GENR-RH-HET	2.75E-03	2.75E-03	2.75E-03	2.75E-03	2.75E-03	2.75E-03	2.75E-03
OR-GRSC-RH-HOM	2.82E-02	2.82E-02	2.82E-02	2.82E-02	2.82E-02	2.82E-02	2.82E-02
OR-IFEL-CH-HET	7.07E-02	7.07E-02	7.07E-02	7.07E-02	7.07E-02	7.07E-02	7.07E-02
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
OR-ISTP-RH-HET	2.99E-02	2.99E-02	2.99E-02	2.99E-02	2.99E-02	2.99E-02	2.99E-02
OR-LWT-CH-HET	1.71E-02	1.71E-02	1.71E-02	1.71E-02	1.71E-02	1.71E-02	1.71E-02
OR-MRF-CH-HET	1.20E-01	1.20E-01	1.20E-01	1.20E-01	1.20E-01	1.20E-01	1.20E-01
OR-MRF-RH-HET	2.94E-02	2.94E-02	2.94E-02	2.94E-02	2.94E-02	2.94E-02	2.94E-02
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
OR-NFS-CH-HET-A	2.28E+00	2.28E+00	2.28E+00	2.28E+00	2.28E+00	2.28E+00	2.28E+00
OR-PGDP-CH-HET	1.50E-01	1.50E-01	1.50E-01	1.50E-01	1.50E-01	1.50E-01	1.50E-01
OR-PUBE-CH-HOM	1.10E-03	1.10E-03	1.10E-03	1.10E-03	1.10E-03	1.10E-03	1.10E-03
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
OR-RADP-RH-HET	1.10E-02	1.10E-02	1.10E-02	1.10E-02	1.10E-02	1.10E-02	1.10E-02
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
OR-REDC-RH-HET	4.10E+00	4.10E+00	4.10E+00	4.10E+00	4.10E+00	4.10E+00	4.10E+00
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
OR-RF-RH-HET	2.47E+00	2.47E+00	2.47E+00	2.47E+00	2.47E+00	2.47E+00	2.47E+00

2023 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	26.2%
AE-T003		2.91E-02		2.91E-02	2.91E-02	2.91E-02	2.68E+01	0.0%
AE-T009		1.84E-01		1.84E-01	1.84E-01	1.84E-01	1.84E-01	39.7%
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			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	3.75E-01		3.11E+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		1.45E+02			1.73E+01	38.3%
LA-CIN02.001		1.74E+00		1.92E+02			1.08E+03	0.0%
LA-CIN03.001				6.86E-01				0.0%
LA-MHD01.001		4.28E+00		2.91E+02			6.14E+02	96.1%
LA-MHD01-Pits				2.48E+02				100.0%
LA-MHD03.001				1.79E+02				90.9%
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	93.9%
LL-W018-S5100		5.69E-01		5.69E-01	5.69E-01		5.69E-01	0.0%
LL-W019		7.32E-01		7.32E-01	5.70E-01		7.32E-01	84.8%
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	1.38E-02	1.38E-02	1.38E-02	1.38E-02	1.38E-02	1.38E-02	1.38E-02	0.0%
OR-CRF-CH-HET	3.56E-02	3.56E-02	3.56E-02	3.56E-02	3.56E-02	3.56E-02	3.56E-02	0.0%
OR-GENR-CH-HET	2.05E-01	2.05E-01	2.05E-01	2.05E-01	2.05E-01	2.05E-01	2.05E-01	0.0%
OR-GRSC-CH-HET	1.31E-02	1.31E-02	1.31E-02	1.31E-02	1.31E-02	1.31E-02	1.31E-02	0.0%
OR-GRSC-RH-HOM	1.52E-02	1.52E-02	1.52E-02	1.52E-02	1.52E-02	1.52E-02	1.52E-02	0.0%
OR-IFEL-CH-HET	7.77E-02	7.77E-02	7.77E-02	7.77E-02	7.77E-02	7.77E-02	7.77E-02	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	1.19E-02	1.19E-02	1.19E-02	1.19E-02	1.19E-02	1.19E-02	1.19E-02	0.0%
OR-LWT-CH-HET	1.71E-02	1.71E-02	1.71E-02	1.71E-02	1.71E-02	1.71E-02	1.71E-02	0.0%
OR-MRF-CH-HET	1.20E-01	1.20E-01	1.20E-01	1.20E-01	1.20E-01	1.20E-01	1.20E-01	0.0%
OR-MRF-RH-HET	2.94E-02	2.94E-02	2.94E-02	2.94E-02	2.94E-02	2.94E-02	2.94E-02	0.0%
OR-MSRE-CH-HET	4.99E-02	4.99E-02	4.99E-02	4.99E-02	4.99E-02	4.99E-02	4.99E-02	0.0%
OR-MSRE-RH-HET	2.68E-02	2.68E-02	2.68E-02	2.68E-02	2.68E-02	2.68E-02	2.68E-02	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-A	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	1.66E-01	1.66E-01	1.66E-01	1.66E-01	1.66E-01	1.66E-01	1.66E-01	0.0%
OR-PUBE-CH-HOM	1.10E-03	1.10E-03	1.10E-03	1.10E-03	1.10E-03	1.10E-03	1.10E-03	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	2.20E-02	2.20E-02	2.20E-02	2.20E-02	2.20E-02	2.20E-02	2.20E-02	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	88.7%
OR-REDC-RH-HET	4.10E+00	4.10E+00	4.10E+00	4.10E+00	4.10E+00	4.10E+00	4.10E+00	84.8%
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	4.88E+00	4.88E+00	4.88E+00	4.88E+00	4.88E+00	4.88E+00	4.88E+00	88.7%
OR-RF-RH-HET-A	1.12E-02	1.12E-02	1.12E-02	1.12E-02	1.12E-02	1.12E-02	1.12E-02	0.0%

