

Environmental Defense Institute

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Attachments

for

EDI Comments

**Draft Environmental Impact Statement
for Recapitalization of Infrastructure Supporting**

Naval Spent Nuclear Fuel Handling

Naval Reactors Facility

Idaho National Laboratory

Department of Energy

DOE/EIS-0453-D

Submitted by

Chuck Broscious

August 10, 2015

EDI-Com-NNPP-DEIS.Rev.8

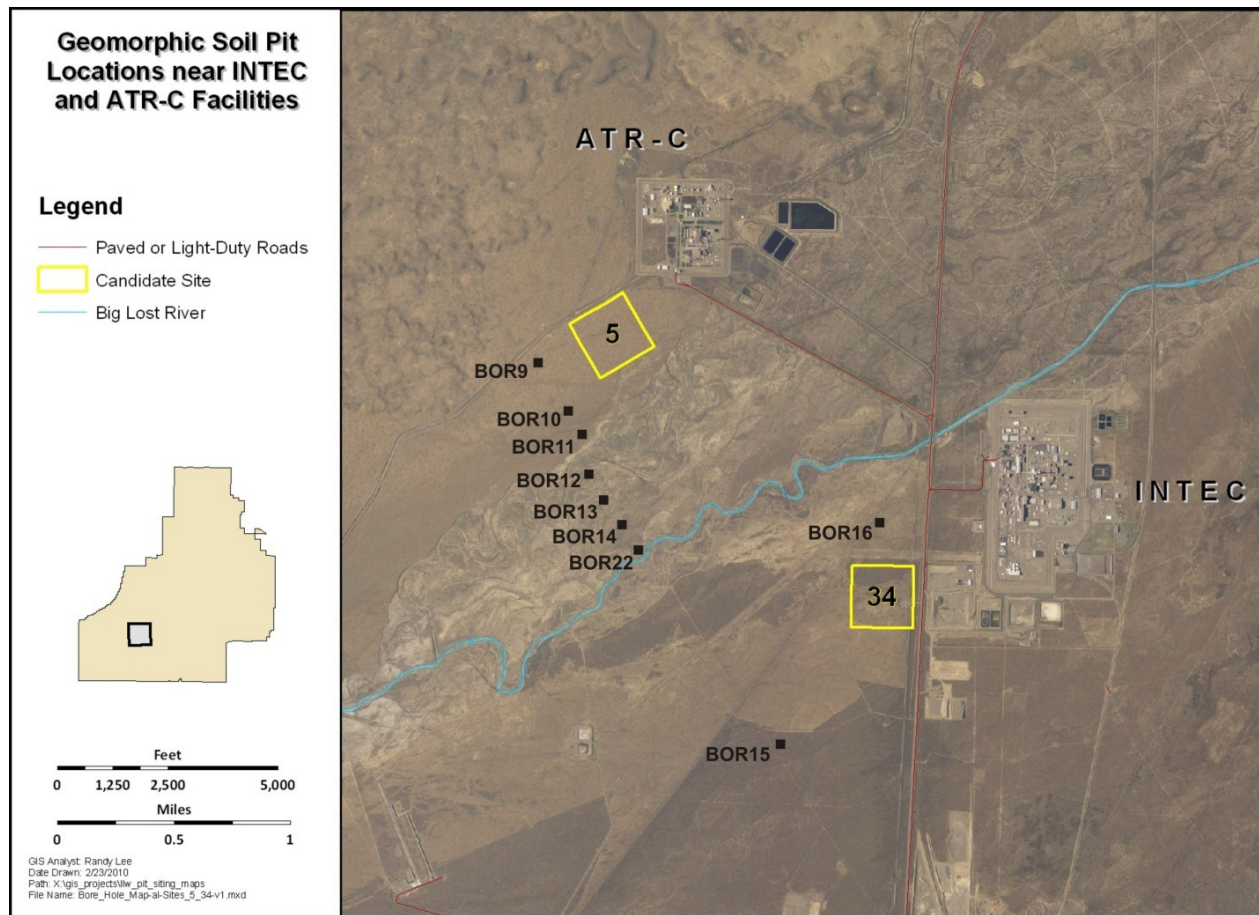


Figure 4. Soil pit locations for the geomorphic evaluation by Ostenaa et al. (1999). Yellow rectangles represent 45-acre areas. The proposed facility will occupy 5 acres within the outlined 45-acre area.

Attachment # 1-B

Yellow square 5 is the location for new Remote-Handled Waste Facility. Compare above yellow 5 location with Attachment # 1 flood hazard area for probable maximum flood-induced over-topping failure of Mackey Dam

