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Review
of
CERCLA Cleanup
and
Decommissioning and Decontamination
at
Engineering Test Reactor
TRA Retention Basin
Materials Test Reactor
at
Reactor Technology Center
now
Called
Advanced Test Reactor Complex
Waste Area Group 2
Idaho National Laboratory

Submitted by
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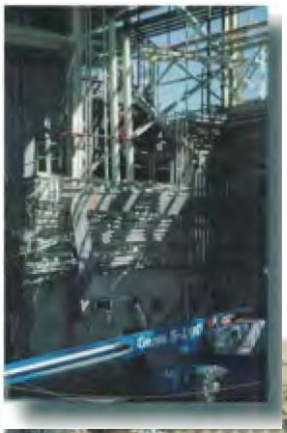
Revision G



"The D&D teams for the Idaho Cleanup Project have made enormous progress in 2007, nearing completion on several highly complex former nuclear facility demolitions as well as many other obsolete or unneeded facilities across the INL Site.

Reactor Removal

In a major milestone for the project, the Engineering Test Reactor (ETR) was removed from the Reactor Technology Complex. Active from 1957–1982, the ETR reactor was used to evaluate fuels, coolant. DOE photo.

I. Preface

The Environmental Defense Institute (EDI) offers this review of the disposition of the waste generated by the decommissioning/ decontamination (D&D) and CERCLA cleanup of the Engineering Test Reactor (ETR), Materials Test Reactor (MTR) and the TRA Retention Basin at the Reactor Technology Center (RTC), now called Advanced Test Reactor Complex and waste disposal at the INL CERCLA Disposal Facility (ICDF). Photos are from Idaho Cleanup Project (CH2M-WG) Progress Report 2007).

II. Engineering Test Reactor

DOE's Risk Assessment document shows the Engineering Test Reactor (ETR) core slated for disposal at the ICDF contains 59,228.1295 curies of radioactive contamination. [1] This is a huge quantity of extremely deadly radioactive waste to dump over-top the Snake River Aquifer and within the Big Lost River flood plain. See Attachment below. [2]

DOE Risk Assessment document also states the ETR fuel core mass at 22,276 kilograms (22,276,000 grams). [3] However, Engineering Design File uses ETR fuel core mass of 74,535,000 grams for calculating the total transuranic content of the core and the beryllium reflector. [4] This is a significant discrepancy because it apparently radically understates the total nCi/g total applied to the ICDF Waste Acceptance Criteria limit of 10 nano-curie/gram limit. [5]This discrepancy must be resolved due to the regulatory implications.

Additionally, "The [radioactive] transuranic activity in the [beryllium] reflector was determined to be 9.59×10^{7} nCi [95,900,000 nCi]. It was obtained by multiplying the average transuranic specific activity for the reflector, 177 nCi/g by the total beryllium mass, 5.424×10^{5} gram [542,400 gm]." [6] This also puts the beryllium reflector into the Nuclear Regulatory Commission (NRC) definition of transuranic waste greater than 100 nCi/g that require deep geologic disposal. [7] Dumping the beryllium reflector together with the ETR core violates both the ICDF WAC but also NRC regulations that require deep geological disposal of Transuranic waste.

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[1] Groundwater Pathway Risk Assessment for the Engineering Test Reactor Complex Closure, Engineering Design File, Doc. ID. EDF-5142, (EDF) page 28 through 30, effective date 10/31/06

[2] The ICDF is a new dump built adjacent to INTEC to take the more highly radioactive waste generated during the CERCLA cleanup process. This dump like the INTEC is in a flood zone. See EDI ICDF permit comments.

[3] Engineering Design File (EDF) - 5152, page 21.

[4] Engineering Design File (EDF) - 7222, approved 9/11/06, page 14.

[5] ICDF Complex Waste Acceptance Criteria, October 2006, DOE/ID-10881, Rev.3. Hereinafter DOE/ID-10881.

[6] EDF-7222, page 13.