2023 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		2.11E-01		2.11E-01	2.11E-01	2.11E-01	2.11E-01	CH
AE-T003		2.91E-02		2.91E-02	2.91E-02	2.91E-02	2.68E+01	CH
AE-T009		1.08E-01		1.08E-01	1.08E-01	1.08E-01	1.08E-01	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		4.90E-04		4.90E-04			4.90E-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	1.27E-03	2.54E-02		2.54E-02	1.27E-03	1.27E-03	2.54E-02	RH
IN-ID-ANLW-W269-RH	4.10E-04	4.10E-05	4.10E-04	4.10E-04	4.10E-05		4.10E-05	RH
IN-ID-BTO-030		2.94E-03	2.94E-03	2.94E-03	2.94E-03		2.94E-03	RH
IN-ID-HFEF-S3000-RP	9.06E-04	9.06E-04	9.06E-04		9.06E-04		9.06E-04	RH
IN-ID-HFEF-S5000-RP	1.81E-03	1.81E-03	1.81E-03		1.81E-03		1.81E-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	9.02E-03	9.02E-03	9.02E-03		9.02E-03		9.02E-03	RH
IN-ID-MFC-SOLID	3.73E-04	3.73E-05	3.73E-04		3.73E-05		3.73E-05	RH
IN-ID-MISC-RH	5.58E-04	5.58E-03	5.58E-04		5.58E-04		5.58E-04	RH
IN-ID-RF-S5000-RH		3.23E-02		3.23E-02				RH
IN-ID-RF-S5300-A					2.69E+01			CH
IN-ID-Sample Fuel	3.67E-02	4.40E-03	3.67E-03		1.83E-02		4.40E-03	RH
IN-ID-SDA-Debris		3.86E+03		4.45E+00	3.75E-01		3.11E+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		1.01E+00		1.51E+02			1.73E+01	CH
LA-CIN02.001		1.74E+00		1.92E+02			1.08E+03	CH
LA-CIN03.001				6.86E-01				CH
LA-MHD01.001		4.28E+00		6.61E+02			6.14E+02	CH
LA-MHD01-Pits				2.75E+02				CH
LA-MHD03.001				1.97E+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		3.59E+00		3.59E+00	3.25E+00		3.59E+00	CH
LL-W018-S5100		5.69E-01		5.69E-01	5.69E-01		5.69E-01	CH
LL-W019		8.00E-01		8.00E-01	5.70E-01		8.00E-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	8.09E-03	8.09E-03	8.09E-03	8.09E-03	8.09E-03	8.09E-03	8.09E-03	RH
OR-CRF-CH-HET	3.56E-02	3.56E-02	3.56E-02	3.56E-02	3.56E-02	3.56E-02	3.56E-02	CH
OR-GENR-CH-HET	2.05E-01	2.05E-01	2.05E-01	2.05E-01	2.05E-01	2.05E-01	2.05E-01	CH
OR-GRSC-CH-HET	1.31E-02	1.31E-02	1.31E-02	1.31E-02	1.31E-02	1.31E-02	1.31E-02	CH
OR-GRSC-RH-HOM	8.95E-03	8.95E-03	8.95E-03	8.95E-03	8.95E-03	8.95E-03	8.95E-03	RH
OR-IFEL-CH-HET	7.77E-02	7.77E-02	7.77E-02	7.77E-02	7.77E-02	7.77E-02	7.77E-02	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	7.00E-03	7.00E-03	7.00E-03	7.00E-03	7.00E-03	7.00E-03	7.00E-03	RH
OR-LWT-CH-HET	1.71E-02	1.71E-02	1.71E-02	1.71E-02	1.71E-02	1.71E-02	1.71E-02	CH
OR-MRF-CH-HET	1.20E-01	1.20E-01	1.20E-01	1.20E-01	1.20E-01	1.20E-01	1.20E-01	CH
OR-MRF-RH-HET	1.72E-02	1.72E-02	1.