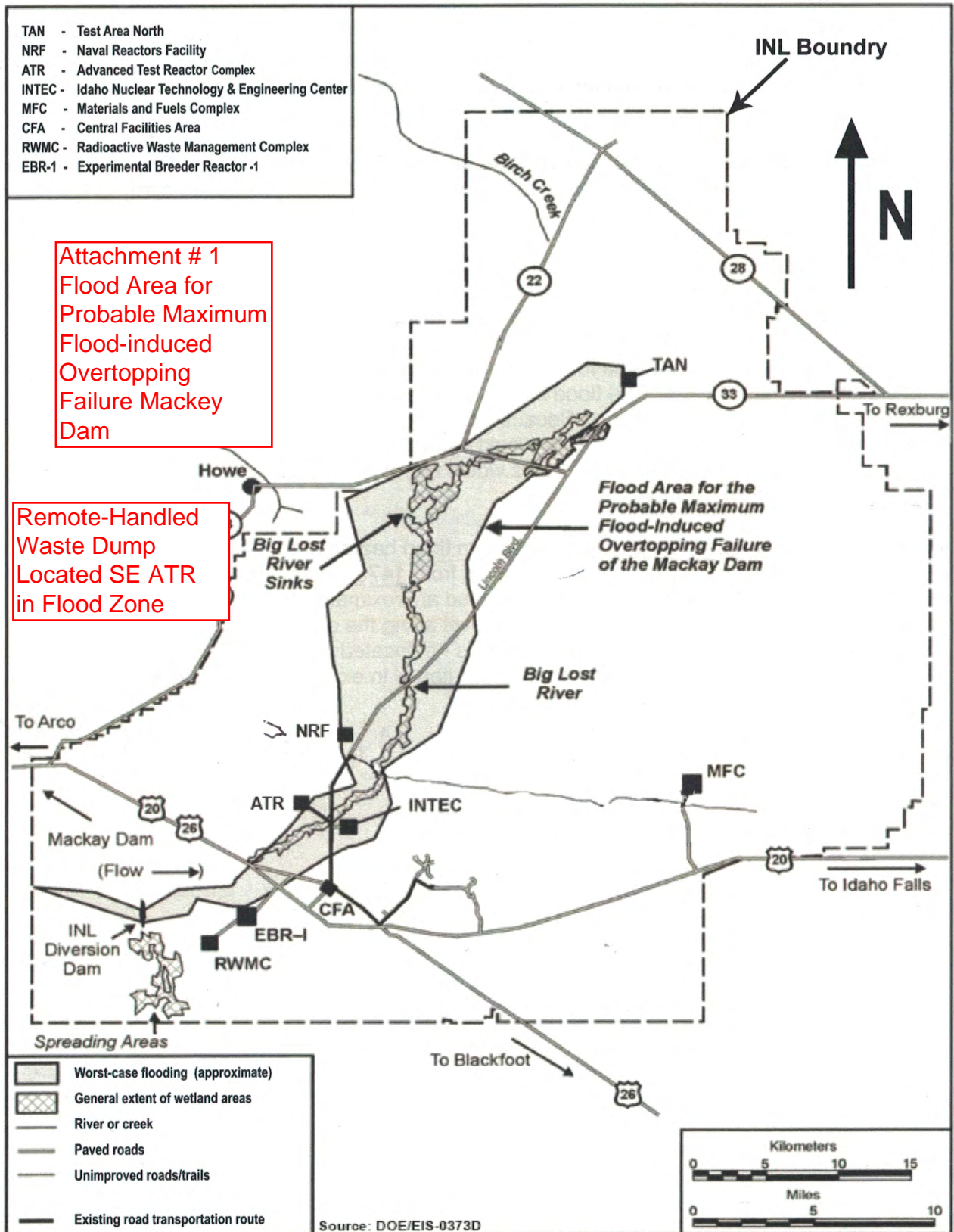
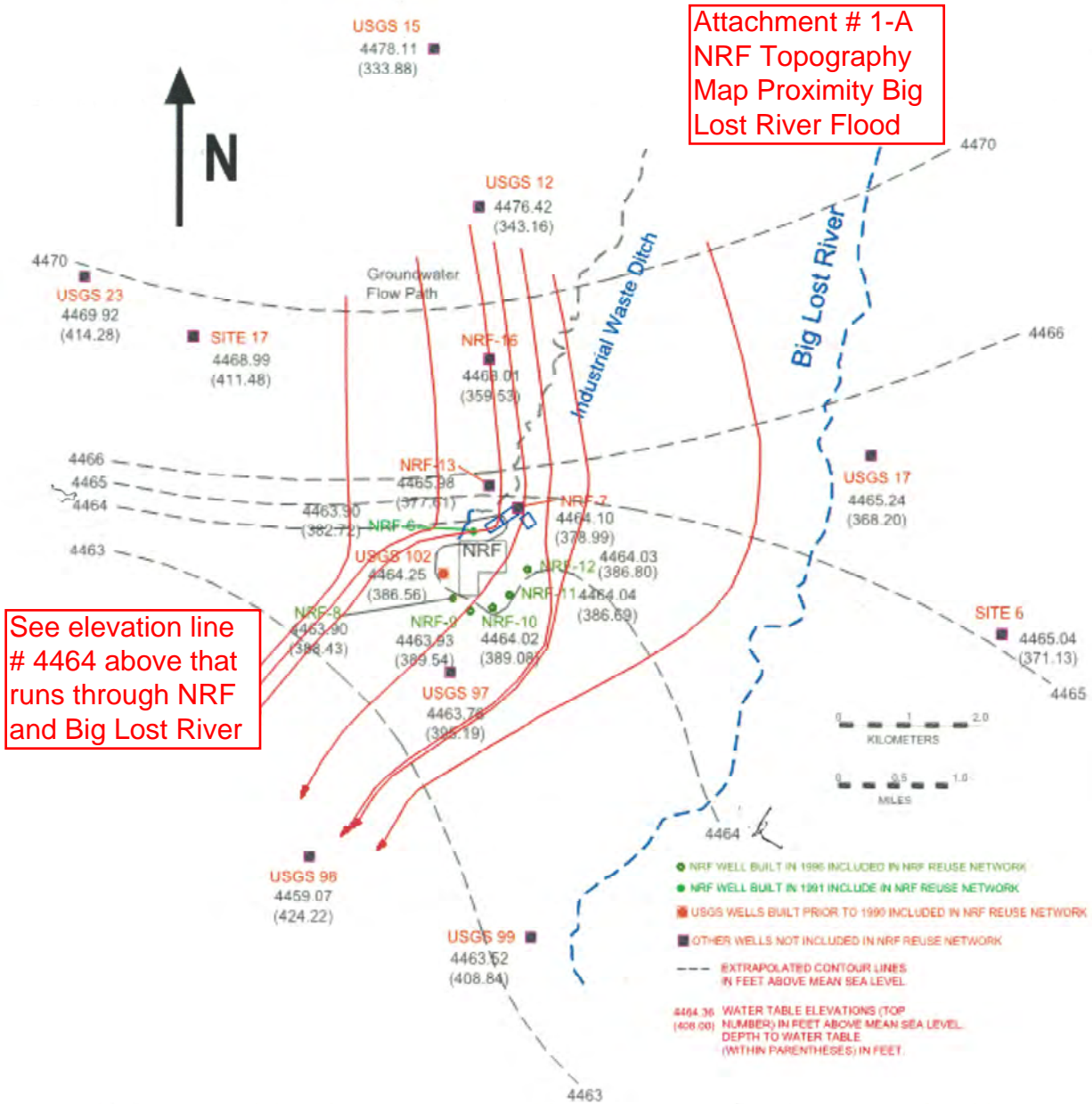


Figure 3.4-4: Surface Water Features, Wetlands, and Flood Hazard Areas at INL



Source: BMPC 2012

Figure 3.4-6: Water Table Contour Map With Direction of Groundwater Flow for NRF

Perched Water

INL

Perched water commonly occurs in the vadose zone (unsaturated zone between the ground surface and the aquifer) below the INL, in areas where a substantial surface recharge source is present. Deeper perched water zones are also known to exist. Perched water occurs when sediments or dense basalt with low permeability impede the downward flow of water to the aquifer. These perched water tables tend to slow the migration of pollutants that might otherwise quickly reach the SRPA. If the basalt surface that causes the perched water to form is sloped, then

Attachment # 2 shows GTCC radioactive waste inventory of 159 mega (million) curies

projects, and new nuclear power plants that have not yet been licensed by the U.S. Nuclear Regulatory Commission or constructed.