[7] Transuranic waste also known as TRU waste contains elements with atomic numbers greater than 92, the atomic number of uranium. TRU waste contains alpha-emitting transuranic radio-nuclides with half-lives greater than 20 years and total concentration greater than 100 nano-curies per gram. This is the U.S. Environmental Protection Agency definition. The U.S. Nuclear Regulatory Commission definition is slightly different and is part of a broader category called Greater-than-Class-C waste.

"Wastes containing >10 nCi/g of TRU radionuclides are prohibited at the ICDF." [8] Clearly DOE is violating its own ICDF WAC, without protest by Idaho/EPA regulators. According to Daryl Koch at Idaho Department of Environmental Quality (IDEQ) "ETR vessel characterization data can be reviewed in Engineering Design files EDF 6133 and 7222. These documents, as well as the Engineering Evaluation and Cost Evaluation EE/CA, DOE/ID-11272, are in the INL administrative record. [9] [T]he 'vessel' and attached 'internals', i.e. beryllium reflector, etc; would be disposed as a single item waste package. The radioactive data is presented in the aforementioned documents. There is no 'core' (fuel & associated items) remaining in the vessel. They were removed in 1981. GTCC [Greater-than-Class-C] waste is not expected to be generated from this particular decommissioning project. If it did, a Performance Assessment, as discussed in my e-mail of yesterday could be performed. If the waste still exceeded GTCC then it would have to be addressed by a facility other than the ICDF." [10]

The issue of Greater-than-Class-C (GTCC) waste is crucial here because of the Nuclear Regulatory Commission (NRC) definition of; "Waste that is not generally acceptable for near-surface disposal is waste for which form and disposal methods must be different, and in general more stringent, than those specified for Class C waste. In the absence of specific requirements in this part, such waste must be disposed of in a geologic repository as defined in part 60 or 63 of this chapter." [11]

Nuclides identified by NRC regulations for GTCC include C-14, Ni-59, Nb-94, Tc-99, and I-129, Pu-241, Cm-242, H-3, Co-60, Ni-63, Sr-90, and Cs-137. [12] All of these radionuclides are in the ETR vessel and reflector slated for near-surface disposal in significant quantities at the ICDF near-surface dump site. For instance, see the long-lived radionuclides; Cobalt-60 concentrations of 1,970 Ci; Ni-63 concentrations of 24,200 Ci. [13]

Clearly, DOE's intent to intern the ETR reactor core and components as a single unit in the ICDF will violate the ICDF Waste Acceptance Criteria (WAC) of 10 nano-curies per gram [14] TRU disposal unit by significant amounts. [15]

EDI's preliminary review of the ETR components (including TRU and GTCC waste) slated for disposal at the ICDF also do not meet the ICDF Waste Acceptance Criteria (WAC). EDI continues to challenge the long-term adequacy of the ICDF to effectively prevent the migration of waste contaminates and these concerns are presented again in the below attachment that articulates these continuing concerns.

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[8] DOE/ID-10881, page 4-1.
[9] http://ar.inel.gov/owa/select_current_2
[10] Daryl Koch email to Broscious 11/1/06
[11] 10 CFR 61.55
[12] 10 CFR 61.55
[13] EDF-5142, page 28 through 30.
[14] Nano Curie = 0.000000001 curie (10-9).
[15] ICDF Complex Waste Acceptance Criteria, October 2006, U.S. Department of Energy Idaho Operations Office, DOE/ID-10881, Revision 3, page 4-1.

III. RTC Retention Basin

"TRA-04: TRA-712 Warm Waste Retention Basin System (TRA-712 and TRA-612) [16]

"The Operable Unit (OU) 2-13 Record of Decision (ROD) defined Site TRA-04 as radiological and chemical soil contamination surrounding the Warm Waste Retention Basin from releases associated with the basin, piping, and sumps (DOE-ID 1997a). In August 2011, the D&D of the retention basin system included the TRA-712 Warm Waste Retention Basin, the TRA-612 Retention Basin Sump Pump House, and the TRA-760 Retention Basin Monitoring Station (Figure 1).

