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April 28, 2004

Mr. Brian Edgerton  
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1955 Fremont Ave.  
Idaho Falls, ID 83401

**Record**  
08 5-12-04

**Subject: Contract No. DE-AC07-97ID 13481, Advanced Mixed Waste Treatment Project (AMWTP), Transmittal of a Permit to Construct Exemption for the Soft-sided Containment Tent Located in WMF-635 - AJD-089-2004**

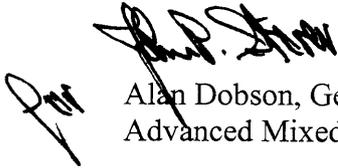
Dear Mr. Edgerton:

For your information the attached Category I Level I Exemption documents that the soft-sided containment tent located in WMF-635 for handling of tarps and plywood removed from the TSA-RE meets all of the requirements for exemption from the requirement to obtain a permit to construct from the Idaho Department of Environmental Quality. The analysis supports the exemption and is based on a conservative estimate for particulate, VOC, and radionuclide emissions as a result of sizing plywood and tarps for disposal and packaging and addition of absorbents and visual inspection of waste.

This letter and the attached exemption will be placed in the AMWTP facility operating record and submitted to the DEQ upon request. Based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

If you have any questions or comments, please feel free to contact Penny Pink at 557-7006 or myself at 557-7014.

Sincerely,

  
Alan Dobson, General Manager  
Advanced Mixed Waste Treatment Project

Attachment

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AJD-089-2004

**CATEGORY 1, LEVEL I EXEMPTION FOR THE  
AMWTP WMF-635  
SOFT-SIDED CONTAINMENT TENT**

**April 2004**

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## **1.0 Introduction**

The Advanced Mixed Waste Treatment Project (AMWTP) is located at the Radioactive Waste Management Complex (RWMC) at the Idaho National Engineering and Environmental Laboratory (INEEL). The AMWTP Tarp and Plywood handling soft-side containment tent is located in Building WMF-635.

Soft-sided Containment Tent activities include:

- 90-day storage of tarps and plywood and drums
- Cutting of tarps and plywood
- Packaging of tarps and plywood pieces into 55-gallon storage containers.
- Visual inspection of drum contents
- Addition of absorption material to drums

This document demonstrates that the Soft-sided Containment Tent in WMF-635 meets the requirements to exempt the facility from obtaining a permit to construct. These activities meet all of the general exemption criteria (IDAPA 58.01.01.220) and the specific requirements for a Category I, Level I Exemption (IDAPA 58.01.01.221 and IDAPA 58.01.01.223).

## **2.0 Process Description**

The soft-sided containment (SSC) tent will be used to prepare, size, and package contaminated tarps and plywood sheets that are removed/retrieved from TSA-RE during waste retrieval operations. Tarps and plywood will be transported from TSA-RE to the SSC located in WMF-635. In the SSC these tarps and plywood sheets will be analyzed and all contaminated sections will be cut using shears (tarps) or saws (plywood). All resulting scraps (tarps scraps and sawdust included) will be collected and packaged for disposal.

The SSC will also be the sight of visual examination of drum contents and/or absorption of free liquids within those drums. The drums will be transported to the SSC after retrieval from the TSA-RE or from permitted storage.

### **3.0 Emission Description**

Emissions for this permit exemption are only those that occur within the SSC in the WMF-635. Primary emissions are a byproduct of handling and preparing the tarps and plywood for packaging and subsequent disposal as well as those emissions from visual examination of drum contents and addition of absorbent material into drums. The contaminants that may exist on the tarps and plywood are a result of leaking containers recovered in the TSA-RE during retrieval operations. The pollutants that may have escaped from breached drums potentially may have contaminated the plywood sheets that the drums are stacked on/covered with and also the tarps that were used to cover the waste piles prior to their having been covered with soil. These contaminants may exist in the form of radionuclides or VOCs that have contaminated the surface of the tarps and plywood or soaked into them. As a result, when the tarps and plywood are processed and sized to prepare them for packaging there is a potential for release of these contaminants to the air and subsequent venting out the SSC and correspondingly out the stack of WMF-635. The contaminants that may exist within the drums are similar in nature to those potentially found on the tarps and plywood. These contaminants may exist in the form of radionuclides or VOCs. As a result of the visual examination and to a larger degree, the addition of absorbent to drums, there exists the potential for release of these contaminants to the air and subsequent venting out the SSC and correspondingly out the stack of WMF-635.