The estimated waste volumes and total radionuclide activities for the waste in Groups 1 and 2 are shown in Tables B-4 and B-7 of DOE-EIS (2011) and are reproduced in Table 2. The total waste volume is 11,700 m³ and contains a total of 159 megacuries of radionuclide activity, mainly from decommissioning of commercial nuclear power reactors currently in operation.

Table 2. Radionuclide inventory evaluated in the GTCC EIS (modified from Table B-4 and B-7 of DOE-EIS 2011).

Radionuclide	Activated Metals (Ci)	Sealed Sources (Ci)	Other Waste (Ci)	Total (Ci)	Radionuclide	Activated Metals (Ci)	Sealed Sources (Ci)	Other Waste (Ci)	Total (Ci)
Hydrogen-3	2.40E+05	0.00E+00	4.06E+02	2.41E+05	Thorium-229	1.20E-02	0.00E+00	4.78E+00	4.79E+00
Carbon-14	3.37E+04	0.00E+00	2.82E+02	3.40E+04	Thorium-230	1.30E-04	0.00E+00	8.87E-01	8.87E-01
Magnesium-54	7.20E+04	0.00E+00	4.80E+01	7.20E+04	Protactinium-231	3.00E-02	0.00E+00	5.20E-02	8.20E-02
Iron-55	5.80E+07	0.00E+00	4.08E+01	5.80E+07	Thorium-232	3.20E-03	0.00E+00	1.28E+00	1.28E+00
Nickel-59	1.84E+05	0.00E+00	1.62E+02	1.84E+05	Uranium-232	1.40E+00	0.00E+00	5.58E+01	5.72E+01
Cobalt-60	7.30E+07	0.00E+00	1.26E+03	7.30E+07	Uranium-233	3.80E+00	0.00E+00	8.18E+02	8.22E+02
Nickel-63	2.55E+07	0.00E+00	9.59E+03	2.55E+07	Uranium-234	2.00E-01	0.00E+00	9.40E+01	9.42E+01
Strontium-90	2.50E+04	0.00E+00	1.89E+05	2.14E+05	Uranium-235	7.20E-02	0.00E+00	4.24E+00	4.31E+00
Molybdenum-93	1.57E+02	0.00E+00	5.50E-05	1.57E+02	Uranium-236	1.10E-01	0.00E+00	1.34E+00	1.45E+00
Niobium-94	8.70E+02	0.00E+00	1.27E-01	8.70E+02	Neptunium-237	6.70E-02	0.00E+00	5.02E+00	5.09E+00
Technetium-99	6.40E+03	0.00E+00	1.91E+02	6.59E+03	Uranium-238	8.40E-01	0.00E+00	1.43E+01	1.52E+01
Iodine-129	4.00E+00	0.00E+00	2.76E+00	6.76E+00	Plutonium-238	1.31E+02	1.20E+05	2.65E+04	1.47E+05
Cesium-137	3.60E+04	1.70E+06	4.91E+05	2.23E+06	Plutonium-239	6.60E+03	8.40E+03	5.36E+03	2.04E+04
Promethium-147	1.10E-01	0.00E+00	1.74E+05	1.74E+05	Plutonium-240	1.60E+02	2.20E+01	3.63E+03	3.81E+03
Samarium-151	1.70E+02	0.00E+00	2.40E+03	2.57E+03	Plutonium-241	2.53E+03	0.00E+00	6.25E+04	6.50E+04
Europium-152	6.60E+02	0.00E+00	6.81E+02	1.34E+03	Americium-241	7.84E+02	1.50E+05	1.48E+04	1.66E+05
Europium-154	2.40E+01	0.00E+00	2.80E+02	3.04E+02	Plutonium-242	1.40E-01	0.00E+00	1.36E+01	1.38E+01
Europium-155	1.40E+00	0.00E+00	2.09E+03	2.09E+03	Americium-243	1.10E+00	3.50E-01	1.78E+02	1.79E+02
Lead-210	3.30E-07	0.00E+00	4.12E-06	4.45E-06	Curium-243	1.40E-01	0.00E+00	6.49E+00	6.63E+00
Radium-226	1.50E-06	0.00E+00	9.10E+00	9.10E+00	Curium-244	8.00E+00	7.60E+01	1.02E+04	1.03E+04
Actinium-227	1.10E-02	0.00E+00	9.90E-02	1.10E-01	Curium-245	8.00E-04	0.00E+00	3.40E+02	3.40E+02
Radium-228	3.20E-04	0.00E+00	8.31E-01	8.31E-01	Curium-246	6.40E-05	0.00E+00	5.40E+01	5.40E+01

In the GTCC EIS, waste was considered to be in one of three waste types: (1) activated metals, (2) sealed sources, or (3) other waste as indicated in Table 2. The waste type determines the rate of release into the environment once contacted by infiltrating water. Assumptions used in the GTCC EIS by waste type are as follows:

- **Activated metal waste** was assumed to be released as the metals corrode. The radionuclide release fraction for activated metals was taken to be 1.19×10^{-5} /year in this analysis. This value was attributed to INL (DOE-ID 2007, Adler-Flitton et al. 2004).
- **Radionuclides in sealed sources** were assumed to partition between water and the sealed source matrix. The partition coefficient (K_d) for the sealed source matrix was assumed to be equal to the K_d for the surface soil.
- **Radionuclides in other waste were assumed to be stabilized in a cementitious grout.** Grout was assumed to be effective for the first 500 years following facility closure, after which, the K_d of the grout was assumed to be the same as the surrounding surface soils. K_d s were taken from the smallest reported data in Kaplan (2006), considering the effects of oxidizing and reducing conditions and selecting the lower of the reported values.

5. CONCLUSIONS AND RECOMMENDATIONS

This report documents distribution of the NRF radionuclide source term across all documented NRF waste disposal shipments sent to the SDA during the HDT, RPT, and RPDT Supplement periods from 1953 through 1999. Best estimates from the three timeframes are presented in Table 5. The combined inventories shown in Table 5 are compiled from separate inventories presented in Sections 3 and 4.

This report presents best-estimate (Appendix A) and upper-bound (Appendix B) radionuclide inventories associated with NRF operations. Estimates are based on totals by waste stream provided by DOE-IBO (Appendix C). Technically defensible estimates of radionuclide activities for individual waste shipments from NRF to the SDA were developed from detailed investigations and reviews of shipping and waste records, nuclear material accountability forms, and extensive deterministic calculations using known irradiation histories of these waste streams.

Table 5. Summary of the Naval Reactors Facility best-estimate radionuclide inventories in waste sent to the Subsurface Disposal Area from 1953 through 1999.