2023 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
OR-SOURCE-CH-HET	OR-SOURCE-CH-HET	1.09E-01	1.09E-01	1.09E-01	1.09E-01	1.09E-01	1.09E-01	1.09E-01	N	3
OR-SWSA-CH-HET	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	N	3
OR-SWSA-CH-SOIL	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	N	3
	No longer reporting Complexing Agents								N	5
	No longer reporting Complexing Agents								N	5
OR-TDYN-CH-HET	New Waste Stream, OR-TBD-CH-HET	6.66E-03	6.66E-03	6.66E-03	6.66E-03	6.66E-03	6.66E-03	6.66E-03	N	1
OR-WC14-RH-HET	OR-WC14-RH-HET	8.91E-03	8.91E-03	8.91E-03	8.91E-03	8.91E-03	8.91E-03	8.91E-03	N	3
	No longer reporting Complexing Agents								N	5
RL170-08	RL170-08				2.40E-03	1.70E-03		3.30E-03	N	3
RL200-01	RL200-01				2.52E+01			3.48E+01	N	3
RL200-02	RL200-02	3.14E+03	3.53E+02		1.76E+02	9.18E-01	8.61E-01	1.02E+02	N	3
RL216Z-02	RL216Z-02							1.71E+01	N	3
RL222S-01	RL222S-01	1.83E+01	5.47E-01			8.99E-03	2.73E-01	1.83E+01	N	3
RL233S-01	RL233S-01		5.50E-02		1.18E+00			5.50E-02	Y	2
RL300-01	RL300-01	2.71E-01		1.56E-01	4.91E-01	4.91E-01	1.36E-01	4.91E-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	1.93E+02	1.51E+00	7.05E+01	8.57E+00	7.18E+00	8.78E+00	3.46E+00	Y	2
RL325-03	New Waste Stream	3.27E-02	2.00E+01	5.04E-03	8.00E+00	3.67E+00	1.67E+01	9.03E-01	N	1
RL325-09	New Waste Stream				2.16E-02				N	1
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
RLCFF-01	RLCFF-01				1.35E-02				N	3
RLESG-01	RLESG-01				1.81E+00			1.76E+00	Y	2
RLESG-08	RLESG-08, RLESG-09				2.10E+00	3.55E-04		2.10E+00	N	3
RLESG-09	RLESG-09		9.24E-02		9.78E-01			9.50E-01	N	3
RLGEV-01	RLGEV-01				2.65E+00				Y	2
RLGEV-03	RLGEV-03				5.86E-05				N	3
RLHAN-01	RLHAN-01	1.83E+00	6.36E+00	4.58E-01	7.00E-01	4.09E+00	1.68E+00	5.57E-01	N	3
	No longer reporting Complexing Agents								N	5
RLPFP-01	RLPFP-01	2.78E+03	2.22E+03		1.33E+01	3.32E+00	1.18E+01	1.68E+01	Y	2
RLPFP-01A	RLPFP-01A		1.02E+01					1.08E-02	N	3
RLPFP-03	RLHAN-03, RLPFP-03	2.30E-03							N	1
	Shipped								Y	2
RLPFP-08	RLPFP-08	1.29E-01	4.70E+00					8.70E-03	N	3
RLSWO-01	RLSWO-01		4.73E-01					1.22E-04	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	SA-W134		1.00E-09		1.00E-09				Y	2
SA-W135	SA-W135		1.00E-09		1.00E-09				Y	2
SR-CH-PP	SR-CH-PP				1.62E+03				N	3
	Shipped								Y	2

2021 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)
OR-SOURCE-CH-HET	8.37E-02	8.37E-02	8.37E-02	8.37E-02	8.37E-02	8.37E-02	8.37E-02
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
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
OR-TBD-CH-HET	1.72E-01	1.72E-01	1.72E-01	1.72E-01	1.72E-01	1.72E-01	1.72E-01
OR-TBD-RH-HET	1.02E+00	1.02E+00	1.02E+00	1.02E+00	1.02E+00	1.02E+00	1.02E+00
OR-WC14-RH-HET	8.91E-03	8.91E-03	8.91E-03	8.91E-03	8.91E-03	8.91E-03	8.91E-03
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
RL170-08				2.40E-03	1.70E-03		3.30E-03
RL200-01				2.52E+01			3.48E+01
RL200-02	3.14E+03	1.52E+03		1.11E+00	8.61E-01	8.61E-01	5.99E+00
RL216Z-02							1.71E+01
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	4.91E-01	4.91E-01	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	2.95E+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		
RLCFF-01				1.35E-02			
RLESG-01				1.85E+00			1.80E+00
RLESG-08				1.80E+00	3.55E-04		1.80E+00
RLESG-09		9.24E-02		1.67E+00			1.62E+00
RLGEV-01				3.90E+00			
RLGEV-03				5.86E-05			
RLHAN-01	1.83E+00	6.36E+00	4.58E-01	7.00E-01	4.09E+00	1.68E+00	5.57E-01
RLHAN-03	2.30E-03						
RLPFP-01	6.99E+03	3.38E+03		1.33E+01	3.32E+00	1.18E+01	1.68E+01
RLPFP-01A		1.02E+01					1.08E-02
RLPFP-05	2.32E+03	1.12E+03		8.20E-01	6.38E-01	6.38E-01	4.43E+00
RLPFP-08	1.29E-01	4.70E+00					8.70E-03
RLSWO-01		8.84E-01		2.32E+01			2.03E-02
RLWAR-01				4.02E+03			1.39E+04
RLWAR-03	6.12E-02			1.22E-01			4.10E-01
SA-W134		1.00E-09		1.00E-09			
SA-W135		1.00E-09		1.00E-09			
SR-CH-PP				1.62E+03			
RF Total	4.46E+01	5.29E+00	1.66E+01	3.63E+00	1.18E+01		3.63E+00