### **4.0 Calculation of Emissions**

#### **4.1 Radionuclides**

The radionuclide concentrations were determined in accordance with previously accepted calculations used in the permit to construct for the retrieval operations at the TSA-RE. The total radionuclide waste inventory, as documented by Raivo et. al., was used as the initial basis for potential contamination (64,000 m<sup>3</sup>) and this inventory was assumed to be equally distributed amongst all the waste containers. This inventory was corrected for the waste that is actually in storage within the TSA-RE (53,300 m<sup>3</sup>). The revised inventory was annualized with the assumption of a maximum yearly retrieval rate of drum equivalents (de) of waste (54,000 de's per year equal to 11,245 m<sup>3</sup>/yr). This annual retrieval rate is likely larger than that amount that would ever be retrieved, but represents a maximum volume of waste available to release per year. The assumption was then made that 1% of the containers retrieved would be completely

breached (both inner and outer containment barriers compromised) and that 1% of the waste within the breached containers would escape from the breach and represent potential loose contamination. A total of 25% of the waste that escaped the breached containers is assumed to have contaminated the tarps and plywood. Only 1% is assumed to have contaminated the tarps since they are only used to cover the containers on the top and between existing fire breaks. The majority of the waste, the remaining 24%, is assumed to have contaminated the plywood sheets since these sheets were used to cover each subsequent layer of containers, as they were stacked upon each other. No contamination is assumed to have escaped the surfaces of the tarps and plywood as they are transported from the TSA-RE to the SSC in WMF-635. Once in the SSC, during the handling and sizing of the tarps, 1% of the contaminants are assumed to have escaped the surface and 1% of those escaped contaminants are assumed to have remained air borne. In the case of the plywood, 5% of the contaminants are assumed to have escaped the surface as a result of cutting and handling and 5% of the escaped contaminants are assumed to have remained airborne. These airborne contaminants are then filtered by means of the HEPA filter in the tent (conservative estimated efficiency of 99% used) prior to their being emitted up the WMF-635 stack.

In the case of the drums that are transported to the SSC for visual examination and/or absorption operations, the same general assumptions are followed with the exception of the breached aspect. All drums are assumed to be structurally sound. Also, the number of drums brought into the tent on a yearly basis is founded on the assumed processing rate of 30 drums/day maximum. This results in a total yearly drum throughput of 10,950 versus the 54,000 drum retrieval rate used for the tarps and plywood. The justification is that the 54,000 drums retrieved overall have the potential to contaminate the tarps and plywood; however, this is not complicit with the number of drums actually brought into the SSC in WMF-635 for visual examination and/or the addition of absorbents. During visual examination and absorption, it is assumed that 0.1 pounds per ton of material processed is released to the air. This corresponds to 0.005% of the maximum potential throughput. At this point, assumptions for handling plywood, tarps and drums are the same. Per previously accepted calculations used in the permit to construct for the retrieval operations at the TSA-RE, 0.01% of the material originally released to the atmosphere remains suspended and exists as potential exposure.

The total exposure to any individual beyond the INEEL border is  $8.3E-02$  mrem/yr unmitigated and  $8.3E-04$  mrem/yr mitigated (very conservative HEPA efficiency of 99%). This exposure occurs in the SSW direction from the facility (WMF-635 stack). Regulatory limits state that no individual can be exposed to more than 10 mrem/yr as a result of stack emissions and permit exemption criteria state that the exposure must be less than 1% of the accepted standard or 0.1 mrem/yr. Therefore, the exposure to an individual as a result of radionuclide emissions from the handling and processing of tarps and plywood in the SSC by way of WMF-635 stack emissions is within regulatory permit exemption criteria. Continuous monitoring is not required because the unmitigated dose is less than 0.1 mrem/yr. Confirmatory measurements are necessary to verify that emissions are below the regulatory limit. An Appendix D calculation was performed (.003 mrem/yr) to show that an application to construct is not required. The calculations for the different source terms in curies per year are included in Table 4.1 and the CAPP-88 modeling results appear at the end of this exemption.