Radionuclide	1953 through 1983 (Ci)	1984 through 1997 ^a (Ci)	1994 through 1999 ^b (Ci)	Total 1953 through 1999 (Ci)
Am-241	1.18E+01	1.07E-01	1.06E-03	1.19E+01
C-14	6.20E+01	1.08E+01	1.12E+00	7.40E+01
Cl-36	1.63E-01	4.49E-02	8.53E-03	2.16E-01
Co-60	5.77E+05	1.57E+05	1.52E+03	7.36E+05
Cs-137	1.15E+04	1.07E+01	9.95E-01	1.15E+04
H-3	1.66E+02	3.09E+01	1.37E+01	2.10E+02
I-129	8.30E-03	8.83E-04	8.99E-04	1.01E-02
Nb-94	2.55E+01	5.80E+00	2.34E-01	3.15E+01
Ni-59	1.48E+03	3.97E+02	2.36E+01	1.90E+03
Ni-63	1.49E+05	4.10E+04	2.81E+03	1.93E+05
Np-237	4.39E-03	6.54E-07	—	4.39E-03
Pu-238	1.89E+01	7.41E-02	4.55E-03	1.89E+01
Pu-239	4.67E+01	5.51E-02	1.38E-04	4.68E+01
Pu-240	4.07E+01	3.42E-02	1.40E-04	4.07E+01
Pu-241	3.20E+03	4.61E+00	7.38E-02	3.21E+03
Sr-90	6.93E+03	9.78E+00	4.87E-01	6.94E+03
Tc-99	2.65E+00	2.24E-01	2.37E-03	2.88E+00
U-233	3.66E-04	5.89E-05	—	4.25E-04
U-234	8.43E-02	9.63E-05	—	8.44E-02
U-235	1.66E-03	8.88E-07	2.98E-06	1.67E-03
U-236	1.19E-02	3.11E-06	—	1.20E-02
U-238	8.32E-02	3.42E-05	5.26E-08	8.33E-02

^aExcludes waste stream NRF-MOD-10S.

^bIncludes waste streams NRF-MOD-6S and NRF-MOD-10S.

Attachment # 4
No. 1 Next to ATR
is the location for
the New Remote
Handled Waste
Dump W/I Flood
Zone Big Lost
River Between
ATR and INTEC

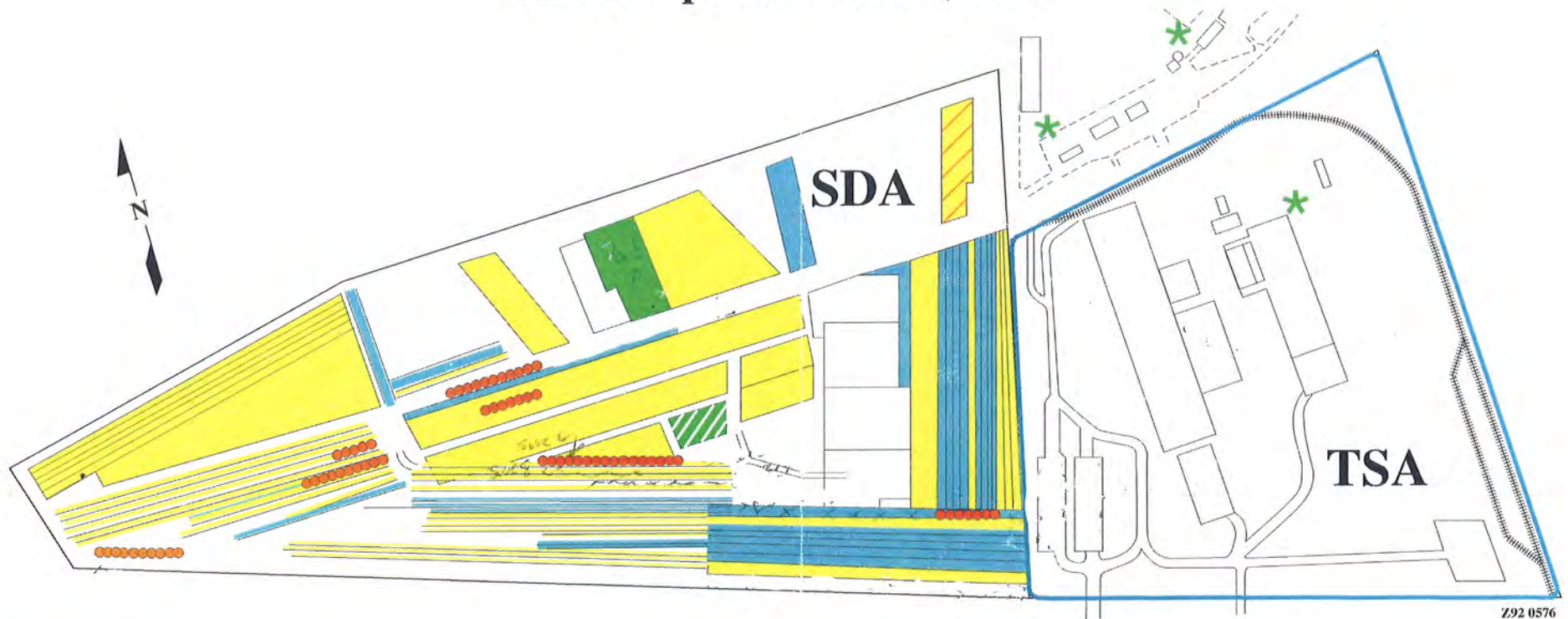


INTEC at the Left

Compare Remote
Handled Waste
Dump Location to
Attachment # 1
Figure 3.4-4
Surface Water
Features

ref

The RWMC (WAG-7) Has Been Divided into 14 Operable Units (OUs)



Z92 0576

- | | |
|--|--|
| 7-01: SDA soil vaults | 7-08: Organic contamination in the Vadose Zone |
| 7-02: SDA acid pit | 7-09: TSA releases |
| 7-03: Non-TRU contaminated pits and trenches | 7-10: Pit 9 comprehensive demonstration |
| 7-04: Air pathway | 7-11: Septic tanks |
| 7-05: Surface water pathways and surficial sediments | 7-12: Pad A |
| 7-06: Groundwater pathway | 7-13: TRU-contaminated pits and trenches |
| 7-07: Vadose Zone (rad/metals) | 7-14: WAG-7 comprehensive ROD |