"TRA-712 Warm Waste Retention Basin and TRA-612 Retention Basin Sump House:
The TRA-712 Warm Waste Retention Basin was a concrete basin that received warm waste beginning in the early 1950s. The basin was designed to retain the waste for 3 to 4 days until the radioactivity levels dropped to acceptable levels for discharge to the unlined TRA-758 Leaching Pond. The basin was approximately 126 >< 41 >< 20 ft. deep. The top of the basin was located 10 ft. below grade and the bottom of the basin was 30 fly below grade.

"The TRA-612 (Retention Basin Sump Pump House) was designed to house the above grade pumps and valves associated with the retention basin outlet sump. The retention basin outlet sump was a concrete buried structure that was 40 ft. deep and had a capacity of 43,000 gal. The sump was designed to collect cold wastewater from the Materials Test Reactor and to receive overflow and solids from the TRA-712 retention basin. Waste collected in the retention basin outlet sump was discharged to the TRA-758 Leaching Pond.

"The retention basin system was Investigated under a Track 2 (DOE-ID 1995), further evaluated In the WAG 2 Comprehensive Remedial Investigation/Feasibility Study (Rl/FS) (DOE-ID 1997b), and a decision made in the OU 2-13 ROD (DOE ID 1997a). Data from soil borings (volatile organic compounds, semi volatile organic compounds, radionuclides, and inorganics) around the retention basin were used in the risk assessment. The soil in the top 10 ft. was below risk-based levels for both human health and ecological risk.

"The retention basin was known to have leaked. The OU 2-12 Rl/FS (Lewis el al. 1992) and ROD (DOE-ID 1992) addressed contaminated perched water and the Comprehensive Rl/FS (DOE-ID 1997b) and ROD (DOE-ID 1997a) addressed groundwater.

"The remedy for perched water and groundwater was no action with monitoring. Perched water and groundwater concentrations have been declining as predicted.
"The no action decision for the TRA-04 retention basin system was documented in the OU 2-13 ROD (DOE-ID 1997a). However, an ESD (DOE-ID 2000) clarified that the site required institutional control because the soil al depths greater than 10 ft. below grade was contaminated above the level that could be released for unlimited use and unrestricted exposure. The ESD did

[16] Federal Facility Agreement and Consent Order (FFA/CO) New Site Identification (NSI), 5/12/14, Doc. # NSI26002.

not address when institutional control could end. **The date for terminating Institutional control was estimated to be 2310 in the 5-year review (DOE-ID2011).**

"In 2011, the TRA-712 Warm Waste Retention Basin was decommissioned as a NTCRA under the General Decommissioning Action Memorandum (DOE-ID 2009; Cooper 2009). The retention basin system underwent a hazardous waste determination as part of the "Voluntary Consent Order Action Plan SITE-TANK-005 Tank System TRA-011" (EDF-1996). The Idaho Department of Environmental Quality approved the hazardous characterization of the retention basin system in 2005 (Gregory 2005). The basin was again sampled to establish a radiological source term (Kirchner 2011). Of 10 sampling locations throughout the retention basin designated for sampling during D&D, seven contained solid material that could be sampled. The solids were composited and analyzed for radionuclides. All samples were collected at depths greater than 10 ft. below grade. Table 1 shows the results detected at the 95% confidence level. **Based on the Cs-137 activity alone (4.5 E+04 +/_ 2.1 E+03 pCi/g) the concentration below 10 ft. would not decay to unlimited use/unrestricted exposure levels (6 pCi/g) by2095."** [17]

Table 1. Radiological results from TRA-712 retention basin solid composite sample > than 10 ft. below grade in 2011.