Table 4.1 Radionuclide Estimate

Radionuclide <sup>1</sup>	Best Estimate Activity <sup>2</sup> (Ci)	Activity retrieved each year	Yearly release from ruptured drums (Ci/yr)	Resuspension factor for Tarps and Plywood	Resuspension for Visual Examination and Absorbtion	Unmitigated Release	99% HEPA per App. D
Am-241	1.22E+05	2.11E+04	2.11E+00	1.27E-03	2.14E-04	1.48E-03	1.48E-05
Pu-238	1.16E+05	2.01E+04	2.01E+00	1.21E-03	2.03E-04	1.41E-03	1.41E-05
Pu-239	6.87E+04	1.19E+04	1.19E+00	7.14E-04	1.20E-04	8.35E-04	8.35E-06
Pu-240	1.59E+04	2.75E+03	2.75E-01	1.65E-04	2.79E-05	1.93E-04	1.93E-06
Pu-242	1.04E+00	1.80E-01	1.80E-05	1.08E-08	1.82E-09	1.26E-08	1.26E-10
Pu-241	1.61E+05	2.78E+04	2.78E+00	1.67E-03	2.82E-04	1.96E-03	1.96E-05
Ba-137m	2.25E+03	3.89E+02	3.89E-02	2.34E-05	3.95E-06	2.73E-05	2.73E-07
Cs-137	2.26E+03	3.91E+02	3.91E-02	2.35E-05	3.96E-06	2.75E-05	2.75E-07
Sr-90	2.02E+03	3.49E+02	3.49E-02	2.10E-05	3.54E-06	2.45E-05	2.45E-07
Y-90	2.02E+03	3.49E+02	3.49E-02	2.10E-05	3.54E-06	2.45E-05	2.45E-07
U-233	1.02E+03	1.76E+02	1.76E-02	1.06E-05	1.79E-06	1.24E-05	1.24E-07
Cm-244	5.39E+02	9.32E+01	9.32E-03	5.60E-06	9.45E-07	6.55E-06	6.55E-08
H-3	2.64E+02	4.57E+01	4.57E-03	4.57E-03	4.57E-03	4.57E-03	4.57E-03
Cs-134	1.11E+02	1.92E+01	1.92E-03	1.15E-06	1.95E-07	1.35E-06	1.35E-08
Co-60	1.00E+02	1.73E+01	1.73E-03	1.04E-06	1.75E-07	1.21E-06	1.21E-08
Bi-212 <sup>1</sup>	2.66E+01	4.60E+00	4.60E-04	2.77E-07	4.66E-08	3.23E-07	3.23E-09
C-14	2.38E+00	4.12E-01	4.12E-05	4.12E-05	4.12E-05	4.12E-05	4.12E-05
Ce-144	2.71E+01	4.69E+00	4.69E-04	2.82E-07	4.75E-08	3.29E-07	3.29E-09
Fe-55	1.13E+00	1.95E-01	1.95E-05	1.17E-08	1.98E-09	1.37E-08	1.37E-10
Kr-85	6.86E+00	1.19E+00	1.19E-04	7.13E-08	1.20E-08	8.33E-08	8.33E-10
Ni-63	3.57E+00	6.17E-01	6.17E-05	3.71E-08	6.26E-09	4.34E-08	4.34E-10
Pb-212	2.66E+01	4.60E+00	4.60E-04	2.77E-07	4.66E-08	3.23E-07	3.23E-09
Pm-147	2.73E+01	4.72E+00	4.72E-04	2.84E-07	4.79E-08	3.32E-07	3.32E-09
Po-212	1.70E+01	2.94E+00	2.94E-04	1.77E-07	2.98E-08	2.07E-07	2.07E-09
Po-216	2.66E+01	4.60E+00	4.60E-04	2.77E-07	4.66E-08	3.23E-07	3.23E-09
Pr-144	2.72E+01	4.70E+00	4.70E-04	2.83E-07	4.77E-08	3.30E-07	3.30E-09
Ra-224	2.66E+01	4.60E+00	4.60E-04	2.77E-07	4.66E-08	3.23E-07	3.23E-09
Sb-125	1.65E+00	2.85E-01	2.85E-05	1.72E-08	2.89E-09	2.00E-08	2.00E-10
Th-228	2.66E+01	4.60E+00	4.60E-04	2.77E-07	4.66E-08	3.23E-07	3.23E-09
Th-232	7.31E+00	1.26E+00	1.26E-04	7.60E-08	1.28E-08	8.88E-08	8.88E-10
Tl-208	9.54E+00	1.65E+00	1.65E-04	9.92E-08	1.67E-08	1.16E-07	1.16E-09
U-232	2.60E+01	4.50E+00	4.50E-04	2.70E-07	4.56E-08	3.16E-07	3.16E-09
U-234	5.78E+00	1.00E+00	1.00E-04	6.01E-08	1.01E-08	7.02E-08	7.02E-10
Totals	4.94E+05	8.55E+04	8.55E+00	9.74E-03	5.47E-03	1.06E-02	4.67E-03

1 Bi<sub>212</sub> through U<sub>234</sub> are "minor" radionuclides having an activity > 1 Ci but not included in Table 2-7 INEL-95/0412

2 Best estimate activities from Table 4-1 INEL-95/0412 (Raivo et. al.)

3. From this table, only those radionuclides with estimated activity greater than 1 curie were considered for this source term

4 Non-Debris mass is 43% of total waste mass per mass balance sheet

5 H-3 and C-14 (gases) activity figured assuming all is evenly distributed in 11 drums, per INEL EDF PSPI-015546.

6 Radon (Rn-220) not included per 40 CFR 61, Subpart H

## 4.2 Particulate

Particulate emissions were calculated using accepted various assumptions. Many of these assumptions are identical to those made for the radionuclide emission estimates in terms of release estimates with regards to cutting and suspension. From estimates provided by BNFL, the average retrieval rate for tarps is considered to be one drum equivalent per day (55 gallon drum) in volume.