2-24

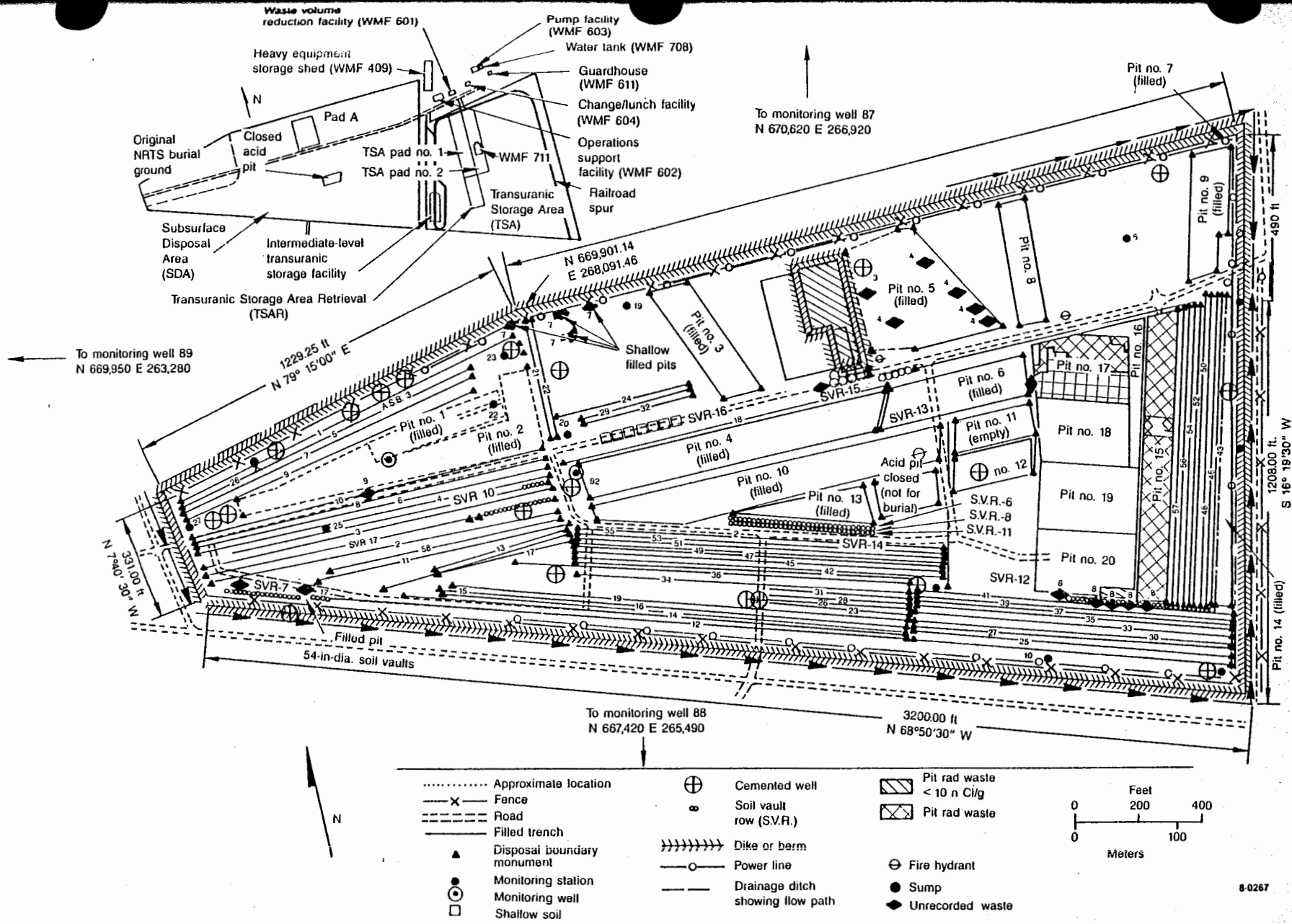
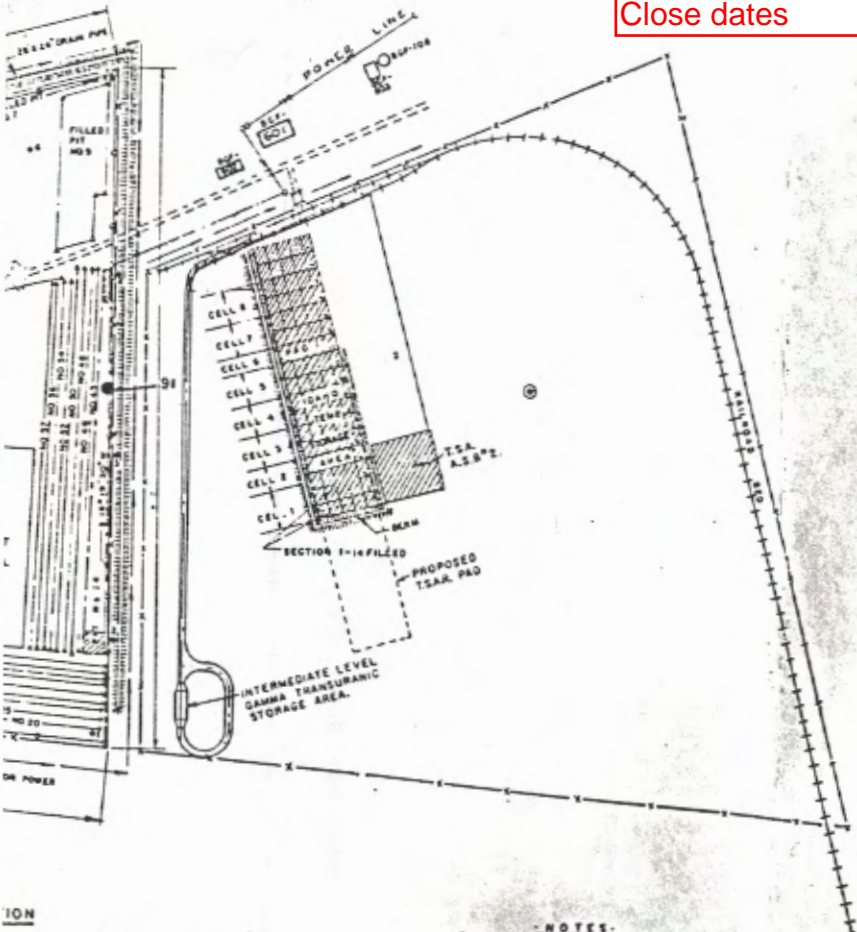


Figure 2-4. Location of the Acid Pit at the SDA.

