APPENDIX H PAGES ARE NOT
NUMBERED SEQUENTIALLY

INITIAL gj DATE 10/22/03

Appendix H

Mass Balances

Appendix H

Mass Balances

The mass balances **for** the various treatment alternatives were developed as Excel worksheets. These worksheets are stored on the accompanying CD.

The following pages are a printout of information contained on referenced Compact Disk (CD)

PIT 9 ALT 1 COMPACT ALL.XLS

Assay

Incoming Streams Component	Feed Mass (kgs)	Stream2 Mass (kgs)	Stream3 Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	>100 nCi/g Mass (kgs)	<100 nCi/g Mass (kgs)		
Steel non-combustible debris	619,224			619,224	0.50	0.50	309,612	309,612	3.1%	3.1%
Water in steel etc.	154,806			154,806	0.50	0.50	77,403	77,403	0.8%	0.8%
Combustible Debris	252,074			252,074	0.50	0.50	126,037	126,037	1.3%	1.3%
Water in combustibles	63,019			63,019	0.50	0.50	31,510	31,510	0.3%	0.3%
Noncombustible Sludge	152,983			152,983	0.50	0.50	76,492	76,492	0.8%	0.8%
Water in noncombustible sludge	53,751			53,751	0.50	0.50	26,876	26,876	0.3%	0.3%
Oil & VOCs	217,445			217,445	0.50	0.50	108,723	108,723	1.1%	1.1%
Soil	13,656,364			13,656,364	0.50	0.50	6,828,182	6,828,182	68.4%	68.4%
Water in soil	4,798,182			4,798,182	0.50	0.50	2,399,091	2,399,091	24.0%	24.0%
Total Mass	19,967,848	0	0	19,967,848			9,983,924	9,983,924	100.0%	100.0%
Average Density	1,057			1,057			1,057	1,057		
Total Volume	18,883			18,883			9,442	9,442		
Combined Volatile Constitutents										
Carbon	58,904			58,904	0.50	0.50	29,452	29,452		
Chloride	150,171			150,171	0.50	0.50	75,086	75,086		
Hydrogen	7,371			7,371	0.50	0.50	3,686	3,686		
Oxygen	932			932	0.50	0.50	466	466		
Nitrogen	67			67	0.50	0.50	34	34		
Combined Combustible Constitutents										
Carbon	127,027			127,027	0.50	0.50	63,514	63,514		
Chloride	452			452	0.50	0.50	226	226		
Hydrogen	15,925			15,925	0.50	0.50	7,963	7,963		
Oxygen	105,427			105,427	0.50	0.50	52,714	52,714		
Nitrogen	3,243			3,243	0.50	0.50	1,622	1,622		

List of assumptions:

sort

Incoming Streams	>100 nCi/g	Stream 2	Stream 3	Composite Feed	Conversion Factors	Conversion Factors	sort	Product 2	
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0	3.1%
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0	0.8%
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0	1.3%
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	0.3%
Noncombustible Sludge	76,492			76,492	1.00	0.00	76,492	0	0.8%
Water in noncombustible sludge	26,876			26,876	1.00	0.00	26,876	0	0.3%
Oil & VOCs	108,723			108,723	1.00	0.00	108,723	0	1.1%
Soil	6,828,182			6,828,182	1.00	0.00	6,828,182	0	68.4%
Water in Soil	2,399,091			2,399,091	1.00	0.00	2,399,091	0	24.0%
Total Mass	9,983,924			9,983,924			9,983,924	0	100.0%
Average Density	1,057			1,057			1,057		
Total Volume	9,442			9,442			9,442		
Combined Volatile Constitutents									
Carbon	29,452			29,452	1.00	0.00	29,452	0	
Chloride	75,086			75,086	1.00	0.00	75,086	0	
Hydrogen	3,686			3,686	1.00	0.00	3,686	0	
Oxygen	466			466	1.00	0.00	466	0	
Nitrogen	34			34	1.00	0.00	34	0	
Combined Combustible Constitutents									
Carbon	63,514			63,514	1.00	0.00	63,514	0	
Chloride	226			226	1.00	0.00	226	0	
Hydrogen	7,963			7,963	1.00	0.00	7,963	0	
Oxygen	52,714			52,714	1.00	0.00	52,714	0	
Nitrogen	1,622			1,622	1.00	0.00	1,622	0	