The retrieval rate for the plywood was slightly different in that it took into account the retrieval rate of actual containers. On a daily basis, approximately 120 drum equivalents are retrieved. For every eight-drum equivalents there is, on average, one sheet of plywood retrieved. Therefore, there are approximately 15 sheets of plywood removed from the pile each day. Each sheet of plywood is 4'x8'x0.75". This results in a daily equivalent volume of 30 ft<sup>3</sup> or 224.4 gallons, which equals 4.1 drum equivalents per day of plywood. Not all the plywood is contaminated. However, for conservative reasons, it is assumed that all of the plywood that is dispersed into air as a result of cutting is contaminated. As stated in the radionuclide analysis, 1% of the retrieved drums are considered breached (both layers) and 1% of their contents escape. Of that amount that escapes, 1% lingers on the surface of the tarps and 24% lingers on the surface of the plywood. As these tarps and sheets of plywood are brought into the SSC in WMF-635 for processing and packaging it is assumed that none of the contaminants "fall off" during transportation.

In the case of tarps, shears or scissors will be used to size the material for packaging. As this takes place the assumption stands that 1% of the material will become contaminated scraps or threads and that 1% of these contaminated threads will then remain airborne.

In the case of the plywood, electric saws and similar tools will be used to size the sheets for packaging. As this occurs, it is assumed that 5% of the plywood will end up as sawdust and that 5% of the total sawdust will remain airborne as a result of the actual cutting or by way of disturbance from cleaning or handling.

In the case of the drums, during visual examination there is assumed to be no release of particulate since the contents are not disturbed. However, when absorbent is added and stirred into any free liquids there is the potential for release. For conservative reasons, it is assumed that

absorbent is added to all drums that pass through the SSC. The release of particulate is assumed to be the same as for the radionuclides. For every ton of waste “processed” there are 0.1 pounds of particulate released, or 0.005%.

All of the airborne particulate contaminants (whether contaminated dust or threads or actual contaminants themselves like metals, etc.) will then be filtered by way of the HEPA filter in the SSC prior to being vented out the WMF-635 stack. The table below details the calculations used to arrive at the initial particulate levels.

Table 4.2 Particulate Estimate

Process Area		Retrieval Rate	% DE Contents Released	Waste Type	Waste Density	Waste Throughput	Emission Factor	HEPA Filter Temp Shelter	Total PM Emittted
	Notes	a	b	c	d		e		
		dm/dy	%		Lb/dm	ton/hr	PM emitted	PM RE	lb/hr
Tarps	f	1	0.0001%	D	171	3.567E-09	0.0001	99.0%	3.6E-15
Plywood Sheets	g	4.1	0.0024%	D	171	3.509E-07	0.0025	99.0%	8.8E-12
Visual Examination		30		ND	525	3.281E-01	0	99.0%	0.0E+00
Absorbant Addition		30		ND	525	3.281E-01	0.00005	99.0%	1.6E-07
<b>Total Contaminated PM</b>									1.6E-07

a. All retrieval rates have been converted to standard "dm/dy" to homogenize the reporting rates for plywood and tarps.

b. Fraction based on total amount of waste, percent of ruptured/leaking drums (1%), percent of material that escaped from leaking drums (1%), and percent that came in contact with the retrieved material [tarps (1%) or plywood (24%)].

c. Both tarps and plywood considered debris waste, other actual drums would be considered non-debris.

d. Waste density dependent on average calculated from provided data by BBWI/BNFL (Raivo). Using average non-debris density.

e. TARPS: 1 percent of the total volume of the tarps will end up as scraps as a result of cutting with shears. 1 percent of those scraps will end up as loose fibers suspended in the air at which point they are then filtered by the HEPA filter prior to exiting the tent. PLYWOOD: 5% of the total volume of plywood ends up as sawdust as a result of cutting. 5% of the sawdust is in fine enough particles to remain suspended in the air. ABSORBANT: From stirring of absorbent into any sludge-like matter, there will be approximately 0.1 pounds per ton of sludge that is suspended into the air as particulate. (0.1 lb emitted per ton processed from AP-42, Table 11.12-2, Emission Factors for Concrete Batching).

f. As per guidance from Tim Solle (via operations personnel), the estimated volume of tarps removed on a daily basis equates to approximately 1 dm/dy.

g. Using the estimated drum removal rate for the TSA-RE recovery process of 120 dm/dy and the average of 8 dm/sheet of plywood, there are approximately 15 sheets of plywood removed from the pile each day. Each sheet of plywood is 4'x8'x0.75". This results in a daily equivalent volume of 30 ft<sup>3</sup> or 224.4 gallons, which equals 4.1 dm/dy of plywood. Not all the plywood is contaminated however for conservative reasons, it is assumed that all of the plywood is dispersed into air as a result of cutting is contaminated.

### 4.3 Volatile Organics

The emission estimates for the volatile organics are similar in calculation up to the point of determining how much of the contaminants escape. At this point the volume of the VOCs are converted to a tons per hour “emission” rate. These initial “emissions” are then adjusted for the

amount of the VOCs (liquids soaked into either the plywood or tarps) that escape to the atmosphere as a result of sizing and packaging operations that occur in WMF-635. The following table details the calculations that were performed to arrive at a VOC emission rate as a result of sizing and packaging operations that will occur in WMF-635.