Sample Number	Radionuclide	Sample Value pCi/G	Sample Uncertain	MDA
8832-01	Strontlum-90	1.15E+0	6.73E+02	2.39Et01
8632-01	Nlckel-63	5.77Et0	3.33E+03	9.13E+01
6632·01	Plutonlum-241	6.95E+0	4.66E+02	3.39E+01
8632-01	Amerlclum-241	3.21E+	2.63E+02	3.13E+01
8632-01	Curium-243/244	3.02E+0	3.53Et01	3.51E+01
8632 01	Neptunlum-237	4.14E-	1.45E-01	3.96E-01
8832-01	Plutonium-238	671E+0	4.28E+01	3.59E-01
8832·01	Plutonium-239/240	5.20E+0	3.32E+01	3.69E-01

NSI-26002

Site Title: TRA-04:TRA-712 Warm Waste Retention Basin System (TRA-712 and TRA-612)				Site Code: **TRA-04** Document Number: NSI-26002 Rev.1	
8832-01	Uranium-233/234	2.12E+00		1.62E-01	3.14E-02
8832-01	Uranium-235	8.60E-02		2.21E-02	3.87E-02
8832-01	Uranium-238	1.88E-01		3.03E-02	3.12E-02
8832-01	Amercium-241	2.72E+03		8.63E+01	2.92E+02
8832-01	Ceslum-137	4.50E+04		2.12E+03	8.34E+02
8832-01	Coball-58	8.05E+02	(J)	1.43E+02	6.27E+02
8832-01	Cobalt-60	1.24E+05		2.38E+03	5.13E+02
8832-01	Europium-152	9.95E+03		2.63E+02	6.76E+02
8832-01	Europium-154	8.59E+03		3.80E+02	4.72E+02
8832-01	Europium-155	2.23E+03		1.92E+02	4.46E+02

J estimated value
MOA minimum detectable activity

[17] Federal Facility Agreement and Consent Order (FFA/CO) New Site Identification (NSI), 5/12/14, Doc. # NSI26002.

"The top 10 ft. of soil, which had been determined in the OU 2-13 RI/FS (DOE-ID 1997b) to be at acceptable risk-based levels, was excavated to expose the roof of the basin at 10 ft. below grade. The small amount of residual sludge in the bottom of the basin was filled In place (approximately 40 ft. below ground surface). The Inlet troughs were filled with grout to approximately 2 ft. below grade. The tops of the retention basin were collapsed in, the removed overburden placed In the bottom of the hole, and then clean fill placed on top to grade level (ICP 2012). The TRA-636 Warm Waste Effluent Monitoring Station, which Is above these structures, remains intact. Two active sample lines are associated with the active warm waste system that passes through the retention basin Inlet sump. The active Inlet sump and effluent monitoring station are not part of site TRA-04."[18]

Table 2. Radiological Results from TRA-612 outlet sump solid sample at depth greater than 35 ft. in 2011

Sample	Radionuclide	Sample Value	Validation Flag	Sample Uncertainty	MDA (pCi/g)
8834-01	Slrontlum-90	7.92E+02		4.84E+01	6.39E+00
8834-01	Nlckel·63	1.18E+04		6.84E+02	2.28E+01
8834-01	Plutonium-241	1.59E+02		2.05E+01	1.71E+01
8834-01	Americum-241	4.74E+01		3.81E+00	1.97E-01
8834-01	Curlum-243/244	1.19E+01		1.04E+00	1.97E-01
8834-01	Plutonium-238	7.88E+01		5.14E+00	3.85E-01
8834-01	Plutonium-239/240	3.64E+01		2.46E+00	1.66E-01
8834-01	Uranium-233/234	1.11E+01		8.49E-01	1.66E-01
8834-01	Uranium-235	5.35E-01		1.27E-01	2.05E-01
8834-01	Uranium-238	1.58E+00		2.10E-01	1.65E-01
8834-01	Amercium-241	3.86E+01		4.98E+00	2.17E+01
8834-01	Ceslum-137	3.20E+03		1.51E+02	3.17E+01
8834-01	Cobalt-60	1.04E+03		2.34E+01	2.16E+01
8834-01	Europium-152	8.41E+01		1.02E+01	3.89E+01
8834-01	Europium-154	5.87E+01		7.09E+00	2.72E+01