List of assumptions:

Fraction of waste that goes to Shredding	100%

Shredding

Incoming Streams	Sort	Stream2	Stream3	Composite Feed	Conversion Factors	Conversion Factors	Shredded Waste	Product 2
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0
Noncombustible Sludge	76,492			76,492	1.00	0.00	76,492	0
Water in noncombustible sludge	26,876			26,876	1.00	0.00	26,876	0
Oil & VOCs	108,723			108,723	1.00	0.00	108,723	0
Soil	6,828,182			6,828,182	1.00	0.00	6,828,182	0
Water in soil	2,399,091			2,399,091	1.00	0.00	2,399,091	0
Total Mass	9,983,924	0	0	9,983,924			9,983,924	0
Average Density	1,057			1,057			1,175	0
Total Volume	9,442			9,442			8.499	
Combined Volatile Constitutents								
Carbon	29,452			29,452	1.00	0.00	29,452	0
Chloride	75,086			75,086	1.00	0.00	75,086	0
Hydrogen	3,686			3,686	1.00	0.00	3,686	0
Oxygen	466			466	1.00	0.00	466	0
Nitrogen	34			34	1.00	0.00	34	0
Combined Combustible Constitutents								
Carbon	63,514			63,514	1.00	0.00	63,514	0
Chloride	226			226	1.00	0.00	226	0
Hydrogen	7,963			7,963	1.00	0.00	7,963	0
Oxygen	52,714			52,714	1.00	0.00	52,714	0
Nitrogen	1,622			1,622	1.00	0.00	1,622	0

List of assumptions:

Repackage for Shipment to WIPP

Incoming Streams	Shredded Waste	Drum Stream 2	Stream 3	Composite Feed	Conversion Factors	Conversion Factors	Repackage WIPP	Product 2
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)
Steel noncombustible debris	309,612			309,612	1.00	0.00	309,612	0
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0
Noncombustible Sludge	76,492			76,492	1.00	0.00	76,492	0
Water in noncombustible sludge	26,876			26,876	1.00	0.00	26,876	0
Oil & VOCs	108,723			108,723	1.00	0.00	108,723	0
Soil	6,828,182			6,828,182	1.00	0.00	6,828,182	0
Water in soil	2,399,091			2,399,091	1.00	0.00	2,399,091	0
Drums	0	1,996,785		1,996,785	1.00	0.00	1,996,785	0
	0							
	0							
	0							
Total Mass	9,983,924	1,996,785	0	11,980,709			11,980,709	0
Average Density	1,175						1,175	0
Total Volume	8,499						10,199	0
Combined Volatile Constitutents								
Carbon	29,452			29,452	1.00	0.00	29,452	0
Chloride	75,086			75,086	1.00	0.00	75,086	0
Hydrogen	3,686			3,686	1.00	0.00	3,686	0
Oxygen	466			466	1.00	0.00	466	0
Nitrogen	34			34	1.00	0.00	34	0
Combined Combustible Constitutents								
Carbon	63,514			63,514	1.00	0.00	63,514	0
Chloride	226			226	1.00	0.00	226	0
Hydrogen	7,963			7,963	1.00	0.00	7,963	0
Oxygen	52,714			52,714	1.00	0.00	52,714	0
Nitrogen	1,622			1,622	1.00	0.00	1,622	0

List of assumptions:

Compact for Shipment to WIPP

Incoming Streams	Repackage WIPP Mass (kgs)	Drums Mass (kgs)	Stream 3 Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	To WIPP Mass (kgs)	Product 2 Mass (kgs)
Component								
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0
Noncombustible Sludge	76,492			76,492	1.00	0.00	76,492	0
Water in noncombustible sludge	26,876			26,876	1.00	0.00	26,876	0
Oil & VOCs	108,723			108,723	1.00	0.00	108,723	0
Soil	6,828,182			6,828,182	1.00	0.00	6,828,182	0
Water in soil	2,399,091			2,399,091	1.00	0.00	2,399,091	0
Drums	1,996,785	54,456		2,051,241	1.00	0.00	2,051,241	0
	0							
	0							
	0							
Total Mass	11,980,709	54,456	0	12,035,165			12,035,165	0
Average Density	1,175						1,600	0
Total Volume	10,199						7,522	0
Combined Volatile Constitutents								
Carbon	29,452			29,452	1.00	0.00	29,452	0
Chloride	75,086			75,086	1.00	0.00	75,086	0
Hydrogen	3,686			3,686	1.00	0.00	3,686	0
Oxygen	466			466	1.00	0.00	466	0
Nitrogen	34			34	1.00	0.00	34	0
Combined Combustible Constitutents								
Carbon	63,514			63,514	1.00	0.00	63,514	0
Chloride	226			226	1.00	0.00	226	0
Hydrogen	7,963			7,963	1.00	0.00	7,963	0
Oxygen	52,714			52,714	1.00	0.00	52,714	0
Nitrogen	1,622			1,622	1.00	0.00	1,622	0

List of assumptions:

After shredding, mixture is homogeneous and when compacted has a density of 1600 kg/m3

Summary of Disposal

	Disposal at WIPP		Return to Pit 9	
	Weight, kg	Volume, m^3	Weight, kg	Volume, m^3
Assay			9,983,924	9,442
Compacted Waste	12,035,165	7,522		
Total	12,035,165	7,522	9,983,924	9,442

1. Total volume to WPP	7,522
2. Total volume to Pit 9	9,442
3. Increase in volume returned to Pit 9	50%
4. Volume of secondary waste	0

Shredding

numbers below adjusted because haven't assayed yet

Incoming Streams	sort		Sort	Shred	Repackage after assay WIPP		after compaction	
Component	Mass (kgs)							
Steel non-combustible debris	309,612							
Water in steel etc.	77,403							
Combustible Debris	126,037		DEBRIS **MASS**					
Water in combustibles	31,510		1,089,123	1,089,123	1,306,948	653,474	718,821	
Noncombustible Sludge	76,492		DEBRIS DENSITY &VOLUME					
Water in noncombustible sludge	26,876		291	582				
Oil & VOCs	108,723		3,742	1,871	2,245	1,122	561	
Soil	6,828,182							
Water in soil	2,399,091		**TOTAL SOIL + SI SCREENING**		**PACKAGE AFTER ASSAY**		**Soil after TD**	
			18,878,725		19,822,661	9,911,331	6,904,674	soil and sludge less water & organics
			SOIL DENSITY &VOLUME					
		density	1,248				1121.795	assumed dry soil density of 70 lbm/ft3
Total Mass	9,983,924	volume	15,128		18,153	9,077	6,155	
Average Density	1,057							
Total Volume	9,442	check	9,435					
Combined Volatile Constitutents								
Carbon	29,452							
Chloride	75,086		ASSUMPTIONS:					
Hydrogen	3,686		soil weight increase after packaging			5%		
Oxygen	466		soil vol increase after packaging			20%		
Nitrogen	34							
Combined Combustible Constitutents								
Carbon	63,514							
Chloride	226							
Hydrogen	7,963							
Oxygen	52,714							
Nitrogen	1,622							

List of assumptions:

PIT 9 ALT 2a THERMAL ALL.XLS

sort

incoming Streams	> 100 nCi/g			Composite Feed	Conversion Factors	Conversion Factors	sort		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0	3.1%
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0	0.8%
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0	1.3%
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	0.3%
Noncombustible Sludge	76,492			76,492	1.00	0.00	76,492	0	0.8%
Water in noncombustible sludge	26,876			26,876	1.00	0.00	26,876	0	0.3%
Oil & VOCs	108,723			108,723	1.00	0.00	108,723	0	1.1%
Soil	6,828,182			6,828,182	1.00	0.00	6,828,182	0	68.4%
Water in Soil	2,399,091			2,399,091	1.00	0.00	2,399,091	0	24.0%
Total Mass	9,983,924			9,983,924			9,983,924	0	100.0%
Average Density	1,057			1,057			1,057		
Total Volume	9,442			9,442			9,442		
Combined Volatile Constitutents									
Carbon	29,452			29,452	1.00	0.00	29,452	0	
Chloride	75,086			75,086	1.00	0.00	75,086	0	
Hydrogen	3,686			3,686	1.00	0.00	3,686	0	
Oxygen	466			466	1.00	0.00	466	0	
Nitrogen	34			34	1.00	0.00	34	0	
Combined Combustible Constitutents									
Carbon	63,514			63,514	1.00	0.00	63,514	0	
Chloride	226			226	1.00	0.00	226	0	
Hydrogen	7,963			7,963	1.00	0.00	7,963	0	
Oxygen	52,714			52,714	1.00	0.00	52,714	0	
Nitrogen	1,622			1,622	1.00	0.00	1,622	0	