8-0267

NO	DATE CLOSED	TSA #1	DATE OPENED	DATE CLOSED	PIT NO	DATE OPENED	DATE CLOSED	TRENCH NO	DATE OPENED	DATE CLOSED
1		CELL 1	10-1-70	5-6-71	1	12-1-57	10-1-59	1	TR 1001	7-8-52
2		2	5-16-71	12-29-71	2	10-4-56	3-1-63	2	"	10-1-58
3		3	12-15-71	6-5-72	3	7-3-57	1-5-63	3	TR 1017	12-21-58
4		4	8-5-72	1-16-73	4	1-3-63	5-26-67	4	TR 1017	12-22-58
5		5	12-22-72	8-20-73	5	6-6-63	12-22-66	5	TR 1017	4-22-59
6		6	5-24-73	11-7-73	6	3-6-67	10-22-68	6	TR 1020	11-4-59
7		7	11-7-73	1-23-75	7	9-19-66	10-5-68	7	TR 1019	8-16-56
8		8	10-31-74	10-17-75	8	3-6-67	NOV-67	8	TR 1024	12-23-56
		TSA #2			ACID PIT	1-1-54	8-9-68	9	TR 1019	11-27
		CELL			10	8-7-68	7-8-71	10	TR 1020	7-19-57
					11	4-14-70	10-16-70	11	TR 1025	2-1-58
					12	7-2-70	3-2-72	12	TR 1017	1-3-58
					13	7-20-71	7-28-74	13	TR 1012	4-6-59
					14	7-1-74		14	TR 1022	10-18-59
					15	8-25-75		15	TR 1022	8-1-60
								16	TR 1024	11-1-58
								17	TR 1023	5-10-60
								18	TR 1024	7-1-60
								19	TR 1024	11-2-60
								20	TR 1024	8-30-61
								21	TR 1024	1-10-61
								22	TR 1021	4-23-61
								23	TR 1021	9-19-61
								24	TR 1021	7-3-62
								25	TR 1022	7-29-62
								26	TR 1017	8-1-62
								27	TR 1022	1-4-63
								28	TR 1018	3-12-63
								29	TR 1018	3-20-63
								30	TR 1021	9-13-63
								31	TR 1021	11-23-63
								32	TR 1013	11-18-63
								33	TR 1021	8-10-64
								34	TR 1024	8-27-64
								35	TR 1028	1-19-65
								36	TR 1015	7-24-65
								37	TR 1024	7-1-65
								38	TR 1015	8-16-65
								39	TR 1018	11-3-65
								40	TR 1015	1-13-66
								41	TR 1016	10-4-66
								42	TR 1019	1-7-67
								43	TR 1020	8-1-67
								44	TR 1014	2-29-67
								45	TR 1014	3-16-68
								46	TR 1019	5-5-68
								47	TR 1016	5-2-69
								48	TR 1016	8-8-68
								49	TR 1014	9-30-68
								50	TR 1021	11-1-69
								51	TR 1017	4-8-70
								52	TR 1014	7-4-70
								53	TR 1017	10-12-70
								54	TR 1020	5-4-71
								55	TR 1020	2-1-73
								56	TR 1020	6-11-74
								57	TR 1020	
								58	TR 1024	

Attachment # 7
SDA List of Pits &
Trenches Open/
Close dates



* DISTANCE FROM PREVIOUS TRENCH.
** TRENCH 55 STILL AVAILABLE ON EAST END FOR HIGH LEVEL WASTE.

Trench 55 still available on East end for High Level Waste

100-22056
DWG-1230-825-101-1

NOTES:
TRENCH WASTE LOCATIONS ARE DETERMINED BY MEASUREMENTS MADE FROM WEST TO EAST AND NORTH TO SOUTH OF MONUMENTS.
PIT BURIAL LOCATIONS ARE DETERMINED BY REFERENCE TO CORNER MONUMENTS.
FENCE AND MONUMENTS FIELD LOCATED. ALL OTHER FEATURES, SUCH AS DYES, DITCHES, ROAD, MONITOR HOLES, UNNUMBERED PITS, PIT 7, PARTS OF PITS 12, 85 AND PARTIALLY FILLED AREAS IN OPEN PITS ARE LOCATED ACCORDING TO INFORMATION ON DWG 825-101-80-3 REV 13
INFORMATION ON THIS DRAWING SUPERSEDES THAT OF DWG 1230-825-101-4

Fig. 4 Map of the burial ground showing well sites, location of pits and trenches, and dates of opening and closing of pits and trenches.

AREA	T	R	D	DATE	TIME	DESC	VOLUME	WEIGHT	CURIES	NUCLIDE	CONC	CURIES	NO.
TYPE	#	VOL	U	DESC	LOCATION	DATE							
NRF618 BXC	S 17	R 12	R F	09/18/69	810 007	50 RAD WASTE NOS	5.777E+00	0.000E+00	1.000E-02	UN-ID-B+G	0.000E+00	1.000E-02	
							BGT502+55-65	09/18/69					
NRF618 I	S 1	R 16	R F	09/22/69	810 011	5000 CORE+LOOP COMP.	4.531E-01	1.179E+07	3.600E+04	MFP	0.000E+00	3.599E+04	
							UNKN UNKN	09/22/69					
										U-235	1.980E+00	4.237E-06	
NRF618 BXC	S 17	R 12	R F	09/22/69	820 007	40 RAD WASTE NOS	5.777E+00	0.000E+00	5.000E-02	UN-ID-B+G	0.000E+00	5.000E-02	
							BGT503+25-30	09/22/69					
NRF618 BXC	S 17	R 12	R F	09/22/69	830 007	8 RAD WASTE NOS	5.777E+00	0.000E+00	5.000E-03	UN-ID-B+G	0.000E+00	5.000E-03	
							BGT503+20-25	09/22/69					
NRF618 BXC	S 17	R 12	R F	09/25/69	800 008	20 COMBUSTIBLES	5.777E+00	0.000E+00	1.300E-02	CO-60	0.000E+00	1.300E-02	
							BGT505+60-65	09/25/69					
NRF618 BXC	S 17	R 12	R F	09/25/69	810 008	20 COMBUSTIBLES	5.777E+00	0.000E+00	1.800E-02	CO-60	0.000E+00	1.800E-02	
							BGT503+70-80	09/25/69					
NRF618 I	S 1	R 16	R F	09/26/69	800 011	5000 CORE+LOOP COMP.	4.531E-01	1.179E+07	1.800E+04	UN-ID-B+G	0.000E+00	1.800E+04	
							BGT508+10	09/29/69					
NRF618 BXC	S 17	R 12	R F	09/29/69	800 007	90 RAD WASTE NOS	5.777E+00	0.000E+00	6.000E-02	UN-ID-B+G	0.000E+00	6.000E-02	
							BGT504+55-30	09/29/69					
NRF618 BXC	S 17	R 12	R F	09/29/69	810 007	20 RAD WASTE NOS	5.777E+00	0.000E+00	7.000E-03	UN-ID-B+G	0.000E+00	7.000E-03	
							BGT504+30-35	09/29/69					
NRF618 I	S 1	R 16	R F	10/01/69	800 011	4700 CORE+LOOP COMP.	4.531E-01	7.257E+06	2.450E+04	CO-60	0.000E+00	2.450E+04	
							BGT507+70	10/02/69					
NRF618 BXC	S 17	R 12	R F	10/02/69	810 008	15 COMBUSTIBLES	5.777E+00	0.000E+00	3.000E-02	MFP	0.000E+00	3.000E-02	
							BGT504+60-70	10/03/69					
NRF618 BXC	S 17	R 12	R F	10/02/69	820 008	12 COMBUSTIBLES	5.777E+00	0.000E+00	2.000E-02	MFP	0.000E+00	2.000E-02	
							BGT504+55-60	10/02/69					
NRF618 I	S 1	R 18	R F	10/06/69	810 011	15 CORE+LOOP COMP.	5.098E-01	1.179E+07	2.000E+01	MFP	0.000E+00	2.000E+01	
							BGP10100E05SNJ	10/07/69					
NRF618 BXC	S 17	R 12	R F	10/07/69	800 007	15 RAD WASTE NOS	5.777E+00	0.000E+00	3.000E-04	MFP	0.000E+00	3.000E-04	
							BGT508+95-905	10/07/69					

