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Engineering Design File

PROJECT NO. 23927

Waste Inventory of Area G in Pit 4 for the Accelerated Retrieval Project within the Radioactive Waste Management Complex

INEEL
Idaho National Engineering and Environmental Laboratory

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1. Title: Waste Inventory of Area G in Pit 4 for the Accelerated Retrieval Project within the Radioactive Waste Management Complex

2. Index Codes:
Building/Type NA SSC ID NA Site Area RWMC

3. NPH Performance Category: _____ or ☒ N/A

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5. Summary:

This engineering design file summarizes information on the volumes and types of waste disposed of in Area G of Pit 4 of the Radioactive Waste Management Complex from December 1965 to April 1967. Revision 1 of this document includes only format and editorial changes.

The number of containers, estimated weights, and estimated as-disposed volumes of waste disposed of in Area G are summarized below:

Waste Category	Number of Containers	Weight (lb)	Volume (ft^3)
Series 741 sludge	886	450,640	6,514
Series 742 sludge	770	376,374	5,656
Series 743 sludge	634	339,609	4,662
Series 744 sludge	81	38,188	597
Beryllium	187	41,645	1,368
Roaster oxide	109	73,909	801
Graphite	490	115,299	3,599
Filters	681	125,892	12,331
RFP comb debris	1,911	212,674	14,041
RFP metal debris	1,585	622,379	32,688
RFP mixed debris	1,341	192,904	12,796
Non-RFP sludge	3	42,000	1,272
Non-RFP comb debris	13	22,500	1,715
Non-RFP metal debris	32	196,919	14,920
Non-RFP mixed debris	39	140,650	7,891
Totals	8,762	2,991,581	120,851

6. Review (R) and Approval (A) and Acceptance (Ac) Signatures:
(See instructions for definitions of terms and significance of signatures.)

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Waste Inventory of Area G in Pit 4 for the Accelerated Retrieval Project within the Radioactive Waste Management Complex

1. INTRODUCTION

The Radioactive Waste Management Complex at the Idaho National Engineering Laboratory (INEEL) was used for subsurface disposal of transuranic (TRU) waste in various pits and trenches of the Subsurface Disposal Area (SDA) from 1952 until 1970, when the practice was suspended in favor of aboveground, retrievable storage. Low-level waste (LLW) from the INEEL and elsewhere was also disposed of in these pits and trenches. As part of a Comprehensive Environmental Response, Compensation, and Liability Act (42 USC § 9601 et seq., 1980) non-time critical removal action (NTCRA), the U.S. Department of Energy proposes to retrieve some of this waste in the SDA. The Accelerated Retrieval Project intends to retrieve and process waste from Area G in Pit 4 of the SDA within the Radioactive Waste Management Complex as the first area to be remediated under this NTCRA.

2. SITE LOCATION

A study was conducted as part of the Pit 9 Stage III Project to evaluate and prioritize various areas of the SDA for possible removal of TRU contamination and hazardous volatile organic compounds. These areas (A through J) were evaluated against a number of criteria (e.g., total TRU content, total volatile organic compound content, and accessibility). Area G of Pit 4 was selected as the preferred site for the first NTCRA. Pit 4 is located in about the center of the SDA Area G is located in the eastern half of Pit 4. Specific coordinates are described in Table 1.

Table 1. Spatial coordinates for Area G.

Corner	Easting	Northing
NW	266741.77	669377.78
NE	266943.95	669366.06
SE	266939.39	669258.62
SW	266741.77	669269.04

As can be determined from these coordinates, Area G is not a proper rectangle. The approximate dimensions of Area G are 202 ft (east-west) by 108 ft (north-south).

3. WASTE DISPOSAL INFORMATION

Both TRU waste and LLW were disposed of in Pit 4. Waste was generally disposed of from west to east over time. The majority of waste came from the Rocky Flats Plant (RFP) near Denver, Colorado, and has varying levels of TRU contamination. The LLW came from various INEEL generators as well as some off-INEEL generators. For Pit 4, the disposal process historically involved excavating an area in the SDA to the outcroppings of the basalt bedrock, backfilling the area with 2 ft (nominally) of soil, and disposing of the waste containers in a random fashion. There was no stacking of containers in Area G although containers may have been stacked in earlier disposal efforts at the west end of Pit 4.

Disposal sheets for non-RFP shipments and trailer load lists for the RFP shipments are the ultimate source for the disposal locations and waste type designations (Clements 1982). These sheets are presently maintained in the OU 13/14 Project file, which is located in the Technical Support Building in Idaho Falls. The disposal sheets are also available from INEEL Electronic Document Management System. The location of the disposal, and in some cases, the area that the disposed containers covered were recorded for each shipment to some extent. For instance, some disposal records simply identify a point measured from a survey marker (or monument) while others provide a range of the area covered, such as 300 to 310 ft west and 70 to 90 ft north of the southeast monument. The trailer load lists (for RFP shipments) and the disposal sheets also identify weights and volumes for the shipments (in most cases) but provide little information on the radioactive content in the shipment.

The information from the original shipments was transferred to the INEEL Geographical Information System, from which reports were developed. In some cases, actual disposal records were used to resolve discrepancies identified during this effort. During review of the disposal locations, it was noted that several shipments dated in 1963 that were collocated with the shipments dated in the December 1965 through April 1967 time frame. It was concluded that these 1963 shipments were, in fact, to the west of Area G because the survey markers had been moved. The 1963 shipments are not considered in this inventory.