2023 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 (%)
OR-SOURCE-CH-HET	1.09E-01	1.09E-01	1.09E-01	1.09E-01	1.09E-01	1.09E-01	1.09E-01	0.0%
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-TDYN-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-WC14-RH-HET	8.91E-03	8.91E-03	8.91E-03	8.91E-03	8.91E-03	8.91E-03	8.91E-03	0.0%
RL170-08				2.40E-03	1.70E-03		3.30E-03	0.0%
RL200-01				2.52E+01			3.48E+01	89.6%
RL200-02	3.14E+03	3.53E+02		1.76E+02	9.18E-01	8.61E-01	1.02E+02	99.9%
RL216Z-02							1.71E+01	0.0%
RL222S-01	1.83E+01	5.47E-01			8.99E-03	2.73E-01	1.83E+01	51.1%
RL233S-01		5.50E-02		1.18E+00			5.50E-02	0.0%
RL300-01	3.81E+01		1.53E+01	4.91E-01	4.91E-01	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	2.95E+01	6.38E+02	2.01E+02	24.7%
RL325-03	3.27E-02	2.00E+01	5.04E-03	8.00E+00	3.67E+00	1.67E+01	9.03E-01	41.1%
RL325-09				2.16E-02				0.0%
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%
RLCFF-01				1.35E-02				0.0%
RLESG-01				1.85E+00			1.80E+00	0.0%
RLESG-08				2.10E+00	3.55E-04		2.10E+00	0.0%
RLESG-09		9.24E-02		9.78E-01			9.50E-01	0.0%
RLGEV-01				3.90E+00				0.0%
RLGEV-03				5.86E-05				0.0%
RLHAN-01	1.83E+00	6.36E+00	4.58E-01	7.00E-01	4.09E+00	1.68E+00	5.57E-01	0.0%
RLPFP-01	6.99E+03	3.38E+03		1.33E+01	3.32E+00	1.18E+01	1.68E+01	0.0%
RLPFP-01A		1.02E+01					1.08E-02	0.0%
RLPFP-03	2.30E-03							0.0%
RLPFP-05	2.32E+03	1.12E+03		8.20E-01	6.38E-01	6.38E-01	4.43E+00	0.0%
RLPFP-08	1.29E-01	4.70E+00					8.70E-03	0.0%
RLSWO-01		8.84E-01		2.32E+01			2.03E-02	17.1%
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%
SR-CH-PP				1.62E+03				100.0%
RF Total	4.46E+01	5.29E+00	1.66E+01	3.63E+00	1.18E+01		3.63E+00	0.0%

2023 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
OR-SOURCE-CH-HET	1.09E-01	1.09E-01	1.09E-01	1.09E-01	1.09E-01	1.09E-01	1.09E-01	CH
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-TDYN-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-WC14-RH-HET	5.23E-03	5.23E-03	5.23E-03	5.23E-03	5.23E-03	5.23E-03	5.23E-03	RH
RL170-08				1.41E-03	9.98E-04		1.94E-03	RH
RL200-01				2.77E+01			3.83E+01	CH
RL200-02	3.48E+03	3.91E+02		1.96E+02	1.02E+00	9.55E-01	1.14E+02	CH
RL216Z-02							1.71E+01	CH
RL222S-01	1.94E+01	5.79E-01			9.52E-03	2.90E-01	1.94E+01	CH
RL233S-01		5.50E-02		1.18E+00			5.50E-02	CH
RL300-01	3.81E+01		1.53E+01	4.91E-01	4.91E-01	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	4.14E+02	3.48E+01	1.71E+03	2.07E+02	3.03E+01	6.55E+02	2.07E+02	CH
RL325-03	3.42E-02	2.10E+01	5.28E-03	8.37E+00	3.84E+00	1.75E+01	9.45E-01	CH
RL325-09				1.27E-02				RH
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	2.03E-05	9.50E-06		6.11E-06	9.50E-06			RH
RLCFF-01				1.35E-02				CH
RLESG-01				1.85E+00			1.80E+00	CH
RLESG-08				1.23E+00	2.08E-04		1.23E+00	RH
RLESG-09		5.42E-02		5.74E-01			5.58E-01	RH
RLGEV-01				3.90E+00				CH
RLGEV-03				5.86E-05				CH
RLHAN-01	1.83E+00	6.36E+00	4.58E-01	7.00E-01	4.09E+00	1.68E+00	5.57E-01	CH
RLPFP-01	6.99E+03	3.38E+03		1.33E+01	3.32E+00	1.18E+01	1.68E+01	CH
RLPFP-01A		1.02E+01					1.08E-02	CH
RLPFP-03	2.30E-03							CH
RLPFP-05	2.32E+03	1.12E+03		8.20E-01	6.38E-01	6.38E-01	4.43E+00	CH
RLPFP-08	7.57E-02	2.76E+00					5.11E-03	RH
RLSWO-01		9.00E-01		2.32E+01			2.07E-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		5.87E-10		5.87E-10				RH
SR-CH-PP				1.80E+03				CH
RF Total	4.46E+01	5.29E+00	1.66E+01	3.63E+00	1.18E+01		3.63E+00	CH

2023 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	5.80E-02	0.00E+00	5.80E-02	5.80E-02	5.80E-02	5.80E-02
AE Total (RH)	Argonne National Laboratory	0.00E+00	1.05E-01	0.00E+00	1.05E-01	1.05E-01	1.05E-01	1.05E-01
IN Total (CH)	Idaho National Laboratory	0.00E+00	1.13E+03	0.00E+00	1.97E+00	1.24E+00	0.00E+00	1.26E+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	5.41E-03	0.00E+00	1.06E+03	0.00E+00	0.00E+00	7.48E+00
LL Total (CH)	Lawrence Livermore National Laboratory	0.00E+00	3.17E+00	0.00E+00	3.17E+00	5.69E-01	0.00E+00	3.17E+00
OR Total (CH)	Oak Ridge National Laboratory	6.67E+00	6.67E+00	6.67E+00	6.67E+00	6.67E+00	6.67E+00	6.67E+00
OR Total (RH)	Oak Ridge National Laboratory	9.07E+00	9.07E+00	9.07E+00	9.07E+00	9.07E+00	9.07E+00	9.07E+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	6.14E+03	2.62E+03	7.20E+01	1.22E+03	2.06E+01	4.12E+01	3.57E+03
RL Total (RH)	Hanford (Richland) Site	1.29E-01	4.79E+00	0.00E+00	3.10E+00	2.07E-03	0.00E+00	3.06E+00
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
SR Total (CH)	Savannah River Site	0.00E+00	0.00E+00	0.00E+00	1.62E+03	0.00E+00	0.00E+00	0.00E+00
CH TOTAL		**6.14E+03**	**3.77E+03**	**7.86E+01**	**3.91E+03**	**2.92E+01**	**4.79E+01**	**3.60E+03**
RH TOTAL		**9.28E+00**	**1.41E+01**	**9.10E+00**	**1.24E+01**	**9.23E+00**	**9.18E+00**	**1.23E+01**
GRAND TOTAL		**6.15E+03**	**3.78E+03**	**8.77E+01**	**3.92E+03**	**3.84E+01**	**5.71E+01**	**3.61E+03**