List of assumptions:

Shredding

Incoming Streams	sort			Composite Feed	Conversion Factors	Conversion Factors	Shredded	
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0
Noncombustible Sludge	76,492			76,492	1.00	0.00	76,492	0
Water in noncombustible sludge	26,876			26,876	1.00	0.00	26,876	0
Oil & VOCs	108,723			108,723	1.00	0.00	108,723	0
Soil	6,828,182			6,828,182	1.00	0.00	6,828,182	0
Water in soil	2,399,091			2,399,091	1.00	0.00	2,399,091	0
Total Mass	9,983,924	0	0	9,983,924			9,983,924	0
Average Density	1,057			1,057			1,175	0
Total Volume	9,442			9,442			8.499	
Combined Volatile Constitutents								
Carbon	29,452			29,452	1.00	0.00	29,452	0
Chloride	75,086			75,086	1.00	0.00	75,086	0
Hydrogen	3,686			3,686	1.00	0.00	3,686	0
Oxygen	466			466	1.00	0.00	466	0
Nitrogen	34			34	1.00	0.00	34	0
Combined Combustible Constitutents								
Carbon	63,514			63,514	1.00	0.00	63,514	0
Chloride	226			226	1.00	0.00	226	0
Hydrogen	7,963			7,963	1.00	0.00	7,963	0
Oxygen	52,714			52,714	1.00	0.00	52,714	0
Nitrogen	1,622			1,622	1.00	0.00	1,622	0

List of assumptions:

Thermal Treatment

Incoming Streams Component	Shredding Mass (kgs)	Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Thermal Trt Bottoms Mass (kgs)	Offgas Mass (kgs)		
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0	4.3%	0.0%
Water in steel etc.	77,403			77,403	0.00	1.00	0	77,403	0.0%	2.8%
Combustible Debris	126,037			126,037	0.00	1.00	0	126,037	0.0%	4.6%
Water in combustibles	31,510			31,510	0.00	1.00	0	31,510	0.0%	1.1%
Noncombustible Sludge	76,492			76,492	1.00	0.00	76,492	0	1.1%	0.0%
Water in noncombustible sludge	26,876			26,876	0.00	1.00	0	26,876	0.0%	1.0%
Oil & VOCs	108,723			108,723	0.00	1.00	0	108,723	0.0%	3.9%
Soil	6,828,182			6,828,182	1.00	0.00	6,828,182	0	94.6%	0.0%
Water in soil	2,399,091			2,399,091	0.00	1.00	0	2,399,091	0.0%	86.6%
Total Mass	9,983,924	0	0	9,983,924			7,214,286	2,769,639	100.0%	100.0%
Average Density	1,175			1,175			1,600	1.3		
Total Volume	8,499			8,499			4,509	2,130,491		
Combined Volatile Constitutents										
Carbon	29,452			29,452	0.00	1.00	0	29,452		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	0.00	1.00	0	3,686		
Oxygen	466			466	0.00	1.00	0	466		
Nitrogen	34			34	0.00	1.00	0	34		
Combined Combustible Constitutents										
Carbon	63,514			63,514	0.00	1.00	0	63,514		
Chloride	226			226	0.00	1.00	0	226		
Hydrogen	7,963			7,963	0.00	1.00	0	7,963		
Oxygen	52,714			52,714	0.00	1.00	0	52,714		
Nitrogen	1,622			1,622	0.00	1.00	0	1,622		

List of assumptions:

Repackage for Shipment to WIPP

Incoming Streams Component	Thermal Trt Bottoms Mass (kgs)	Drum Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Repackage WIPP Mass (kgs)	Mass (kgs)
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0
Water in steel etc.	0			0	0.00	1.00	0	0
Combustible Debris	0			0	1.00	0.00	0	0
Water in combustibles	0			0	0.00	1.00	0	0
Noncombustible Sludge	76,492			76,492	1.00	0.00	76,492	0
Water in noncombustible sludge	0			0	0.00	1.00	0	0
Oil & VOCs	0			0	1.00	0.00	0	0
Soil	6,828,182			6,828,182	1.00	0.00	6,828,182	0
Water in soil	0			0	0.00	1.00	0	0
Drums		0		0	1.00	0.00	0	0
Total Mass	7,214,286	0	0	7,214,286			7,214,286	0
Average Density	1,600						1,333	0
Total Volume	4,509						5,411	0
Combined Volatile Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	0			0	0.00	1.00	0	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	0			0	0.00	1.00	0	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0

List of assumptions:

Offgas

Incoming Streams Component	Offgas Mass (kgs)	Scrub Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Vent Mass (kgs)	Scrub Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0	2.9%	0.0%
Combustible Debris	126,037			126,037	1.00	0.0018	125,811	226	4.7%	0.1%
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	1.2%	0.0%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in noncombustible sludge	26,876			26,876	1.00	0.00	26,876	0	1.0%	0.0%
Oil & VOCs	108,723			108,723	0.31	0.69	33,637	75,086	1.2%	21.3%
Soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in soil	2,399,091			2,399,091	1.00	0.00	2,399,091	0	89.0%	0.0%
Sodium in Scrub Solution		50,459		50,459	0.00	1.00	0	50,459	0.0%	14.3%
Water in scrub		226,386		226,386	0.00	1.00	0	226,386	0.0%	64.3%
				0	0.00	1.00	0	0	0.0%	0.0%
Total Mass	2,769,639	276,845	0	3,046,484			2,694,327	352,157	100.0%	100.0%
Average Density	1.3	1,200					1.3	1,200		
Total Volume	2,130,491	231					2,072,559	293		
Combined Volatile Constitutents										
Carbon	29,452			29,452	1.00	0.00	29,452	0		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	1.00	0.00	3,686	0		
Oxygen	466			466	1.00	0.00	466	0		
Nitrogen	34			34	1.00	0.00	34	0		
Combined Combustible Constitutents										
Carbon	63,514			63,514	1.00	0.00	63,514	0		
Chloride	226			226	0.00	1.00	0	226		
Hydrogen	7,963			7,963	1.00	0.00	7,963	0		
Oxygen	52,714			52,714	1.00	0.00	52,714	0		
Nitrogen	1,622			1,622	1.00	0.00	1,622	0		

List of assumptions:

Fraction of NaCl in scrub blowdown assuming 25% in final stabilized waste	36%

Stabilize Offgas Blowdown

Incoming Streams Component	Scrub Mass (kgs)	Grout Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Stabilized Mass (kgs)	Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.00%	
Water in steel etc.	0			0	0.00	1.00	0	0	0.00%	
Combustible Debris	226			226	1.00	0.00	226	0	0.04%	
Water in combustibles	0			0	0.00	1.00	0	0	0.00%	
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.00%	
Water in noncombustible sludge	0			0	0.00	1.00	0	0	0.00%	
Oil & VOCs	75,086			75,086	1.00	0.00	75,086	0	14.93%	14.97%
Soil	0			0	0.00	1.00	0	0	0.00%	
Water in soil	0			0	0.00	1.00	0	0	0.00%	
Scrub Solution (Na)	50,459			50,459	1.00	0.00	50,459	0	10.03%	25.00%
Water in scrub	226,386			226,386	1.00	0.00	226,386	0	45.00%	
Grout		150.924		150,924	1.00	0.00	150,924	0	30.00%	
									0.00%	
Total Mass	352,157	150,924	0	503,081			503,081	0	100.00%	
Average Density	1,200	1,510					1,600	0		
Total Volume	293	100					314	0		
Combined Volatile Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	75,086			75,086	1.00	0.00	75,086	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		
Combined Combustible Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	226			226	1.00	0.00	226	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		

List of assumptions:

Percent water in stabilized scrub blowdown	45%
Percent grout in stabilized scrub blowdown	30%
Percent NaCl in stabilized scrub blowdown	25%
Percent Cl in stabilized scrub blowdown	15%