The estimated locations of the disposal shipments are depicted in Figure 1.

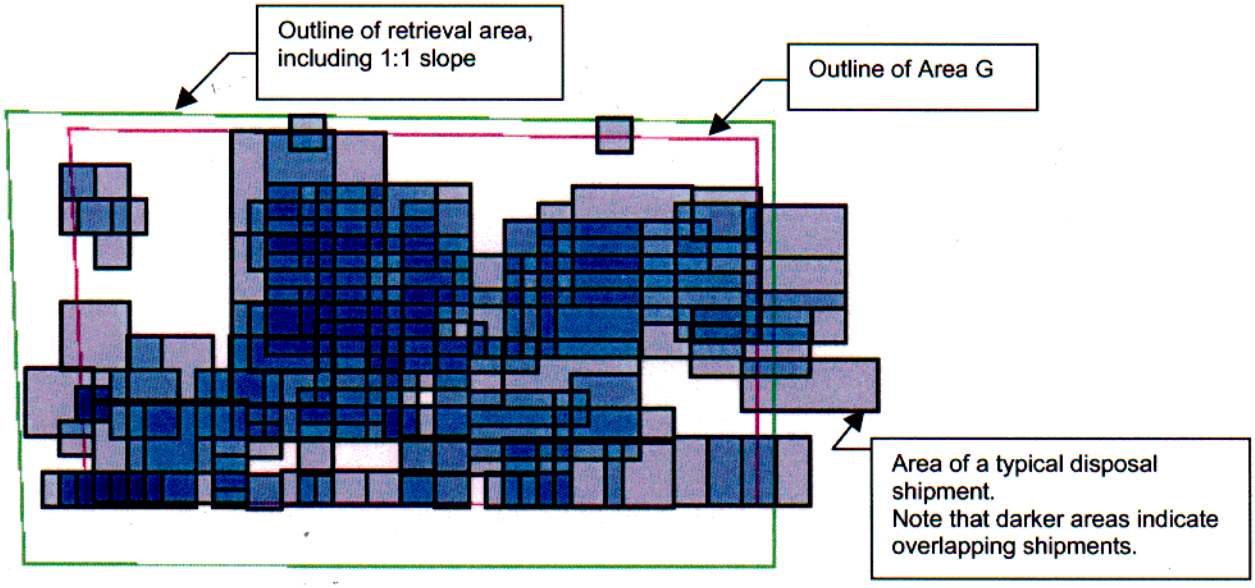

Figure 1. Disposal shipment locations in Area G of Pit 4.

Once the disposal shipments that reside completely or partially in Area G were identified, the Waste Inventory Location Database (WILD) was queried to determine the types of wastes that were included in each disposal shipment. Typically, a shipment would contain various types of wastes. The types of waste varied by generator. The RFP generated waste was divided, on the trailer load lists, into general categories as shown in Table 2.

Table 2. Rocky Flats Waste Types

Type	Description
Type I	Combustibles (e.g., paper, rags, and wood)
Type II	Glass and ceramics
Type III	Chemical Warfare System high efficiency particulate air filters
Type IV	Sludges from coprecipitation treatment
Type V	Non-combustibles, scrap metal, and brick
Type VI	Empties (included in WILD as Type V)
Type VII	Series743 Sludge (included in WILD as Type IV)

WILD = Waste Inventory Location Database

In developing the data for WILD, these types were converted to more descriptive categories based on additional information such as the RFP building designators and knowledge of the operations in those buildings. The waste categories used in WILD are described below. The descriptions of the various types of sludge were taken from Clements (1982).

Series 741 sludge, also called first stage sludge: Series 741 sludge was produced from aqueous wastes from various plutonium recovery operations. The process produced a precipitate of hydrated oxides of iron, magnesium, aluminum, and silicon that also carried some hydrate plutonium and americium oxides. The precipitates were filtered to produce a sludge containing 50 to 70 wt% water. The water was absorbed, to some extent, by the addition of Portland cement.

Series 742 sludge, also called second stage sludge: Series 742 sludge was generated in a fashion similar to the Series 741 sludge from various RFP aqueous streams that were lower in TRU content that the streams generating the Series 741 sludge and generally contain lesser amounts of plutonium or americium.

Series 743 sludge, also called organic setups: Series 743 sludge is very different from the Series 741 and 742 types of sludge. Series 743 sludge is the result of stabilizing various organic waste (e.g., carbon tetrachloride, trichloroethylene, tetrachloroethylene, Texaco Regal Oil, and other miscellaneous oils and degreasing agents). These types of liquid waste were mixed with calcium silicate to form a grease or paste-like substance. Waste containers designated as 74A on the trailer load lists are thought to be a precursor to the Series 743 sludge and are included in this category.

Series 744 sludge, also called special setups: Series 744 sludge contains organic liquids that were stabilized with cement rather than calcium silicate. Containers of Series 745 sludge are expected to be firm monoliths.

Series 745 sludge, also called evaporator salts: Series 745 sludges are nitrate salt residues from solar evaporation ponds that were used at one time at RFP. The chemical make-up of these salts is expected to be 60% sodium nitrate, 30% potassium nitrate, and 10% miscellaneous inorganic compounds. This waste stream was generated from the liquid effluent from the second stage treatment process and, as a result, expected to be very low in TRU content.