2021 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	2.34E-01	0.00E+00	2.34E-01	2.34E-01	2.34E-01	2.70E+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
IN Total (CH)	2.46E+03	1.06E+04	8.59E+02	3.17E+02	3.14E+02	0.00E+00	2.49E+02
IN Total (RH)	1.00E-01	1.48E-01	4.67E-02	1.10E-01	6.13E-02	2.16E-03	8.48E-02
LA Total (CH)	0.00E+00	7.40E+00	0.00E+00	1.15E+03	0.00E+00	0.00E+00	2.20E+03
LL Total (CH)	0.00E+00	4.55E+00	0.00E+00	4.55E+00	4.39E+00	0.00E+00	4.55E+00
OR Total (CH)	1.11E+01	1.11E+01	1.11E+01	1.11E+01	1.11E+01	1.11E+01	1.11E+01
OR Total (RH)	7.72E+00	7.72E+00	7.72E+00	7.72E+00	7.72E+00	7.72E+00	7.72E+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)	1.29E+04	6.08E+03	1.68E+03	4.29E+03	3.98E+01	6.63E+02	1.42E+04
RL Total (RH)	1.29E-01	4.79E+00	0.00E+00	3.47E+00	2.07E-03	0.00E+00	3.43E+00
SA Total (CH)	0.00E+00	1.00E-09	0.00E+00	1.00E-09	0.00E+00	0.00E+00	0.00E+00
SA Total (RH)	0.00E+00	1.00E-09	0.00E+00	1.00E-09	0.00E+00	0.00E+00	0.00E+00
SR Total (CH)	0.00E+00	0.00E+00	0.00E+00	1.62E+03	0.00E+00	0.00E+00	0.00E+00
CH TOTAL	**1.54E+04**	**1.67E+04**	**2.56E+03**	**7.40E+03**	**3.81E+02**	**6.74E+02**	**1.67E+04**
RH TOTAL	**7.95E+00**	**1.28E+01**	**7.76E+00**	**1.15E+01**	**7.96E+00**	**7.90E+00**	**1.14E+01**
GRAND TOTAL	**1.54E+04**	**1.67E+04**	**2.57E+03**	**7.41E+03**	**3.89E+02**	**6.82E+02**	**1.67E+04**

2023 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	2.49E+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	1.40E+03	0.00E+00	0.00E+00	2.20E+03	3.61E+03
LL Total (CH)	0.00E+00	4.55E+00	0.00E+00	4.55E+00	4.39E+00	0.00E+00	4.55E+00	1.80E+01
OR Total (CH)	1.10E+01	1.10E+01	1.10E+01	1.10E+01	1.10E+01	1.10E+01	1.10E+01	7.70E+01
OR Total (RH)	9.12E+00	9.12E+00	9.12E+00	9.12E+00	9.12E+00	9.12E+00	9.12E+00	6.38E+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)	1.29E+04	4.93E+03	1.68E+03	4.47E+03	4.36E+01	6.80E+02	1.43E+04	3.90E+04
RL Total (RH)	1.29E-01	4.79E+00	0.00E+00	3.10E+00	2.07E-03	0.00E+00	3.06E+00	1.11E+01
SA Total (CH)	0.00E+00	1.00E-09	0.00E+00	1.00E-09	0.00E+00	0.00E+00	2.00E-09	2.00E-09
SA Total (RH)	0.00E+00	1.00E-09	0.00E+00	1.00E-09	0.00E+00	0.00E+00	2.00E-09	2.00E-09
SR Total (CH)	0.00E+00	0.00E+00	0.00E+00	1.62E+03	0.00E+00	0.00E+00	1.62E+03	3.24E+03
CH TOTAL	**1.54E+04**	**1.56E+04**	**2.56E+03**	**7.83E+03**	**3.85E+02**	**6.91E+02**	**1.68E+04**	**5.93E+04**
RH TOTAL	**9.35E+00**	**1.42E+01**	**9.17E+00**	**1.25E+01**	**9.37E+00**	**9.31E+00**	**1.25E+01**	**7.64E+01**
GRAND TOTAL	**1.54E+04**	**1.56E+04**	**2.57E+03**	**7.84E+03**	**3.95E+02**	**7.00E+02**	**1.68E+04**	**5.94E+04**