Repackage Stabilized Blowdown

Incoming Streams	Stabilized BD	Drum		Composite Feed	Conversion Factors	Conversion Factors	Repackage	
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)
Steel noncombustible debris	0			0	1.00	0.00	0	0
Water in steel etc.	0			0	0.00	1.00	0	0
Combustible Debris	226			226	1.00	0.00	226	0
Water in combustibles	0			0	0.00	1.00	0	0
Noncombustible Sludge	0			0	1.00	0.00	0	0
Water in noncombustible sludge	0			0	0.00	1.00	0	0
Oil & VOCs	75,086			75,086	1.00	0.00	75,086	0
Soil	0			0	1.00	0.00	0	0
Water in soil	0			0	0.00	1.00	0	0
Scrub Solution (Na)	50,459			50,459	1.00	0.00	50,459	0
Grout	226,386			226,386	1.00	0.00	226,386	0
Water	150,924			150,924	1.00	0.00	150,924	0
Drums		0		0	1.00	**0.00**	0	0
Total Mass	503,081	0	0	503,081			503,081	0
Average Density	1,600						1,600	0
Total Volume	314						314	0
Combined Volatile Constitutents								
Carbon	0			0	1.00	0.00	0	0
Chloride	75,086			75,086	1.00	0.00	75,086	0
Hydrogen	0			0	1.00	0.00	0	0
Oxygen	0			0	1.00	0.00	0	0
Nitrogen	0			0	1.00	0.00	0	0
Combined Combustible Constitutents								
Carbon	0			0	1.00	0.00	0	0
Chloride	226			226	1.00	0.00	226	0
Hydrogen	0			0	1.00	0.00	0	0
Oxygen	0			0	1.00	0.00	0	0
Nitrogen	0			0	1.00	0.00	0	0

List of assumptions:

Summary of Disposal

	Disposal at WIPP		Return to Pit 9		Offsite treatment/disposal	
	Weight, kg	Volume, m^3	Weight, kg	Volume, m^3	Weight, kg	Volume, m^3
Assay			9,983,924	9,442		
Stabilized Scrub Blowdown			503,081	314		
Compacted Incinerator Bottoms	7,214,286	5,411				
Total	7,214,286	5,411	10,487,005	9,756	0	**0**

1. Total volume to WWPP 5,411
2. Total volume returned to Pit 9 9,756
3. Percent increase in volume returned to Pit 9 52%
4. Secondary waste offsite **0**

PIT 9 ALT 2ap PIT RETURN THERMAL ALL.XLS

Assay

Incoming Streams Component	Feed Mass (kgs)	Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	> 100 nCi/g Mass (kgs)	< 100 nCi/g Mass (kgs)		
Steel non-combustible debris	619,224			619,224	0.50	0.50	309,612	309,612	3.1%	3.1%
Water in steel etc.	154,806			154,806	0.50	0.50	77,403	77,403	0.8%	0.8%
Combustible Debris	252,074			252,074	0.50	0.50	126,037	126,037	1.3%	1.3%
Water in combustibles	63,019			63,019	0.50	0.50	31,510	31,510	0.3%	0.3%
Noncombustible Sludge	152,983			152,983	0.50	0.50	76,492	76,492	0.8%	0.8%
Water in noncombustible sludge	53,751			53,751	0.50	0.50	26,876	26,876	0.3%	0.3%
Oil & VOCs	217,445			217,445	0.50	0.50	108,723	108,723	1.1%	1.1%
Soil	13,656,364			13,656,364	0.50	0.50	6,828,182	6,828,182	68.4%	68.4%
Water in soil	4,798,182			4,798,182	0.50	0.50	2,399,091	2,399,091	24.0%	24.0%
Total Mass	19,967,848	0	0	19,967,848			9,983,924	9,983,924	100.0%	100.0%
Average Density	1,057			1,057			1,057	1,057		
Total Volume	18,883			18,883			9,442	9,442		
Combined Volatile Constitutents										
Carbon	58,904			58,904	0.50	0.50	29,452	29,452		
Chloride	150,171			150,171	0.50	0.50	75,086	75,086		
Hydrogen	7,371			7,371	0.50	0.50	3,686	3,686		
Oxygen	932			932	0.50	0.50	466	466		
Nitrogen	67			67	0.50	0.50	34	34		
Combined Combustible Constitutents										
Carbon	127,027			127,027	0.50	0.50	63,514	63,514		
Chloride	452			452	0.50	0.50	226	226		
Hydrogen	15,925			15,925	0.50	0.50	7,963	7,963		
Oxygen	105,427			105,427	0.50	0.50	52,714	52,714		
Nitrogen	3,243			3,243	0.50	0.50	1,622	1,622		