Beryllium waste: Waste identified as coming from RFP buildings 444, 776 or 777 and designated on the trailer load lists as containing beryllium was categorized as beryllium waste. It is not clear whether

this material was beryllium metal, other materials that were contaminated beryllium, or a combination of the two.

Roaster oxide waste: Some types of waste from RFP Building 444 were designated as RO, for roaster oxide. This roaster oxide waste is incinerated depleted uranium.

Graphite waste: Graphite was used as molds for certain casting operations. The plutonium was recovered to the extent practical from the graphite before it (the graphite) was disposed of. Data from various studies and measurements indicate that these graphite wastes may have some of the highest TRU contamination levels.

Filters: This category is expected to contain the various high-efficiency particulate air filters. Other types of process filters may also be included in the shipments designated as filters in WILD.

Combustible debris: Waste comprising paper, plastic, wood, and other combustible materials was designated as combustible debris.

Metal debris: Waste that was predominantly metallic (e.g., pipe, conduit, and empty drums) was designated as metal debris.

Mixed debris: General waste that includes combustible materials, glass, sand, and metal was lumped into the mixed debris category.

These last three categories (i.e., combustible, metal, and mixed debris) contained both RFP-generated waste and INEEL or other waste generator waste.

To provide more detail about the source and types of waste, the shipping data were reviewed and four categories were developed in addition to the WILD categories described above. These additional categories are non-RFP sludge, non-RFP combustible debris, non-RFP metal debris, and non-RFP mixed debris. These types of non-RFP waste are anticipated to have been very lightly contaminated with TRU (if at all) when they were disposed of.

Large objects: While not specifically identified in WILD, it was noted in the review of the records that three shipments could potentially be classified as large objects. All three shipments are from Test Area North (TAN). The first shipment, TAN633SR005/02/661, was recorded as weighing 9 tons and consisting of the ML-1 reactor skid and shielding. This shipment is also recorded as having 20 Ci of activity and having a 30 mrem/hour dose rate on contact. The other two, shipments TAN607SR005/16/661 and TAN607SR005/17/661, were associated with a refueling machine support structure and 046 fixture (no other description available) and had dose rates of 150 mrem/hour on contact.

4. WASTE VOLUMES

The shipping data recorded (for the most part) the volume and weight of the disposal shipment. The volumes were, in most cases, the volumes of the containers, as disposed. In other words, the volume of a 55-gal drum was recorded as "55 gals" (or 7.4 ft^3). In some cases (e.g., dumpsters), the volume recorded may be the volume of the dumpster, not the actual volume of the waste. Thus, the volume of waste in the various waste categories probably over-estimates the actual as-disposed volume. Note that the retrieved volume is expected to be much less because the waste was likely to be compressed during pit disposal operations and the containers are probably substantially corroded. The weights were recorded in pounds. In some cases, the weights were not recorded, so the total weights for the various waste categories

under-estimate the actual waste weights. Appendix A contains a summary of waste types by disposal ID number for the waste inventory contained in Area G and the surrounding angle of repose.

Waste was received in a number of container types, and in many cases the exact container type was not specified. At this point, the container type is probably not a major concern because most of the containers are expected to be significantly degraded. Generally, however, all types of sludge were contained in 55-gal drums.

The container counts, as-disposed weights, and as-disposed volumes are shown in Table 3.

Table 3. Summary of as-disposed volumes and weights for all shipments intersecting Area G of Pit 4.

Waste Category	Number of Containers	Weight (lb)	Volume (ft^3)
Series 741 sludge	886	450,640	6,514
Series 742 sludge	770	376,374	5,656
Series 743 sludge	634	339,609	4,662
Series 744 sludge	81	38,188	597
Beryllium	187	41,645	1,368
Roaster oxide	109	73,909	801
Graphite	490	115,299	3,599
Filters	681	125,892	12,331
RFP comb debris	1,911	212,674	14,041
RFP metal debris	1,585	622,379	32,688
RFP mixed debris	1,341	192,904	12,796
Non-RFP sludge	3	42,000	1,272
Non-RFP comb debris	13	22,500	1,715
Non-RFP metal debris	32	196,919	14,920
Non-RFP mixed debris	39	140,650	7,891
Totals	8,762	2,991,581	120,851

These volumes have been adjusted for disposal shipments that intersect the boundaries of the retrieval area. In other words, if part of a disposal shipment was within the retrieval area, the fraction of the disposal shipment that was outside the boundary was ignored. This may slightly over-estimate the amount of waste to be retrieved because the slope of the retrieval pit will intersect the waste zone on the north and east sides of the pit (i.e., some waste may be left in the retrieval area).

The current plan for retrieving material from Area G involves four campaigns of about 6 months each. Each campaign will retrieve one-quarter of the pit (moving from west to east). The approximate as-disposed volumes of waste that will be retrieved in each campaign are presented in Table 4.

Table 4. Summary of as-disposed volumes by Area G campaign.