2023 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	2.40E-01	0.00E+00	2.40E-01	2.40E-01	2.40E-01	2.70E+01	2.80E+01
AE Total (RH)	0.00E+00	1.08E-01	0.00E+00	1.08E-01	1.08E-01	1.08E-01	1.08E-01	5.39E-01
IN Total (CH)	2.46E+03	1.06E+04	8.59E+02	3.17E+02	3.14E+02	0.00E+00	2.49E+02	1.48E+04
IN Total (RH)	6.42E-02	9.01E-02	3.29E-02	6.69E-02	3.67E-02	1.27E-03	5.28E-02	3.45E-01
LA Total (CH)	0.00E+00	7.40E+00	0.00E+00	1.52E+03	0.00E+00	0.00E+00	2.20E+03	3.73E+03
LL Total (CH)	0.00E+00	4.96E+00	0.00E+00	4.96E+00	4.39E+00	0.00E+00	4.96E+00	1.93E+01
OR Total (CH)	1.15E+01	1.15E+01	1.15E+01	1.15E+01	1.15E+01	1.15E+01	1.15E+01	8.07E+01
OR Total (RH)	5.35E+00	5.35E+00	5.35E+00	5.35E+00	5.35E+00	5.35E+00	5.35E+00	3.75E+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)	1.33E+04	4.98E+03	1.72E+03	4.50E+03	4.46E+01	6.98E+02	1.43E+04	3.95E+04
RL Total (RH)	7.58E-02	2.81E+00	0.00E+00	1.82E+00	1.22E-03	0.00E+00	1.80E+00	6.51E+00
SA Total (CH)	0.00E+00	1.00E-09	0.00E+00	1.00E-09	0.00E+00	0.00E+00	2.00E-09	2.00E-09
SA Total (RH)	0.00E+00	5.87E-10	0.00E+00	5.87E-10	0.00E+00	0.00E+00	1.17E-09	1.17E-09
SR Total (CH)	0.00E+00	0.00E+00	0.00E+00	1.80E+03	0.00E+00	0.00E+00	1.80E+03	3.60E+03
CH TOTAL	**1.58E+04**	**1.56E+04**	**2.61E+03**	**8.15E+03**	**3.87E+02**	**7.10E+02**	**1.68E+04**	**6.01E+04**
RH TOTAL	**5.49E+00**	**8.37E+00**	**5.39E+00**	**7.35E+00**	**5.50E+00**	**5.46E+00**	**7.31E+00**	**4.49E+01**
GRAND TOTAL	**1.58E+04**	**1.56E+04**	**2.62E+03**	**8.16E+03**	**3.92E+02**	**7.15E+02**	**1.68E+04**	**6.01E+04**

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

Table A-3 Cement Comparison: 2023 Inventory Data and 2021 Estimates

2023 Reported Cement Mass Unscaled

Waste Stream ID	Crosswalk	Cement (kg)	Shipped	[1]Case
IN-BN-RF432	IN-BN-RF432	3.06E+01	N	3
IN-BN-RF801	IN-BN-RF801	3.81E-01	N	3
IN-BN004	IN-BN004	7.51E+02	Y	2
IN-BN222	IN-BN222	1.76E+01	Y	2
	Potentially shipped cement from IN-W208R in 2011		Y	2
IN-BN836	IN-BN836	4.54E-01	Y	2
IN-BNINW216	IN-BNINW216	1.02E+01	Y	2
IN-BNINW218	IN-BNINW218	1.06E+02	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
	Shipped		Y	2
IN-ID-RF-S5000-RH	IN-ID-RF-S5000-RH	1.47E+02	N	3
	Shipped		Y	2
IN-ID-SDA-Debris	IN-ID-SDA-Debris	1.00E+02	Y	2
IN-ID-SDA-Sludge	IN-ID-SDA-Sludge	2.34E+02	Y	2
IN-ID-SDA-Soil	IN-ID-SDA-Soil	5.11E+01	Y	2
IN-RF-806	IN-RF-806	3.48E+01	N	3
LA-CIN01.001	LA-CIN01.001, LA-CIN02.001	1.37E+05	Y	2
LA-CIN02.001	LA-CIN01.001, LA-CIN02.001	6.07E+04	Y	2
LA-CIN03.001	LA-CIN03.001	1.37E+03	Y	2
LA-CIN04.001	New Waste Stream, LA-TA-21-13, LA-TA-21-16	8.60E+05	N	1
LA-LA225D	LA-LA225D	4.91E+02	N	3
LA-TA-03-28	LA-TA-03-28	1.06E+03	N	3
LA-TA-21-13	LA-TA-21-13	1.43E+04	N	3
LA-TA-21-16	LA-TA-21-16	1.17E+04	N	3
LA-TA-50-01	New Waste Stream	2.51E+02	N	1
LA-TA-50-18	LA-TA-50-18	4.27E+02	Y	2
LA-TA-55-38	LA-TA-55-38	1.54E+01	N	3
	No longer reporting Cements		Y	2
	No longer reporting Cements		Y	2
	Shipped		Y	2
	Shipped		Y	2
	Shipped		Y	2
	Shipped		Y	2
	Shipped		Y	2
	Waste Stream reported as Potential		N	5
OR-NFS-CH-HOM-A	OR-NFS-CH-HOM-A	2.78E+01	Y	2
OR-PUBE-CH-HOM	OR-PUBE-CH-HOM	5.20E+00	N	3
RL105-03	RL105-03	6.37E+04	N	3
RL105-09	RL105-09	7.19E+02	N	3
RL222S-01	New Waste Stream	5.55E+00	N	1
RL300-03	RL300-03	2.12E+03	N	3
RL308-03	RL308-03	9.53E+01	N	3
RL325-01	RL325-01	6.94E+02	Y	2
RL325-03	RL325-03	6.07E+03	N	3
RL325-08	RL325-08	3.94E+03	N	3
RL325-09	RL325-09	8.55E+01	N	3
RLESG-03	RLESG-03	2.33E+01	N	3
RLP11-01	RLP11-01	2.11E+02	N	3
RLPFP-01	RLPFP-01	6.04E+03	Y	2
RLSWO-01	New Waste Stream	2.28E+01	Y	1
RLWAR-03	RLWAR-03	2.92E+03	N	3
SA-W137	SA-W137	5.00E-03	N	3
SP-RHHD	SP-RHHD	5.66E+02	N	3
SR-AGNS-HOM	SR-AGNS-HOM	2.03E+03	Y	2
	Shipped		Y	2
	Shipped		Y	2