MDA minimum detectable activity

Institutional Control Required for 24,100 Years [NSI-26002, pg.7]

To determine when site TRA-04 can be released for unlimited use/unrestricted exposure, the maximum radionuclide activity from the composite sample obtained from depths greater than 10 ft. below grade (Table 1 in Part A of this NSI) and from the sump sample at depths greater than 35 ft. below grade (Table 2 In Part A of this NSI) are compared in Table 1 to the residential soil cleanup level In Table 6 of the OU 10-08 Remedial Design/Remedial Action Work Plan (DOE-ID 2010). The maximum radionuclide activities indicate that the retention basin cannot be released for unlimited use/unrestricted exposure by 2095 and institutional controls will be

[18] Ibid. Pg. 2 and 3.

require for 24,100 years from when the samples were taken (in 2011). Therefore this site will require long-term institutional controls to ensure that future users of the site are aware that contamination remains at depths greater than 10 ft. below grade for the TRA-04 Retention Basin System."

Table 1. Comparisons of maximum radiological activity from site TRA-04 to unlimited use/unrestricted exposure levels. [19]

Radionuclide	Maximum Value between TRA-712/612 samples (pCi/g)	Unlimited Use/Unrestricted Exposure Level	Years Until Eligible for Unlimited Use Unrestricted Exposure
Strontium-90	1.15E+04	2.31E+01	256
Nickle-63	5.77E+04	9.46E+ 03	261
Plutonlum-241	6.95E+03	4.06E+04	Now
Americium-241	3.21E+03	1.87E+02	1,772
Curium-243/244	3.02E+02	NA	NA
Neptunlum-237	4.14E-01 (J)	1.30E+01	Now
Plutonlum-236	6.71E+02	2.97E+02	103
Plutonium-239/240	5.20E+02	2.59E+02	24,100 (Pu-239)
Uranium233/234	1.11E+01	4.01E+02	Now
Uranlum-235	5.35E-01	1.95E+01	Now
Uranlum-236	1.56E+00	7.42E+01	Now
Americium-241	2.72E+03	1.87E+02	
Ceslum-137	4.50E+04	6.0E+00	366
Cobalt-56	8.05E+02 (J)	NA	
Cobalt-60	1.24E+05	3.61E+00	79
Europium-152	9.95E+03	4.16E+00	146
Europium-154	8.59E+03	4.99E-00	92
Europium-155	2.23E+03	3.80E-02	12

a. From Table 6 In DOE/ID (2010) Beginning with the year 2011 (sampling date)
(J) estimated value MDA minimum delectable activity

Groundwater Risk

"Based on the OU 10-08 process (DOE-ID 2010), a groundwater risk assessment is not required because none of the contaminants are groundwater contaminants of potential concern except for Sr-90, and no driving force remains to accelerate migration of Sr-90 to the Snake River Plain Aquifer. However, the D&D program did a groundwater risk assessment to justify leaving the contamination in place (EDF 10054). The risks to groundwater from the residual contamination are at acceptable levels."

The DOE's Retention Basin Groundwater Pathway Risk Assessment report shows an inventory of 0.5172946 full curies. [20] DOE likes to switch units to fit the impression it wants to convey rather than in the regulatory units. 0.5172946 curies = 517,294,600.0 nano curies.

[19] Federal Facility Agreement and Consent Order (FFA/CO) New Site Identification (NSI), 5/12/14, Doc. # NSI26002, pg.7.

[20] Groundwater Pathway Risk Assessment for the ATR Complex Retention Basin System, EDF-10054, Rev. 1, 7/20/11, page 10.

Transuranic waste is defined as >100 nano curies of radioactive elements heavier than uranium and having a half-life > 20 years.