Waste Category	Volume in Campaign 1 (ft^3)	Volume in Campaign 2 (ft^3)	Volume in Campaign 3 (ft^3)	Volume in Campaign 4 (ft^3)	Total Volumes (ft^3)
Series 741 sludge	691	2,275	2,168	1,380	6,514
Series 742 sludge	1,331	1,968	1,892	465	5,656
Series 743 sludge	49	709	1,483	2,421	4,662
Series 744 sludge	0	2	269	326	597
Beryllium	193	768	328	79	1,368
Roaster oxide	198	122	311	170	801
Graphite	486	2,569	246	298	3,599
Filters	1,964	1,759	3,771	4,837	12,331
RFP comb debris	2,058	6,938	3,691	1,354	14,041
RFP metal debris	943	5,228	15,343	11,176	32,688
RFP mixed debris	1,984	1,135	4,320	5,357	12,796
Non-RFP sludge	0	324	948	0	1,272
Non-RFP comb debris	82	1,133	500	0	1,715
Non-RFP metal debris	11,275	3,283	327	34	14,920
Non-RFP mixed debris	2,175	3,658	2,053	5	7,891
Totals	23,429	31,871	37,650	27,902	120,851

5. CONCLUSIONS AND RECOMMENDATIONS

It is interesting to note that almost half of the volume in Campaign 1 is non-RFP metal debris. Closer inspection of the disposal information indicates that this large volume is due to two shipments from TAN, recorded as a refueling machine support structure and some sort of fixture for the same (presumably) refueling machine. It is quite likely that these items would remain in the pit (large objects).

The information presented here is based on the best information available about disposals in Area G of Pit 4. It should be noted, however, that these data are approximate, at best. As noted previously, the location information for the shipments can be as little as a single point, with no indication of the area that was actually covered when the shipment was dumped into the pit. The volume information is imprecise as well. In some cases, the volume of the shipment may have been recorded as the volume of the dumpster in which it arrived at the site rather than the actual volume of waste in the dumpster. Similarly, the volume of a large shipment may have been recorded as the "bounding box" for the waste. Review of the data also indicate that, in some cases of overlapping shipments, more waste volume is attributed to an area of the pit than is physically possible.

Nonetheless, the data presented here are believed to be the best data available and should be used as the design basis for the Accelerated Retrieval Project.

6. REFERENCES

42 USC § 9601 et seq., 1980, "Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA/Superfund)," *United States Code,* December 11, 1980.

Clements, Jr., T. L., 1982, *Content Code Assessments for INEL Contact-Handled Stored Transuranic Wastes*, WM-F1-82-021, Idaho National Engineering and Environmental Laboratory, October 1982.

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Appendix A

Summary of Waste Types by Disposal ID Number for the Waste Inventory Contained in Area G and the Surrounding Angle of Repose

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Table A-1. Summary of waste types by disposal ID number for the waste inventory contained in Area G and the surrounding angle of repose.

						Volumes by Type (ft^3)															
Document ID Number (Sorted by ID)	Disposal Date	Cell ID	Number of Containers	Weight (lb)	Volume (ft^3)	Series 741 Sludge	Series 742 Sludge	Series 743 Sludge	Series 744 Sludge	Series 745 Sludge	Be	Roaster Oxide	Graphite	Filters	Comb Debris	Metal Debris	Mixed Debris	Non-RFP Sludge	Non-RFP Comb Debris	Non-RFP Metal Debris	Non-RFP Mixed Debris
ANL601SR012/20/66800	12/20/66	10	1	200	35	0	0	0	0	0	0	0	0	0	0	0	0	0	35	0	0
ANL767SR007/12/661	7/28/66	NA	1	3000	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34	0
ANL767SR010/13/663	10/14/66	12	1	75	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0
ARA602SR008/09/661	8/9/66	14	1	1200	252	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	252
ARA602SR008/10/661	8/11/66	16	1	300	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48
ARA602SR012/15/65830	12/16/65	14	1	20000	1200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1200
ARA602SR012/17/65800	12/17/65	15	1	1000	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50
ARA602SR012/17/65810	12/17/65	16	1	1000	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50
ARA602SR012/17/65820	12/17/65	10	1	4000	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100
CFA601SR005/05/661	5/6/66	16	1	1000	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100
CFA601SR005/06/662	5/6/66	16	1	150	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0
CFA601SR006/17/661	6/27/66	16	1	6000	656	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	656
CFA633SR005/06/661	5/6/66	16	1	300	72	0	0	0	0	0	0	0	0	0	0	0	0	0	72	0	0
CFA633SR006/23/662	6/27/66	16	1	80	4	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0
CFA654SR011/23/66800	11/23/66	8	1	18000	948	0	0	0	0	0	0	0	0	0	0	0	0	948	0	0	0
CFA687SR008/16/661	8/16/66	16	1	1000	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0
CFA690SR005/04/663	5/6/66	16	1	45	12	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0
CPP601SR001/03/67800	1/3/67	8	1	500	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	80
CPP601SR001/05/67800	1/5/67	8	1	1000	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42
CPP601SR001/09/67800	1/9/67	6	1	800	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40
CPP601SR001/23/67800	1/23/67	7	1	1500	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	80
CPP601SR004/26/662	4/28/66	NA	1	2000	108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	108
CPP601SR005/06/663	5/6/66	16	1	400	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	80
CPP601SR005/20/661	5/20/66	8	1	1000	220	0	0	0	0	0	0	0	0	0	0	0	0	0	220	0	0
CPP601SR005/24/662	5/24/66	NA	1	1500	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
CPP601SR006/15/661	6/15/66	16	1	1000	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100
CPP601SR006/15/662	6/15/66	16	1	1000	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100
CPP601SR006/16/661	6/16/66	16	1	1000	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100
CPP601SR007/27/662	7/27/66	12	1	500	54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54	0
CPP601SR007/28/662	7/28/66	12	1	300	54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54	0
CPP601SR008/09/661	8/9/66	NA	1	300	84	0	0	0	0	0	0	0	0	0	0	0	0	0	0	84	0
CPP601SR008/15/661	8/15/66	16	1	4000	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48	0
CPP601SR008/15/662	8/15/66	16	1	6000	72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	72	0
CPP601SR008/18/661	8/18/66	14	1	1500	81	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	81
CPP601SR008/25/661	8/25/66	6	1	3000	108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	108	0
CPP601SR008/25/664	8/25/66	8	1	3000	108	0	0	0	0	0	0	0	0	0	0	0	0	0	108	0	0