2021 Estimated Cement Mass Unscaled

Waste Stream ID	Cement (kg)
IN-BN-RF432	3.21E+01
IN-BN-RF801	3.81E-01
IN-BN004	2.18E+05
IN-BN222	2.44E+04
IN-BN510.1	4.63E+00
IN-BN836	5.77E+04
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	4.54E+02
IN-ID-RF-S5000-RH	1.47E+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
IN-RF-806	3.48E+01
LA-CIN01.001	5.60E+05
LA-CIN02.001	1.64E+05
LA-CIN03.001	1.86E+03
LA-LA225D	4.91E+02
LA-TA-03-28	1.06E+03
LA-TA-21-13	9.85E+05
LA-TA-21-16	1.19E+04
LA-TA-50-18	4.27E+02
LA-TA-55-38	1.54E+01
LL-M001	2.25E+05
LL-W019	1.27E+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
OR-NFS-CH-HOM-A	7.36E+01
OR-PUBE-CH-HOM	5.20E+00
RL105-03	6.37E+04
RL105-09	7.19E+02
RL300-03	2.12E+03
RL308-03	9.53E+01
RL325-01	6.48E+02
RL325-03	7.59E+03
RL325-08	5.61E+02
RL325-09	1.48E+01
RLESG-03	2.33E+01
RLP11-01	2.11E+02
RLPFP-01	6.04E+03
RLWAR-03	2.92E+03
SA-W137	5.00E-03
SP-RHHD	5.66E+02
SR-AGNS-HOM	3.92E+03
SR-BCLCH-MT01	7.08E+02
SR-BCLDP.001.001	7.86E+01

2023 Estimated Cement Mass Unscaled

Waste Stream ID	Cement (kg)	Pct Proj (%)
IN-BN-RF432	3.06E+01	0.0%
IN-BN-RF801	3.81E-01	0.0%
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-806	3.48E+01	0.0%
LA-CIN01.001	5.60E+05	38.3%
LA-CIN02.001	1.64E+05	0.0%
LA-CIN03.001	1.86E+03	0.0%
LA-CIN04.001	8.60E+05	0.0%
LA-LA225D	4.91E+02	0.0%
LA-TA-03-28	1.06E+03	0.0%
LA-TA-21-13	1.43E+04	0.0%
LA-TA-21-16	1.17E+04	0.0%
LA-TA-50-01	2.51E+02	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	93.9%
LL-W019	1.27E+02	84.8%
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%
OR-NFS-CH-HOM-A	7.36E+01	0.0%
OR-PUBE-CH-HOM	5.20E+00	0.0%
RL105-03	6.37E+04	0.0%
RL105-09	7.19E+02	0.0%
RL222S-01	5.55E+00	51.1%
RL300-03	2.12E+03	0.0%
RL308-03	9.53E+01	0.0%
RL325-01	6.94E+02	24.7%
RL325-03	6.07E+03	41.1%
RL325-08	3.94E+03	47.9%
RL325-09	8.55E+01	0.0%
RLESG-03	2.33E+01	0.0%
RLP11-01	2.11E+02	0.0%
RLPFP-01	6.04E+03	0.0%
RLSWO-01	2.28E+01	17.1%
RLWAR-03	2.92E+03	0.0%
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%

2023 Estimated Cement Mass Scaled

Waste Stream ID	Cement (kg)	Handling	Cement Type
IN-BN-RF432	3.06E+01	CH	Reacted
IN-BN-RF801	3.81E-01	CH	Reacted
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	3.92E+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	8.63E+01	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-806	3.48E+01	CH	Reacted
LA-CIN01.001	5.84E+05	CH	Reacted
LA-CIN02.001	1.64E+05	CH	Reacted
LA-CIN03.001	1.86E+03	CH	Reacted
LA-CIN04.001	8.60E+05	CH	Reacted
LA-LA225D	4.91E+02	CH	Reacted
LA-TA-03-28	1.06E+03	CH	Reacted
LA-TA-21-13	1.43E+04	CH	Reacted
LA-TA-21-16	1.17E+04	CH	Reacted
LA-TA-50-01	2.51E+02	CH	Reacted
LA-TA-50-18	4.27E+02	CH	Reacted
LA-TA-55-38	1.54E+01	CH	Reacted
LL-M001	2.25E+05	CH	Reacted
LL-W019	1.27E+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
OR-NFS-CH-HOM-A	7.36E+01	CH	Reacted
OR-PUBE-CH-HOM	5.20E+00	CH	Reacted
RL105-03	6.37E+04	CH	Reacted
RL105-09	4.22E+02	RH	Reacted
RL222S-01	5.87E+00	CH	Reacted
RL300-03	2.12E+03	CH	Reacted
RL308-03	9.53E+01	CH	Reacted
RL325-01	7.13E+02	CH	Reacted
RL325-03	6.34E+03	CH	Reacted
RL325-08	2.31E+03	RH	Reacted
RL325-09	5.02E+01	RH	Reacted
RLESG-03	2.33E+01	CH	Reacted
RLP11-01	2.11E+02	CH	Reacted
RLPFP-01	6.04E+03	CH	Reacted
RLSWO-01	2.32E+01	CH	Reacted
RLWAR-03	2.92E+03	CH	Reacted
SA-W137	5.00E-03	CH	Both
SP-RHHD	3.32E+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