This above statement of acceptable residential risk is ludicrous based on the monitoring sample data in the cited above. This report shows the complete incompetence of the IDEQ and EPA to hold DOE to its legal obligations to clean up this contamination that will plague Idahoans for millennia.

IV. Materials Test Reactor

According to DOE's Engineering Evaluation/Cost Analysis for the Materials Test Reactor Facility End-State and Vessel Disposal, [21] Section 2.3 Extent of Contamination:

"In the current state, the MTR facility and the MTR contain a variety of radiological and chemical COCs. These COCs are derived from the activation or transmutation of irradiated metals, equipment and piping contaminated with activation and fission products, heavy metals present in structural alloys or used for radiological shielding, and metals used as electrical or thermal conductors and in switches. The locations and estimated total quantities of COCs remaining at the MTR facility are discussed in the following sections. Estimates provided for the radiological and non-radiological constituents are a "snapshot" of the inventories prior to the deactivation activities. The contamination areas include those defined in the headings in Table 2-1 as well as those areas described in Section 2 of EDF-6244. Although ongoing deactivation activities will reduce the inventories of both types of materials, the total inventory amount is used to ensure that the risk evaluation is conservative and bounds the residual contamination remaining after decommissioning of the MTR facility is complete.

"Section 2.3.1 Estimated Remaining Materials Test Reactor Facility Radionuclide Inventory states: "Table 2-1 shows the results of activation calculations taken from EDF-6381, "Material Test Reactor (MTR) Complex Activity vs. Depth," for various structures in the MTR as of January 2005. The estimated total activity of radionuclides present in the MTR facility, as described under the no action alternative, is 757 curies (Ci). Of this total, 756 Ci of radioactive contamination would remain at the decommissioned MTR facility under Alternative 2. Removal and on-Site disposal of the vessel at ICDF in Alternative 3 would reduce the radionuclide inventory remaining at the MTR facility to approximately 0.47 Ci. Institutional control would be necessary after implementation of Alternative 3 until 2138 when the risk is calculated to fall below 1 in 1,000,000."

"Section 2.3.2 Estimated Remaining Materials Test Reactor Complex Non-radiological Inventory states: "The total quantity of the chemical constituent source term (EDF-6244, "Materials Test Reactor Complex Chemical Constituent Source Term") was determined by several means. These include reviews of various historical documents, drawings, and

[21] Engineering Evaluation/Cost Analysis for the Materials Test Reactor Facility End-State and Vessel Disposal, July 2007, DOE/ID-11328 Revision 0

photographs; interviews with INL personnel knowledgeable with MTR facility operations; interviews with other Site personnel knowledgeable of reactor and utility systems; interviews with VCO Program personnel; review of analytical data; and conducting walk-downs of the various facilities. Some areas that were not accessed (e.g., posted and managed as a high contamination or high radiation area) were evaluated by reviewing available documents, drawings, photographs, and videos of these areas and conservatively estimating the chemical constituent source term (EDF-6244).

"DOE-ID recommends implementation of Alternative 3, "Removal of the Aboveground Structure with Removal and Disposal of the MTR Vessel," with disposal at the ICDF. ICDF is a multiple-lined, monitored on-Site disposal facility that offers greater protection to human health and the environment than disposal at the unlined disposal cells. The vessel would be filled with grout (as necessary) to stabilize vessel internals and reduce radiological dose. The MTR vessel meets the ICDF WAC and would be transported and disposed of as low-level radioactive waste at ICDF. Any remaining voids in the vessel would be filled with grout at the disposal site. The aboveground portions of the reactor facility would be demolished to below ground surface, and the resultant demolition material may be used as backfill or disposed of in accordance with the applicable disposal site WAC. Materials left in place include inert, non-putrescible material located below the ground surface, such as piping, equipment, electrical conduit, utility systems, structural steel, and other residual clean or contaminated materials with low-level radioactive and/or chemically hazardous substances that do not present an unacceptable risk in accordance with the RAOs for the ROD (DOE-ID 1997) and the Explanation of Significant Differences (DOE-ID 2000)." [22]