Table A-1. (continued).

Document ID Number (Sorted by ID)	Disposal Date	Cell ID	Number of Containers	Weight (lb)	Volume (ft^3)	Volumes by Type (ft^3)															
						Series 741 Sludge	Series 742 Sludge	Series 743 Sludge	Series 744 Sludge	Series 745 Sludge	Be	Roaster Oxide	Graphite	Filters	Comb Debris	Metal Debris	Mixed Debris	Non-RFP Sludge	Non-RFP Comb Debris	Non-RFP Metal Debris	Non-RFP Mixed Debris
CPP601SR010/07/661	10/7/66	14	1	1000	100	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0
CPP601SR011/07/663	11/7/66	12	1	2000	192	0	0	0	0	0	0	0	0	0	0	0	0	0	0	192	0
CPP601SR012/15/661	12/15/66	10	1	2000	96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	96
CPP601SR012/16/661	12/16/66	10	1	1500	96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	96
CPP601SR012/16/662	12/16/66	12	1	1000	48	0	0	0	0	0	0	0	0	0	0	0	0	0	48	0	0
CPP601SR012/19/661	12/19/66	12	1	1000	96	0	0	0	0	0	0	0	0	0	0	0	0	0	96	0	0
CPP601SR012/19/662	12/19/66	14	1	2000	120	0	0	0	0	0	0	0	0	0	0	0	0	0	120	0	0
CPP601SR012/20/661	12/20/66	12	1	1500	140	0	0	0	0	0	0	0	0	0	0	0	0	0	140	0	0
CPP601SR012/20/662	12/20/66	10	1	1500	150	0	0	0	0	0	0	0	0	0	0	0	0	0	150	0	0
CPP601SR012/21/661	12/21/66	12	1	500	108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	108
CPP601SR012/23/661	12/23/66	10	1	4000	350	0	0	0	0	0	0	0	0	0	0	0	0	0	350	0	0
CPP601SR012/27/661	12/27/66	10	1	2000	96	0	0	0	0	0	0	0	0	0	0	0	0	0	96	0	0
CPP601SR012/28/661	12/28/66	10	1	4000	180	0	0	0	0	0	0	0	0	0	0	0	0	0	180	0	0
CPP601SR012/30/661	12/30/66	10	1	2000	144	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	144
CPP630SR002/03/67800	2/7/67	9	1	4000	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60	0
NRF601SR007/27/664	7/29/66	6	1	0	162	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	162
NRF618SR001/19/67800	1/19/67	8	1	0	140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	140	0
NRF618SR002/17/67810	2/17/67	7	1	6000	270	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	270
NRF618SR007/07/661	7/7/66	10	1	0	250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	250
NRF618SR007/22/664	7/22/66	10	1	0	380	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	380
NRF618SR008/10/662	8/10/66	14	1	3000	384	0	0	0	0	0	0	0	0	0	0	0	0	0	0	384	0
PER601SR005/06/661	5/6/66	16	1	150	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60
PER601SR005/12/662	5/13/66	NA	1	2500	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	0
PER601SR005/13/661	5/13/66	16	1	1000	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50
RFODOWSR101/06/67800	1/13/67	7	17	29300	2074	0	0	0	0	0	0	0	0	244	0	854	976	0	0	0	0
RFODOWSR101/06/67810	1/13/67	9	153	38629	1125	184	81	103	0	0	0	0	0	0	52	154	551	0	0	0	0
RFODOWSR101/06/67820	1/13/67	9	149	40370	1095	110	125	132	0	0	0	0	0	0	15	169	544	0	0	0	0
RFODOWSR101/06/67830	1/13/67	9	152	38502	1117	110	96	132	0	0	7	0	7	0	427	338	0	0	0	0	0
RFODOWSR101/16/67800	1/20/67	9	152	41081	1118	147	140	59	0	0	0	51	0	0	353	147	221	0	0	0	0
RFODOWSR101/16/67810	1/20/67	19	152	36636	1117	176	88	74	0	0	0	0	0	0	30	191	558	0	0	0	0
RFODOWSR101/20/67800	1/27/67	4	18	25800	2093	0	0	0	0	0	0	0	0	968	0	0	1125	0	0	0	0
RFODOWSR101/20/67810	1/27/67	9	151	31126	1110	0	0	0	0	0	88	140	29	0	486	323	44	0	0	0	0
RFODOWSR101/20/67820	1/27/67	9	151	38828	1111	250	66	37	0	0	0	0	29	0	287	199	243	0	0	0	0
RFODOWSR101/20/67830	1/27/67	19	76	32339	558	206	243	51	0	0	0	0	0	0	7	0	51	0	0	0	0
RFODOWSR101/27/67800	2/3/67	7	76	36031	559	0	257	243	0	0	0	0	0	0	0	0	59	0	0	0	0
RFODOWSR101/27/67810	2/3/67	7	151	38600	1111	88	140	81	29	0	0	0	0	0	0	214	559	0	0	0	0

Table A-1. (continued).