2023 Reported Cement Mass Unscaled

Waste Stream ID	Crosswalk	Cement (kg)	Shipped	[1]Case
	Shipped		Y	2
	Shipped		Y	2
	Shipped		Y	2
	Shipped		Y	2
	Shipped		Y	2
SR-NIST-HET	SR-NIST-HET	2.90E+01	N	3
SR-SDD-HET-A	SR-SDD-HET-A	2.06E+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	4.48E+02	Y	2
	Shipped		Y	2
	Shipped		Y	2

2021 Estimated Cement Mass Unscaled

Waste Stream ID	Cement (kg)
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	2.90E+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

2023 Estimated Cement Mass Unscaled

Waste Stream ID	Cement (kg)	Pct Proj (%)
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-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%

2023 Estimated Cement Mass Scaled

Waste Stream ID	Cement (kg)	Handling	Cement Type
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-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

2023 Reported Cement Mass Unscaled Totals

Site ID (Handling)	TRU Waste Generator Site	Cement (kg)
IN Total (CH)	Idaho National Laboratory	1.34E+03
IN Total (RH)	Idaho National Laboratory	2.14E+02
LA Total (CH)	Los Alamos National Laboratory	1.09E+06
LL Total (CH)	Lawrence Livermore National Laboratory	0.00E+00
NT Total (CH)	Nevada National Security Site	0.00E+00
OR Total (CH)	Oak Ridge National Laboratory	3.30E+01
RF Total (CH)	Rocky Flats Environmental Technology Site	0.00E+00
RL Total (CH)	Hanford (Richland) Site	8.19E+04
RL Total (RH)	Hanford (Richland) Site	4.74E+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	4.60E+03
SR Total (RH)	Savannah River Site	0.00E+00
CH TOTAL		**1.18E+06**
RH TOTAL		**5.52E+03**
GRAND TOTAL		**1.18E+06**

2021 Estimated Cement Mass Unscaled Totals

Site ID (Handling)	Cement (kg)
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)	7.88E+01
RF Total (CH)	3.58E+05
RL Total (CH)	8.33E+04
RL Total (RH)	1.30E+03
SA Total (CH)	5.00E-03
SP Total (RH)	5.66E+02
SR Total (CH)	1.24E+04
SR Total (RH)	1.42E+03
CH TOTAL	**8.63E+06**
RH TOTAL	**3.49E+03**
GRAND TOTAL	**8.63E+06**

2023 Estimated Cement Mass Unscaled Totals

Site ID (Handling)	Cement (kg)
IN Total (CH)	6.22E+06
IN Total (RH)	2.14E+02
LA Total (CH)	1.61E+06
LL Total (CH)	2.25E+05
NT Total (CH)	3.62E+03
OR Total (CH)	7.88E+01
RF Total (CH)	3.58E+05
RL Total (CH)	8.19E+04
RL Total (RH)	4.74E+03
SA Total (CH)	5.00E-03
SP Total (RH)	5.66E+02
SR Total (CH)	1.24E+04
SR Total (RH)	1.42E+03
CH TOTAL	**8.52E+06**
RH TOTAL	**6.94E+03**
GRAND TOTAL	**8.52E+06**
CH REACTED TOTAL	**1.96E+06**
CH UNREACTED TOTAL	**0.00E+00**
CH BOTH TOTAL	**6.55E+06**
CH GRAND TOTAL	**8.52E+06**
RH REACTED TOTAL	**6.79E+03**
RH UNREACTED TOTAL	**0.00E+00**
RH BOTH TOTAL	**1.47E+02**
RH GRAND TOTAL	**6.94E+03**
CH AND RH REACTED TOTAL	**1.97E+06**
CH AND RH UNREACTED TOTAL	**0.00E+00**
CH AND RH BOTH TOTAL	**6.55E+06**
GRAND TOTAL	**8.52E+06**

2023 Estimated Cement Mass Scaled Totals

Site ID (Handling)	Cement (kg)
IN Total (CH)	6.22E+06
IN Total (RH)	1.26E+02
LA Total (CH)	1.64E+06
LL Total (CH)	2.25E+05
NT Total (CH)	3.62E+03
OR Total (CH)	7.88E+01
RF Total (CH)	3.58E+05
RL Total (CH)	8.22E+04
RL Total (RH)	2.78E+03
SA Total (CH)	5.00E-03
SP Total (RH)	3.32E+02
SR Total (CH)	1.24E+04
SR Total (RH)	1.42E+03
CH TOTAL	**8.54E+06**
RH TOTAL	**4.66E+03**
GRAND TOTAL	**8.55E+06**
CH REACTED TOTAL	**1.99E+06**
CH UNREACTED TOTAL	**0.00E+00**
CH BOTH TOTAL	**6.55E+06**
CH GRAND TOTAL	**8.54E+06**
RH REACTED TOTAL	**4.57E+03**
RH UNREACTED TOTAL	**0.00E+00**
RH BOTH TOTAL	**8.63E+01**
RH GRAND TOTAL	**4.66E+03**
CH AND RH REACTED TOTAL	**1.99E+06**
CH AND RH UNREACTED TOTAL	**0.00E+00**
CH AND RH BOTH TOTAL	**6.55E+06**
GRAND TOTAL	**8.55E+06**

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