1. DATA CONTAINED IN THIS LISTING ARE KNOWN TO BE INCOMPLETE AND CONTAIN INACCURATE NUCLIDE BREAKDOWNS. ANY ATTEMPTS TO MATCH PUBLISHED DOCUMENT NUMBERS WITH NUMBERS IN THIS LIST WILL RESULT IN DISCREPANCIES.
2. NO OFFICIAL INEL DOCUMENTS USE DATA FROM THIS DATA FILE.

Attachment # 8
RWMIS P61SH090

AREA	T	R	D	DATE	TIME	DESC	VOLUME	WEIGHT	CURIES	NUCLIDE	CONC	CURIES	NO.
TYPE	#	VOL	U	DESC	LOCATION	DATE							
NRF618 BXC	S 17	R 12	R F	10/07/69	810 007	80 RAD WASTE NOS	5.777E+00	0.000E+00	2.000E-03	MFP	0.000E+00	2.000E-03	
							BGT509+20-25	10/07/69					
NRF618 I	S 1	R 18	R F	10/08/69	810 011	15 CORE+LOOP COMP.	5.098E-01	1.179E+07	2.000E+01	MFP	0.000E+00	2.000E+01	
							BGT507+75	10/09/69					
NRF618 BXC	S 17	R 12	R F	10/09/69	800 007	2 RAD WASTE NOS	5.777E+00	0.000E+00	5.000E-03	MFP	0.000E+00	5.000E-03	
							BGT508+00-10	10/09/69					
NRF618 I	S 1	R 16	R F	10/09/69	810 011	3000 CORE+LOOP COMP.	4.531E-01	1.179E+07	1.800E+04	CO-60	0.000E+00	1.800E+04	
							BGT507+80	10/10/69					
NRF618 BXC	S 17	R 12	R F	10/13/69	800 007	12 RAD WASTE NOS	5.777E+00	0.000E+00	4.000E-03	MFP	0.000E+00	4.000E-03	
							BGT507+75-80	10/13/69					
NRF618 O	S 1	R 270	R F	10/13/69	810 010	30 METAL SCRAP	7.646E+00	0.000E+00	5.000E-03	MFP	0.000E+00	5.000E-03	
							BGP10640E05SNJ	10/13/69					
NRF618 I	S 1	R 18	R F	10/13/69	820 011	15 CORE+LOOP COMP.	5.098E-01	1.179E+07	2.000E+01	CO-60	0.000E+00	2.000E+01	
							BGT507+75	10/14/69					
NRF618 I	S 1	R 18	R F	10/15/69	800 011	10 CORE+LOOP COMP.	5.098E-01	7.257E+03	2.000E+01	UN-ID-B+G	0.000E+00	2.000E+01	
							BGT507+40	10/17/69					
NRF618 BXC	S 17	R 12	R F	10/16/69	810 003	400 PAPER METAL WOOD	5.777E+00	0.000E+00	4.000E-02	CO-60	0.000E+00	4.000E-02	
							BGT504+60-65	10/17/69					
NRF618 BXC	S 17	R 12	R F	10/16/69	820 003	250 PAPER METAL WOOD	5.777E+00	0.000E+00	2.500E-02	CO-60	0.000E+00	2.500E-02	
							BGT504+65-75	10/17/69					
NRF618 O	S 1	R 270	R F	10/17/69	800 010	95 METAL SCRAP	7.646E+00	4.536E+06	3.000E-02	CO-60	0.000E+00	3.000E-02	
							BGP10650E15SNJ	10/20/69					
NRF618 BXC	S 17	R 12	R F	10/20/69	800 007	5 RAD WASTE NOS	5.777E+00	0.000E+00	9.000E-03	MFP	0.000E+00	9.000E-03	
							BGT505+00-05	10/21/69					
NRF618 I	S 1	R 18	R F	10/20/69	810 011	15 CORE+LOOP COMP.	5.098E-01	7.257E+06	2.000E+01	CO-60	0.000E+00	2.000E+01	
							BGT507+65	10/22/69					
NRF618 I	S 1	R 16	R F	10/22/69	800 011	500 CORE+LOOP COMP.	4.531E-01	7.257E+06	1.200E+04	CO-60	0.000E+00	1.200E+04	
							BGT507+40-45SN	10/23/69					