Document ID Number (Sorted by ID)	Disposal Date	Cell ID	Number of Containers	Weight (lb)	Volume (ft^3)	Volumes by Type (ft^3)															
						Series 741 Sludge	Series 742 Sludge	Series 743 Sludge	Series 744 Sludge	Series 745 Sludge	Be	Roaster Oxide	Graphite	Filters	Comb Debris	Metal Debris	Mixed Debris	Non-RFP Sludge	Non-RFP Comb Debris	Non-RFP Metal Debris	Non-RFP Mixed Debris
RFODOWSR101/27/67820	2/3/67	7	76	35309	559	0	397	125	0	0	0	0	0	0	0	0	37	0	0	0	0
RFODOWSR101/27/67830	2/3/67	7	76	36021	558	0	176	301	22	0	0	0	0	0	0	0	59	0	0	0	0
RFODOWSR102/03/67800	2/10/67	7	151	34668	1108	323	0	0	0	0	0	0	81	0	359	154	191	0	0	0	0
RFODOWSR102/03/67810	2/10/67	7	151	27431	1109	0	0	0	0	0	66	74	7	0	272	330	353	0	0	0	0
RFODOWSR102/10/67800	2/17/67	7	151	26955	1110	0	0	0	0	0	96	0	44	0	551	390	29	0	0	0	0
RFODOWSR102/10/67810	2/17/67	7	76	35369	558	169	118	169	44	0	0	0	7	0	29	22	0	0	0	0	0
RFODOWSR102/10/67820	2/20/67	5	149	36404	1095	316	7	0	0	0	0	0	15	0	529	228	0	0	0	0	0
RFODOWSR102/10/67830	2/20/67	5	152	36266	1119	265	66	96	15	0	0	0	0	0	118	140	419	0	0	0	0
RFODOWSR102/17/67800	2/23/67	5	274	27675	1727	0	0	0	0	0	110	74	0	1168	103	272	0	0	0	0	0
RFODOWSR102/17/67810	2/23/67	5	76	31255	558	272	103	7	59	0	0	0	0	0	66	51	0	0	0	0	0
RFODOWSR102/17/67820	2/24/67	5	154	35879	1132	0	37	287	125	0	0	0	0	0	110	573	0	0	0	0	0
RFODOWSR102/17/67830	2/24/67	1	14	32300	1584	0	0	0	0	0	0	0	0	785	0	0	797	0	0	0	0
RFODOWSR102/24/67800	3/3/67	5	152	35910	1118	221	66	118	44	0	0	0	0	0	37	559	73	0	0	0	0
RFODOWSR102/24/67810	3/3/67	5	152	34996	1119	162	74	15	74	0	0	0	29	0	309	103	353	0	0	0	0
RFODOWSR103/03/67800	3/10/67	17	153	32325	1125	0	0	0	0	0	22	154	15	0	242	280	412	0	0	0	0
RFODOWSR103/03/67810	3/10/67	3	152	38507	1115	162	22	132	7	0	0	0	44	0	117	205	426	0	0	0	0
RFODOWSR103/03/67820	3/10/67	3	132	36259	1267	198	29	206	0	0	0	0	0	0	73	746	15	0	0	0	0
RFODOWSR103/03/67830	3/10/67	1	7	33170	822	0	0	0	0	0	0	0	0	0	0	821	0	0	0	0	0
RFODOWSR103/10/67800	3/20/67	3	151	38784	1109	88	37	191	7	0	0	0	59	0	110	118	499	0	0	0	0
RFODOWSR103/10/67810	3/20/67	3	151	38832	1110	103	7	198	15	0	0	0	96	0	73	96	522	0	0	0	0
RFODOWSR103/10/67820	3/20/67	3	153	36299	1124	162	37	206	37	0	0	0	0	0	132	528	22	0	0	0	0
RFODOWSR103/10/67830	3/20/67	3	152	39230	1117	74	0	338	15	0	0	0	15	0	81	220	367	0	0	0	0
RFODOWSR103/17/67800	3/24/67	17	152	37287	1116	66	51	176	29	0	0	0	37	0	132	154	471	0	0	0	0
RFODOWSR103/17/67810	3/24/67	1	151	37089	1109	125	37	191	29	0	7	0	0	0	51	118	551	0	0	0	0
RFODOWSR103/17/67820	3/24/67	1	76	40005	558	44	66	375	15	0	7	0	0	0	7	7	37	0	0	0	0
RFODOWSR103/17/67830	3/24/67	H	4	22700	526	0	0	0	0	0	0	0	0	247	0	31	247	0	0	0	0
RFODOWSR103/31/67800	4/6/67	H	50	37032	368	39	10	68	10	0	0	0	22	0	17	203	0	0	0	0	0
RFODOWSR103/31/67820	4/6/67	H	43	36287	394	27	12	87	10	0	0	0	0	0	43	215	0	0	0	0	0
RFODOWSR103/31/67830	4/6/67	H	24	35668	179	2	26	88	12	0	0	0	0	0	10	41	0	0	0	0	0
RFODOWSR107/08/66810	7/15/66	10	2	36000	1216	0	0	0	0	0	0	0	0	0	0	1216	0	0	0	0	0
RFODOWSR107/08/66820	7/15/66	8	17	25200	2074	0	0	0	0	0	0	0	0	488	0	1586	0	0	0	0	0
RFODOWSR107/22/66820	7/28/66	8	4	25300	1207	0	0	0	0	0	0	0	0	0	0	1207	0	0	0	0	0
RFODOWSR107/22/66830	7/28/66	6	4	23700	1278	0	0	0	0	0	0	0	0	0	0	1278	0	0	0	0	0
RFODOWSR107/29/66820	8/5/66	4	17	27350	2074	0	0	0	0	0	0	0	0	2074	0	0	0	0	0	0	0
RFODOWSR107/29/66830	8/5/66	W of Area G	221	37851	1624	0	0	0	0	0	88	88	22	0	81	294	1051	0	0	0	0
RFODOWSR108/05/66800	8/12/66	4	8	26050	1411	0	0	0	0	0	0	0	0	0	0	1411	0	0	0	0	0