> "Alternative 3 would include removal and disposal of the MTR vessel at an on-Site disposal facility (ICDF). The reactor facility would be demolished to below ground level; structures and systems below ground surface consisting of inert materials, such as piping, tanks, structural metal, and utility systems, would be abandoned in place. Residual radioactive materials in the MTR facility remaining after D&D activities are completed would stay in place and would be managed under the Site wide Institutional Control Program. Void spaces would be backfilled as practicable, including the void left by removal of the MTR vessel. Backfill would consist of grout, as necessary, and/or inert demolition waste from the above grade structures and clean backfill materials."

The vessel will be grouted, as necessary, to stabilize and shield the internal reactor components during transportation. Void spaces will be filled with grout at the ICDF to meet required disposal facility Waste Acceptance Criteria (WAC) (DOE-ID 2007b) for reducing void space.

[22] Engineering Evaluation/Cost Analysis for the Materials Test Reactor Facility End-State and Vessel Disposal, July 2007, DOE/ID-11328 Revision 0

V. DOE's MTR Facility Summary of Chemical Constituent

The total non-radiological inventory in the MTR complex, which included several facilities that supported MTR operations, including the MTR facility, is summarized in Table 2-2. The inventory in EDF-6244 included contamination in buildings and structures in the MTR complex and was not limited to the footprint of TRA-603. **The scope of this NTCRA includes only TRA-603**. The inventory provided in Table 2-2 reflects modifications to the source term presented in EDF-6244 that include only those portions of the MTR complex (i.e., TRA-603) that would specifically impact the MTR facility soil and groundwater pathway risk analysis. The quantities were estimated for each end-state scenario (i.e., No Action, Removal of above grade Structure with Containment of the MTR Vessel, and Removal of Above grade Structure with Removal and Disposal of the MTR Vessel) to support the soil and groundwater risk assessments.

Table 2-2. Summary of chemical constituent quantities in (kg) used for the risk assessments in the MTR facility.

	No Action Alternative	Alternative 2	Alternative 3
Organics			
PCBs (Aroclor 1254 & 1260)	4.10E-03	3.40E-3	3.40E-03
Inorganics			
Aluminum	1.26E+04	1.26E+04	1.00E+00
Antimony and compounds	6.00E-01	6.00E-01	6.00E-01
Barium and compounds	1.45E+06	1.45E+06	1.00E+00
Beryllium and compounds	2.15E+03	2.15E+03	1.00E+00
Boron	1.40E+02	1.40E+02	1.00E+00
Chromium	1.59E+04	1.59E+04	5.75E+03
Copper and compounds	2.93E+04	2.93E+04	1.47E+04
Lead	1.22E+04	1.22E+04	3.00E+01
Manganese and compounds	5.61E+03	5.61E+03	2.40E+03
Nickel (soluble salts)	9.79E+03	9.79E+03	3.98E+03
Silver and compounds	3.00E+01	1.00E+00	1.00E+00
Tin (inorganic)	6.00E+01	6.00E+01	6.00E+01
Zinc	1.80E+02	1.80E+02	1.80E+02

VI. Summary

EDI believes that all MTR complex, which included several facilities that supported MTR operations, including the MTR facility be included in Alternative # 3 (complete removal of all contamination) not just building TRA-603.

Again EDI objects to the use of the ICDF dump as the landfill to receive the MTR/ETR waste because it is in the Big Lost River flood plain. The ICDF site (next to INTEC) was selected because its deep alluvial soils offered the easiest digging as opposed to other INL sites **not** over the Snake River Plain Aquifer. Areas north-east on the INL site are **not** above the aquifer and would be more suitable as a disposal area. The very large reactor cores also factor into the choice of ICDF. Cost not legal requirements rule all decision making and the state and EPA rubber stamp whatever DOE decides.