Table 4.3 Volatile Organic Chemicals (VOC) Estimate

Process Area		Retrieval Rate	% DE Contents Released	Waste Form Fraction	Waste Type	Waste Density	Waste Throughput	Liquid Throughput	Emission Factor	"VOC" Emissions
	Notes	a	b	C	c	d	e	f	g	h
		dm/dy	%	%		lb/dm	ton/hr	ton/hr	lb/ton	lb/hr
Tarps		1	0.0001%	100%	D	171	0.00000	0.0000000	0.72	6.68E-12
Plywood Sheets		4.1	0.0024%	100%	D	171	0.00001	0.0000000	7.20	6.57E-09
Visual Examination		30	-	-	ND	525	0.32805	0.0008529	0.72	6.14E-04
Absorbant Addition		30	-	-	ND	525	0.32805	0.0008529	0.72	6.14E-04

a. All retrieval rates have been converted to standard "dm/dy" to homogenize the reporting rates.

b. Fraction based on total amount of waste, percent of ruptured/leaking drums (1%), percent of material that escaped from leaking drums (1%), and percent that came in contact with the retrieved material [tarps (1%) or plywood(24%)].

c. Both waste types considered 100% debris waste.

d. Waste density dependent on average calculated from provided data by BBWI/BNFL (Raivo). Using average debris density.

e. For actions with retrieval rates given in de per day, Waste Throughput (ton/hr) = Retrieval Rate (de/dy) x Waste Density (lb/de) / (2000 lb/ton x 24 hr/day).

f. The concentration of organic liquid in the waste stream was assumed to be up to 1% in up to 26% of the containers; therefore, Organic liquid Throughput = 0.01 x 0.26 x Waste Throughput.

g. Emission factors are from AP-42, Table 4.7-1, Emission Factors for Solvent Reclaiming. Processes handling (disturbing) waste used 0.72 lb VOCs emitted per ton of solvent (liquid). This number used because any spots on the plywood that are contaminated with organic liquid waste could be exposed to extreme heat and agitation when the plywood is cut to size it for disposal into 55-gallon drums. The value for plywood was multiplied by ten to account for heat, friction, and extra "agitation" that will occur as sizing takes place.

h. "VOC" Emissions (lb/hr) = Organic Liquid Throughput (ton/hr) x Emission Factor (lb/ton). "VOCs" = Industrial lubricant (oil) contaminated with VOCs or aqueous solutions.

#### 4.4 Toxic Air Pollutants (TAPs)

The calculations performed to estimate the individual release toxic air pollutants (as defined in the TSA-RE PTC) are based upon the particulate and VOC estimates previously explained. These individual concentrations are based on the worst case waste concentrations. These worst case waste concentrations, which were defined in the TSA-RE PTC, are then taken as a fraction of the total particulate or VOC estimate as detailed in sections 4.2 and 4.3 of this exemption document. The following table details these individual toxic air pollutant emissions. The final

column shows the IDAPA regulatory limits and details that the estimated emissions comply with those requirements for permit exemption qualification. For compliance calculations, the HEPA filtered concentrations for particulates are corrected to remove the HEPA from consideration and provide an unmitigated release estimate. This is done by dividing the value by 0.01 prior to comparison to the IDAPA regulatory limits.