Table A-1. (continued).

Document ID Number (Sorted by ID)	Disposal Date	Cell ID	Number of Containers	Weight (lb)	Volume (ft^3)	Volumes by Type (ft^3)															
						Series 741 Sludge	Series 742 Sludge	Series 743 Sludge	Series 744 Sludge	Series 745 Sludge	Be	Roaster Oxide	Graphite	Filters	Comb Debris	Metal Debris	Mixed Debris	Non-RFP Sludge	Non-RFP Comb Debris	Non-RFP Metal Debris	Non-RFP Mixed Debris
RFODOWSR108/05/66810	8/12/66	2	3	32300	1395	0	0	0	0	0	0	0	0	0	0	1395	0	0	0	0	0
RFODOWSR108/05/66820	8/12/66	15	154	29667	1129	0	0	0	0	0	20	0	125	0	7	44	933	0	0	0	0
RFODOWSR108/05/66830	8/12/66	20	220	37206	1617	0	0	0	0	0	81	110	7	0	1125	294	0	0	0	0	0
RFODOWSR108/12/66820	8/19/66	7	17	21350	2074	0	0	0	0	0	0	0	0	488	0	1586	0	0	0	0	0
RFODOWSR108/19/66800	8/30/66	20	72	36296	529	0	529	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RFODOWSR108/19/66810	8/30/66	15	72	36208	529	250	279	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RFODOWSR108/25/66800	8/30/66	2	9	30800	1077	0	0	0	0	0	0	0	0	126	0	951	0	0	0	0	0
RFODOWSR108/25/66810	8/30/66	6	17	26400	1934	0	0	0	0	0	0	0	0	122	0	1812	0	0	0	0	0
RFODOWSR109/12/66800	9/15/66	20	76	32792	559	265	176	0	0	0	0	0	0	0	59	59	0	0	0	0	0
RFODOWSR109/12/66810	9/15/66	16	292	40505	1531	176	176	0	0	0	0	0	0	972	134	73	0	0	0	0	0
RFODOWSR109/23/66820	9/30/66	14	16	25200	1982	0	0	0	0	0	0	0	0	488	0	1494	0	0	0	0	0
RFODOWSR109/30/66800	10/7/66	14	268	32997	1730	0	0	0	0	0	0	0	397	1171	0	162	0	0	0	0	0
RFODOWSR109/30/66810	10/7/66	14	150	31353	1102	0	206	59	0	0	0	0	0	0	785	52	0	0	0	0	0
RFODOWSR109/30/66820	10/7/66	6	8	18000	1274	0	0	0	0	0	0	0	0	0	0	1274	0	0	0	0	0
RFODOWSR109/30/66830	10/7/66	8	12	21200	954	0	0	0	0	0	0	0	0	0	0	954	0	0	0	0	0
RFODOWSR110/07/66820	10/14/66	8	16	20750	1977	0	0	0	0	0	0	0	0	1098	0	879	0	0	0	0	0
RFODOWSR110/17/66810	10/20/66	19	149	29158	1095	0	0	0	0	0	0	0	551	0	544	0	0	0	0	0	0
RFODOWSR110/17/66820	10/20/66	11	146	26599	1073	0	0	0	0	0	405	0	0	0	610	58	0	0	0	0	0
RFODOWSR110/21/66830	10/28/66	11	18	21250	1967	0	0	0	0	0	0	0	0	1147	0	820	0	0	0	0	0
RFODOWSR110/28/66800	11/4/66	12	76	33679	558	235	235	0	0	0	0	0	0	0	88	0	0	0	0	0	0
RFODOWSR110/28/66810	11/4/66	11	76	32697	559	169	302	0	0	0	0	0	0	0	88	0	0	0	0	0	0
RFODOWSR110/28/66820	11/4/66	6	5	12850	858	0	0	0	0	0	0	0	0	0	0	858	0	0	0	0	0
RFODOWSR110/28/66830	11/4/66	19	154	28205	1131	0	0	0	0	0	0	0	595	0	529	7	0	0	0	0	0
RFODOWSR111/04/66830	11/11/66	6	17	22200	2074	0	0	0	0	0	0	0	0	732	0	1342	0	0	0	0	0
RFODOWSR112/02/66800	12/9/66	9	154	37496	1131	0	294	0	0	0	14	0	36	0	551	236	0	0	0	0	0
RFODOWSR112/02/66810	12/9/66	11	153	31213	1124	0	0	0	0	0	0	0	176	0	558	390	0	0	0	0	0
RFODOWSR112/02/66820	12/9/66	11	152	36221	1117	0	169	125	0	0	0	0	22	0	581	220	0	0	0	0	0
RFODOWSR112/02/66830	12/9/66	11	150	34935	1103	0	125	110	0	0	0	0	0	0	537	331	0	0	0	0	0
RFODOWSR112/09/66800	12/16/66	11	154	25102	1132	0	0	0	0	0	0	0	1132	0	0	0	0	0	0	0	0
RFODOWSR112/09/66810	12/16/66	11	154	29169	1131	0	0	0	0	0	353	110	0	0	632	36	0	0	0	0	0
RFODOWSR112/09/66820	12/16/66	19	76	32540	559	228	154	15	0	0	0	0	0	0	15	147	0	0	0	0	0
RFODOWSR112/09/66830	12/16/66	19	76	32124	557	374	51	22	0	0	0	0	0	0	81	29	0	0	0	0	0
RFODOWSR112/16/66800	12/23/66	9	152	38213	1118	265	59	0	0	0	0	0	0	0	566	228	0	0	0	0	0
RFODOWSR112/16/66810	12/23/66	19	152	30585	1117	0	0	0	0	0	0	0	0	0	559	558	0	0	0	0	0
RFODOWSR112/16/66820	12/23/66	10	76	32901	559	140	287	44	0	0	0	0	0	0	88	0	0	0	0	0	0
RFODOWSR112/16/66830	12/23/66	9	154	38731	1132	323	0	0	0	0	0	0	0	0	595	214	0	0	0	0	0