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AREA	T	R	D	DATE	TIME	DESC	VOLUME	WEIGHT	CURIES	NUCLIDE	CONC	CURIES	NO.
TYPE	#	VOL	U	DESC	LOCATION	DATE							
NRF618	S	R	O	08/26/69	800	1500 200	4.956E+00	0.000E+00	2.000E+00	UN-ID-B+G	0.000E+00	2.000E+00	
O	1	175	F	009 CELITE	193	BGP10325E25NS2	08/29/69						
NRF618	S	R	O	08/26/69	810	2500 300	4.956E+00	0.000E+00	2.500E-01	CO-60	0.000E+00	2.500E-01	
O	1	175	F	019 EMPTY	219	BGP10335E65NS2	09/19/69						
NRF618	S	R	O	08/27/69	800	70	3.823E+00	1.814E+06	7.000E-03	UN-ID-B+G	0.000E+00	7.000E-03	
O	1	135	F	027 METAL COMP.	194	BGP10235E35NS2	08/27/69						
NRF618	S	R	O	08/27/69	810	40	5.437E+00	0.000E+00	8.000E-03	CO-60	0.000E+00	8.000E-03	
BXC	16	12	F	008 COMBUSTIBLES	195	BGT502+10-20	08/28/69						
NRF618	S	R	O	08/27/69	820	100	5.777E+00	0.000E+00	1.400E-02	CO-60	0.000E+00	1.400E-02	
BXC	17	12	F	008 COMBUSTIBLES	196	BGT502+15-25	08/28/69						
NRF618	S	R	O	08/29/69	800	5000 350	4.531E-01	1.179E+07	1.800E+04	UN-ID-B+G	0.000E+00	1.800E+04	✓
I	1	16	F	011 CORE+LOOP COMP.	197	BGT508+35	08/29/69						
NRF618	S	R	O	08/29/69	810	250	1.699E+00	3.629E+05	2.500E-02	UN-ID-B+G	0.000E+00	2.500E-02	
O	1	60	F	009 CELITE	198	BGP10335E25NS2	08/29/69						
NRF618	S	R	O	09/02/69	810	60	5.777E+00	0.000E+00	3.000E-02	UN-ID-B+G	0.000E+00	3.000E-02	
BXC	17	12	F	007 RAD WASTE NOS	199	BGT502+30-35	09/02/69						
NRF618	S	R	O	09/02/69	820	0	2.549E+00	0.000E+00	1.000E-05	UN-ID-B+G	0.000E+00	1.000E-05	
O	1	90	F	010 METAL SCRAP	200	BGP10550E90SNJ	09/03/69						
NRF618	S	R	O	09/02/69	830	400	4.531E-01	0.000E+00	3.500E+03	MFP	0.000E+00	3.499E+03	
I	1	16	F	028 UNIRRAD. FUEL	210	UNKN UNKN	09/11/69						
										U-235	3.090E+00	6.613E-06	
NRF618	S	R	O	09/04/69	800	50	5.777E+00	0.000E+00	2.800E-02	CO-60	0.000E+00	2.800E-02	
BXC	17	12	F	003 PAPER METAL WOOD	201	BGT502+30	09/04/69						
NRF618	S	R	O	09/04/69	810	7	5.777E+00	0.000E+00	1.000E-02	CO-60	0.000E+00	1.000E-02	
BXC	17	12	F	003 PAPER METAL WOOD	202	BGT502+50	09/05/69						
NRF618	S	R	O	09/05/69	800	200	5.381E-01	1.179E+07	1.000E+03	CO-60	0.000E+00	1.000E+03	
I	1	19	F	027 METAL COMP.	203	BGT508+70	09/09/69						
NRF618	S	R	O	09/08/69	810	5	5.777E+00	0.000E+00	9.000E-03	UN-ID-B+G	0.000E+00	9.000E-03	
BXC	17	12	F	007 RAD WASTE NOS	204	BGT502+15-20	09/08/69						

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Attachment # 8

AREA	T	R	D	DATE	TIME	DESC	VOLUME	WEIGHT	CURIES	NUCLIDE	CONC	CURIES	NO.
TYPE	#	VOL	U	DESC	LOCATION	DATE							
NRF618	S	R	O	09/08/69	820	150	5.437E+00	0.000E+00	2.500E-02	UN-ID-B+G	0.000E+00	2.500E-02	
BXC	16	12	F	007 RAD WASTE NOS	205	BGT502+20-25	09/08/69						
NRF618	S	R	O	09/09/69	800	100	9.940E+00	1.814E+06	1.000E-02	CO-60	0.000E+00	1.000E-02	
O	1	351	F	010 METAL SCRAP	206	BGP10317E50NS2	09/09/69						
NRF618	S	R	O	09/09/69	810	200	5.381E-01	1.179E+07	1.000E+03	CO-60	0.000E+00	1.000E+03	✓
O	1	19	F	027 METAL COMP.	207	BGT508+70	09/10/69						
NRF618	S	R	O	09/11/69	800	200	5.777E+00	0.000E+00	6.000E-02	CO-60	0.000E+00	6.000E-02	
BXC	17	12	F	003 PAPER METAL WOOD	208	BGT502+05-10	09/11/69						
NRF618	S	R	O	09/11/69	810	10000 800	4.531E-01	7.257E+06	1.660E+03	CO-60	0.000E+00	1.660E+03	
I	1	16	F	011 CORE+LOOP COMP.	211	BGT508+30	09/12/69						
NRF618	S	R	O	09/15/69	820	40	9.940E+00	1.814E+06	3.000E-02	UN-ID-B+G	0.000E+00	3.000E-02	
O	1	351	F	010 METAL SCRAP	212	BGP10560E60SNJ	09/15/69						
NRF618	S	R	O	09/15/69	830	400	5.777E+00	0.000E+00	1.330E-01	CO-60	0.000E+00	1.330E-01	
BXC	17	12	F	008 COMBUSTIBLES	213	BGT502+50-60	09/15/69						
NRF618	S	R	O	09/15/69	840	30	5.777E+00	0.000E+00	4.000E-02	CO-60	0.000E+00	4.000E-02	
BXC	17	12	F	008 COMBUSTIBLES	214	BGT502+45-50	09/15/69						
NRF618	S	R	O	09/15/69	850	3000 250	4.531E-01	1.179E+07	1.800E+08	UN-ID-B+G	0.000E+00	1.800E+08	✓
I	1	16	F	011 CORE+LOOP COMP.	215	BGT508+15	09/15/69						
NRF618	S	R	O	09/16/69	800	0000	4.531E-01	1.179E+07	4.500E+04	UN-ID-B+G	0.000E+00	4.500E+04	✓
I	1	16	F	011 CORE+LOOP COMP.	216	BGT508+20	09/16/69						
NRF618	S	R	O	09/16/69	810	800	1.133E+01	0.000E+00	6.000E-02	CO-60	0.000E+00	6.000E-02	
O	1	400	F	015 EVAP BOTTLES	229	BGP10592E50SNJ	09/29/69						
NRF618	S	R	O	09/17/69	800	15	4.531E-01	7.257E+06	7.500E+02	CO-60	0.000E+00	7.500E+02	
I	1	16	F	011 CORE+LOOP COMP.	217	BGT508+15	09/18/69						
NRF618	S	R	O	09/17/69	810	50	1.133E+01	0.000E+00	5.000E-03	CO-60	0.000E+00	5.000E-03	
O	1	400	F	019 EMPTY	218	BGP10345E65NS2	09/19/69						
NRF618	S	R	O	09/18/69	800	10	5.777E+00	0.000E+00	2.000E-02	UN-ID-B+G	0.000E+00	2.000E-02	
BXC	17	12	F	007 RAD WASTE NOS	220	BGT502+65-75	09/18/69						

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