Table 4.4 Toxic Air Pollutant Estimates

Pollutant		Worst-Case Non-Debris	Worst-Case Debris	Debris Removal	Non-Debris Removal	Total Emissions	IDAPA 585,586 Limits
	<i>Notes</i>			<i>a</i>	<i>a</i>		
		wt%	wt%	lb/hr	lb/hr	lb/hr	
<b>"VOC" Emissions</b>	<i>c</i>			<b>1.9E-07</b>	<b>1.2E-03</b>	<b>1.2E-03</b>	
<b>Volatiles</b>							
Acetone		1	1	1.9E-09	1.2E-05	1.2E-05	1.2E+02
Benzene		1	1	1.9E-09	1.2E-05	1.2E-05	8.0E-04
Butanol, n-		0.001	1	1.9E-09	1.2E-08	1.4E-08	1.0E+01
2-Butanone (Methyl ethyl ketone)		1	1	1.9E-09	1.2E-05	1.2E-05	0.0E+00
Carbon tetrachloride		5	1	1.9E-09	6.1E-05	6.1E-05	4.4E-04
Chlorobenzene		1	0	0.0E+00	1.2E-05	1.2E-05	2.3E+01
Chloroform		1	1	1.9E-09	1.2E-05	1.2E-05	2.8E-04
1,2-Dichloroethane		1	1	1.9E-09	1.2E-05	1.2E-05	2.5E-04
Dichloroethylene	<i>d</i>	0	1	1.9E-09	0.0E+00	1.9E-09	5.3E+01
cis-1,2-Dichloroethene	<i>d</i>	0	1	1.9E-09	0.0E+00	1.9E-09	n/a
1,1-Dichloroethylene		1	1	1.9E-09	1.2E-05	1.2E-05	1.3E-04
2-Ethoxyethanol		1	0	0.0E+00	1.2E-05	1.2E-05	1.3E+00
Ethyl benzene		1	1	1.9E-09	1.2E-05	1.2E-05	2.9E+01
Ethyl ether	<i>d</i>	0	1	1.9E-09	0.0E+00	1.9E-09	n/a
Isopropanol		0	1	1.9E-09	0.0E+00	1.9E-09	6.5E+01
Methane	<i>d</i>	0	1	1.9E-09	0.0E+00	1.9E-09	n/a
Methanol		0.003	1	1.9E-09	3.7E-08	3.9E-08	1.7E+01
Methylene chloride		0.07	1	1.9E-09	8.6E-07	8.6E-07	1.6E-03
1,1,2,2-Tetrachloroethane		0	1	1.9E-09	0.0E+00	1.9E-09	1.1E-05
Tetrachloroethylene		1	1	1.9E-09	1.2E-05	1.2E-05	1.3E-02
Toluene		1	1	1.9E-09	1.2E-05	1.2E-05	2.5E+01
1,1,1-Trichloroethane	<i>d</i>	15	1	1.9E-09	1.8E-04	1.8E-04	4.2E-04
1,1,2-Trichloroethane	<i>d</i>	1	0	0.0E+00	1.2E-05	1.2E-05	4.2E-04
Trichlorethylene		1	1	1.9E-09	1.2E-05	1.2E-05	1.8E+01
1,1,2-Trichloro-1,2,2-trifluoroethane	<i>d</i>	5	1	1.9E-09	6.1E-05	6.1E-05	n/a
Xylene		0.005	1	1.9E-09	6.1E-08	6.3E-08	2.9E+01
<b>Semivolatiles</b>				0.0E+00	0.0E+00		
Cyclohexane		1	1	1.9E-09	1.2E-05	1.2E-05	7.0E+01
Nitrobenzene		1	1	1.9E-09	1.2E-05	1.2E-05	3.3E-01
1,2,4-Trimethylbenzene		0	1	1.9E-09	0.0E+00	1.9E-09	8.2E+00
1,3,6-Trimethylbenzene		0	1	1.9E-09	0.0E+00	1.9E-09	8.2E+00
Mercury		2.5	1	1.9E-09	3.1E-05	3.1E-05	1.0E-03
<b>Total PM</b>	<i>e</i>	<b>NA</b>	<b>NA</b>	<b>2.6E-08</b>	<b>1.6E-05</b>	<b>1.6E-05</b>	
<b>Metals</b>							
Arsenic		1	1	2.6E-10	1.6E-07	1.6E-07	1.5E-06
Barium		1	1	2.6E-10	1.6E-07	1.6E-07	3.3E-02
Beryllium		1	1	2.6E-10	1.6E-07	1.6E-07	2.8E-05
Cadmium		1	1	2.6E-10	1.6E-07	1.6E-07	3.7E-06
Chromium		1	1	2.6E-10	1.6E-07	1.6E-07	3.3E-02
Lead	<i>f</i>	1	25	6.4E-09	1.6E-07	1.7E-07	n/a
Nickel		1	0	0.0E+00	1.6E-07	1.6E-07	2.7E-05
Selenium		1	1	2.6E-10	1.6E-07	1.6E-07	1.3E-02
Silver		1	1	2.6E-10	1.6E-07	1.6E-07	1.0E-03
<b>Other Pollutants</b>							
Asbestos		0	45	1.2E-08	0.0E+00	1.2E-08	n/a
Cyanide		1	0	0.0E+00	1.6E-07	1.6E-07	3.3E-01
PCBs		15	1	2.6E-10	2.5E-06	2.5E-06	6.6E-05

#### 4.5 Significant Emissions

Certain pollutants are qualified as being significant emissions. These components are detailed below and are described in IDAPA. Each pollutant's estimated emission rate is defined as is the Significant Emission Threshold as defined by IDAPA codes.

Table 4.5 Significant Emission Limits

Pollutant	Process Emissions (ton/yr)	Total Emissions (ton/yr)	Significant Emission Threshold (ton/yr)
Asbestos	5.1E-08	5.1E-08	0.007
Beryllium	7.2E-07	7.2E-07	0.0004
Carbon monoxide	0.0E+00	0.0E+00	100
Lead	7.5E-07	7.5E-07	0.6
Mercury	1.3E-04	1.3E-04	0.1
Nitrogen oxides	0.0E+00	0.0E+00	40
Ozone (VOCs)	5.4E-03	5.4E-03	40
Particulate matter	7.2E-05	7.2E-05	25
PM-10	7.2E-05	7.2E-05	15
Sulfur dioxide	0.0E+00	0.0E+00	40
Radionuclides			mrem/yr
	Unmitigated	0.083	10 (0.1)
	Mitigated	0.00083	10 (0.1)

#### 4.6 NAAQS

IDAPA 58.01.01.203.02 requires that new or modified stationary sources demonstrate that they would not cause, or significantly contribute to, a violation of any National Ambient Air Quality Standards (NAAQS), as specified in Section 577 of IDAPA 58.01.01.