Table A-1. (continued).

Document ID Number (Sorted by ID)	Disposal Date	Cell ID	Number of Containers	Weight (lb)	Volume (ft^3)	Volumes by Type (ft^3)															
						Series 741 Sludge	Series 742 Sludge	Series 743 Sludge	Series 744 Sludge	Series 745 Sludge	Be	Roaster Oxide	Graphite	Filters	Comb Debris	Metal Debris	Mixed Debris	Non-RFP Sludge	Non-RFP Comb Debris	Non-RFP Metal Debris	Non-RFP Mixed Debris
TAN607SR002/21/67800	2/23/67	18	1	500	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0
TAN607SR005/16/661	5/16/66	16	1	80000	5750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5750	0
TAN607SR005/17/661	5/17/66	16	1	40000	5750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5750	0
TAN607SR007/22/662	7/22/66	10	1	10000	250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	250
TAN607SR007/27/661	7/27/66	12	1	6000	500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500
TAN607SR008/01/662	8/1/66	10	1	20000	600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	600
TAN607SR010/18/661	10/18/66	12	1	12000	162	0	0	0	0	0	0	0	0	0	0	0	0	162	0	0	0
TAN607SR010/20/661	10/24/66	14	1	12000	162	0	0	0	0	0	0	0	0	0	0	0	0	162	0	0	0
TAN607SR012/03/65800	12/3/65	NA	1	4000	240	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	240
TAN633SR004/08/662	5/9/66	16	1	2000	130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	130
TAN633SR005/02/661	5/2/66	16	1	18000	800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	800	0
TRA603SR001/20/67800	1/20/67	9	1	4100	144	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	144
TRA603SR001/20/67810	1/20/67	10	1	1000	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0
TRA603SR006/24/661	6/24/66	12	1	6000	450	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	450
TRA603SR006/24/662	6/24/66	12	1	6000	216	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	216
TRA642SR001/24/67820	1/24/67	10	1	600	200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	200
TRA642SR004/12/661	4/13/66	16	1	3000	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
TRA642SR004/12/663	4/14/66	16	1	3000	108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	108	0
TRA642SR004/13/662	4/13/66	20	1	3000	108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	108	0
TRA642SR004/28/662	4/28/66	NA	1	2000	108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	108	0
TRA642SR004/28/663	4/28/66	NA	1	2000	108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	108	0
TRA642SR005/10/662	5/10/66	14	1	2000	108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	108	0
TRA642SR005/10/664	5/10/66	14	1	2000	108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	108	0
TRA642SR005/11/661	5/12/66	16	1	2000	108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	108	0
TRA642SR005/11/662	5/12/66	16	1	2000	108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	108	0
TRA642SR005/11/663	5/12/66	16	1	2000	108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	108	0
TRA642SR005/13/661	5/16/66	16	1	2000	108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	108	0
TRA642SR011/15/661	11/16/66	10	1	2000	128	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	128
TRA642SR012/20/662	12/20/66	19	1	4000	150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	150
	Totals		8761			6514	5656	4661	597	0	1368	801	3599	12331	14041	32688	12796	1272	1715	14919	7891