WMF-635 SSC emission estimates for CO, lead (Pb), nitrogen dioxide (NO<sub>2</sub>), ozone (VOCs), PM-10, and SO<sub>2</sub> were used to determine maximum ambient contributions, regardless of whether these worst-case concentrations were located at points accessible to the public. This was accomplished by determining the worst-case ambient concentrations using the Screen3 dispersion model. For ambient concentrations based on yearly averages, the Screen3 annual

concentration was used. The maximum ambient contributions were then added to the background ambient concentrations for these pollutants and the totals compared with the Section 577 NAAQS. Values for CO, NO<sub>x</sub>, and SO<sub>2</sub> are not shown because they are not potential emissions from the processes that take place in WMF-635. The results are shown in Table 4-6. The estimated WMF-635 ambient contributions are all at least an order of magnitude lower than the Idaho background ambient concentrations obtained from Idaho DEQ. The combined ambient concentrations are still significantly below the NAAQS limits.

Table 4.6 NAAQS

NAAQS				
Pollutant	Lead	Ozone	PM-10	PM-10
(Units vary, see below )	(quarter)	(1-hr)	(annual)	(24-hr)
Main Stack Emissions	1.6E-07	1.2E-03	7.2E-05	7.2E-05
Main Stack Ambient Conc'n.	9.4E-03	4.7E-02	1.9E-03	9.4E-03
ID Background Ambient Conc'n.	1.7E-01	7.8E+01	3.3E+01	8.6E+01
Combined Ambient Conc'n.	1.8E-01	7.8E+01	3.3E+01	8.6E+01
Sect. 577 NAAQS (ug/m <sup>3</sup> )	1.5E+00	2.4E+02	5.0E+01	1.5E+02

## 5.0 Results Analysis

Below is a list of the requirements and how the requirements are met for this Category I Exempt source. The sizing and packaging activities conducted in the Soft-sided Containment Tent located in WMF-635 meet these Category I requirements.

<p><b>220. GENERAL EXEMPTION CRITERIA FOR PERMIT TO CONSTRUCT EXEMPTIONS</b></p> <p><b>01. General Exemption Criteria.</b> Sections 220 through 223 may be used by owners or operators to exempt certain sources from the requirement to obtain a permit to construct. No permit to construct is required for a source that satisfies all of the following criteria, in addition to the criteria set forth at Sections 221, 222, or 223:</p> <p><b>a.</b> The maximum capacity of a source to emit an air pollutant under its physical and operational design without consideration of limitations on emission such as air pollution control equipment, restrictions on hours of operation and restrictions on the type and amount of material combusted, stored or processed would not:</p> <p><b>i.</b> Equal or exceed one hundred (100) tons per year of any regulated air pollutant.</p>	
<b>Response</b>	<p>This source will not exceed one hundred tons per year of any regulated air pollutant (see Table 4.5).</p>
	<p><b>ii.</b> Cause an increase in the emissions of a major facility that equals or exceeds the significant emissions rates set out in the definition of significant at Section 006.</p>
<b>Response</b>	<p>This source does not exceed any significant levels listed in Section 006 (see Table 4.5).</p>
	<p><b>iii.</b> Cause or significantly contribute to a violation of an ambient air quality standard, based upon the applicable air quality models, data bases, and other requirements of 40 CFR Part 51, Appendix W (Guideline on Air Quality Models). No demonstration under this subsection is required for those sources listed at Subsection 222.02.</p>

<b>Response</b>	This activity will not cause or significantly contribute to a violation of an ambient air quality standard. The combined ambient concentrations are still significantly below the NAAQS limits. See Section 4.6 and Table 4.6 NAAQS.
<b>b</b> Combination. The source is not part of a proposed new major facility or part of a proposed major modification.	
<b>Response</b>	The source is not a proposed new facility nor is it a major facility modification.
<p><b>02. Record Retention.</b> Unless the source is subject to and the owner or operator complies with Section 385, the owner or operator of the source, except for those sources listed in Subsections 222.02.a. through 222.02.g., shall maintain documentation on site, which shall identify the exemption determined to apply to the source and verify that the source qualifies for the identified exemption. The records and documentation shall be kept for a period of time not less than five (5) years from the date the exemption determination has been made or for the life of the source for which the exemption has been determined to apply, which ever is greater, or until such time as a permit to construct or an operating permit is issued which covers the operation of the source. The owner or operator shall submit the documentation to the Department upon request.</p>	
<b>Response</b>	A copy of this exemption will be kept in the Facility Operating Record and submitted to the Department upon request.
<p><b>221. CATEGORY I EXEMPTION.</b></p> <p>No permit to construct is required for a source that satisfies the criteria set forth in Section 220 and the following:</p> <p><b>01. Below Regulatory Concern.</b> The maximum capacity of a source to emit an air pollutant under its physical and operational design considering limitations on emissions such as air pollution control equipment, restrictions on hours of operation and restrictions on the type and amount of material combusted, stored or processed shall be less than ten percent (10%) of the significant emission rates set out in the definition of significant at Section 006.</p>	

<b>Response</b>	Emissions from this source are below regulatory concern as specified in Section 006 (see Table 4.5).
<b>02</b> The source shall have potential emissions that are less than one percent (1%) of the applicable radionuclides standard in 40 CFR Part 61, Subpart H.	
<b>Response</b>	Radionuclide emissions for this process are below 1% of the regulatory requirements stated in 40 CFR Part 61, Subpart H. (See Table 4.1)
<b>03 Toxic Air Pollutants.</b> The source shall comply with Section 223.	
<b>Response</b>	All pollutants of concern meet the requirements of IDAPA 58.01.01.223 for a Level I exemption. (See Section 4.4)
<p><b>223 Exemption Criteria and Reporting Requirements for Toxic Air Pollutant Emissions.</b></p> <p>No permit to construct for toxic air pollutants are required for a source that satisfies any of the exemption criteria below, the recordkeeping requirements at Subsection 220.02, and reporting requirements as follows:</p>	
<p><b>02. Level I Exemption.</b> To obtain a Level I exemption, the source shall satisfy the following criteria:</p> <ul style="list-style-type: none"> <li>a. The uncontrolled emission rate (refer to Section 210) for all toxic air pollutants shall be less than or equal to all applicable screening emission levels listed in Sections 585 and 586; or</li> <li>b. The uncontrolled ambient concentration (refer to Section 210) for all toxic air pollutants at the point of compliance shall be less than or equal to all applicable acceptable ambient concentrations listed in Sections 585 and 586.</li> </ul>	
<b>Response</b>	The uncontrolled emission rates for all pollutants of concern listed in Sections 585 and 586 are less than or equal to all applicable screening emission levels listed in 585 and 586 (see Table 4.5).

CAP88 Unmitigated Output

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

D O S E   A N D   R I S K   E Q U I V A L E N T   S U M M A R I E S

Non-Radon Individual Assessment

Jul 8, 2003 09:23 am

Facility: WMF-635 Soft Side Containment  
Address: Plywood&TarpSizing,w/ VEAdsorbtion of drums  
Drums:0.005%suspension from stirring  
City: Scolville  
State: ID                      Zip: 83000000

Source Category: Point H=40ft, D=17", V=14,400 cfm  
Source Type: Stack  
Emission Year: 2003

Comments: Plywood-24% rad on ply, 5% sawdust, 5% suspended  
Tarps-1% release on, 1% scraps, 1% suspended

Dataset Name: WMF635 P,T,VE,Ad  
Dataset Date: Jul 8, 2003 09:23 am  
Wind File: C:\CAP88PC2\WINDFILES\CFA10.WND

## ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)
GONADS	1.58E-02
BREAST	1.62E-03
R MAR	1.00E-01
LUNGS	1.58E-01
THYROID	1.59E-03
ENDOST	1.23E+00
RMNDR	5.51E-02
EFFEC	8.88E-02

## PATHWAY EFFECTIVE DOSE EQUIVALENT SUMMARY

Pathway	Selected Individual (mrem/y)
INGESTION	5.02E-03
INHALATION	8.37E-02
AIR IMMERSION	1.05E-09
GROUND SURFACE	4.51E-05
INTERNAL	8.87E-02
EXTERNAL	4.51E-05
TOTAL	8.88E-02

CAP88 Mitigated Output (w/ HEPA at 99% efficiency)

C A P 8 8 - P C

Version 2.00

Clean Air Act Assessment Package - 1988

DOSE AND RISK EQUIVALENT SUMMARIES

Non-Radon Individual Assessment  
Jul 8, 2003 10:51 am

Facility: WMF-635 Soft Side Containment  
Address: Plywood&TarpSizing,w/ VEAdsorbtion of drums  
Drums:0.005%suspension from stirring  
City: Scolville  
State: ID Zip: 83000000

Source Category: Point H=40ft, D=17", V=14,400 cfm  
Source Type: Stack  
Emission Year: 2003

Comments: Plywood-24% rad on ply, 5% sawdust, 5% suspended  
Tarps-1% release on, 1% scraps, 1% suspended

Dataset Name: WMF635PTVEAdHEPA  
Dataset Date: Jul 8, 2003 10:51 am  
Wind File: C:\CAP88PC2\WINDFILES\CFA10.WND

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)
GONADS	1.58E-04
BREAST	1.64E-05
R MAR	1.00E-03
LUNGS	1.58E-03
THYROID	1.60E-05
ENDOST	1.23E-02
RMNDR	5.51E-04
EFFEC	8.88E-04

PATHWAY EFFECTIVE DOSE EQUIVALENT SUMMARY

Pathway	Selected Individual (mrem/y)
INGESTION	5.04E-05
INHALATION	8.37E-04
AIR IMMERSION	1.05E-11
GROUND SURFACE	4.51E-07
INTERNAL	8.87E-04
EXTERNAL	4.51E-07
TOTAL	8.88E-04