List of assumptions:

sort

Incoming Streams Component	< 100 nCi/g Mass (kgs)	Mass (kgs)	Stream 3 Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	sort Mass (kgs)	Mass (kgs)	
Steel noncombustible debris	309,612			309,612	1.00	0.00	309,612	0	3.1%
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0	0.8%
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0	1.3%
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	0.3%
Noncombustible Sludge	76,492			76,492	1.00	0.00	76,492	0	0.8%
Water in noncombustible sludge	26,876			26,876	1.00	0.00	26,876	0	0.3%
Oil & VOCs	108,723			108,723	1.00	0.00	108,723	0	1.1%
Soil	6,828,182			6,828,182	1.00	0.00	6,828,182	0	68.4%
Water in Soil	2,399,091			2,399,091	1.00	0.00	2,399,091	0	24.0%
Total Mass	9,983,924			9,983,924			9,983,924	0	100.0%
Average Density	1,057			1,057			1,057		
Total Volume	9,442			9,442			9,442		
Combined Volatile Constitutents									
Carbon	29,452			29,452	1.00	0.00	29,452	0	
Chloride	75,086			75,086	1.00	0.00	75,086	0	
Hydrogen	3,686			3,686	1.00	0.00	3,686	0	
Oxygen	466			466	1.00	0.00	466	0	
Nitrogen	34			34	1.00	0.00	34	0	
Combined Combustible Constitutents									
Carbon	63,514			63,514	1.00	0.00	63,514	0	
Chloride	226			226	1.00	0.00	226	0	
Hydrogen	7,963			7,963	1.00	0.00	7,963	0	
Oxygen	52,714			52,714	1.00	0.00	52,714	0	
Nitrogen	1,622			1,622	1.00	0.00	1,622	0	

List of assumptions:

Shredding

Incoming Streams	sort		Stream 3	Composite Feed	Conversion Factors	Conversion Factors	Shredded Debris	
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)
Steel noncombustible debris	309,612			309,612	1.00	0.00	309,612	0
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0
Noncombustible Sludge	76,492			76,492	1.00	0.00	76,492	0
Water in noncombustible sludge	26,876			26,876	1.00	0.00	26,876	0
Oil & VOCs	108,723			108,723	1.00	0.00	108,723	0
Soil	6,828,182			6,828,182	1.00	0.00	6,828,182	0
Water in soil	2,399,091			2,399,091	1.00	0.00	2,399,091	0
Total Mass	9,983,924	0	0	9,983,924			9,983,924	0
Average Density	1,057			1,057			1,175	0
Total Volume	9,442			9,442			8,499	
Combined Volatile Constitutents								
Carbon	29,452			29,452	1.00	0.00	29,452	0
Chloride	75,086			75,086	1.00	0.00	75,086	0
Hydrogen	3,686			3,686	1.00	0.00	3,686	0
Oxygen	466			466	1.00	0.00	466	0
Nitrogen	34			34	1.00	0.00	34	0
Combined Combustible Constitutents								
Carbon	63,514			63,514	1.00	0.00	63,514	0
Chloride	226			226	1.00	0.00	226	0
Hydrogen	7,963			7,963	1.00	0.00	7,963	0
Oxygen	52,714			52,714	1.00	0.00	52,714	0
Nitrogen	1,622			1,622	1.00	0.00	1,622	0

List of assumptions:

Thermal Treatment

Incoming Streams Component	Shredded Debris Mass (kgs)	Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	TT Bottoms Mass (kgs)	TT Offgas Mass (kgs)		
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0	4.3%	0.0%
Water in steel etc.	77,403			77,403	0.00	1.00	0	77,403	0.0%	2.8%
Combustible Debris	126,037			126,037	0.00	1.00	0	126,037	0.0%	4.6%
Water in combustibles	31,510			31,510	0.00	1.00	0	31,510	0.0%	1.1%
Noncombustible Sludge	76,492			76,492	1.00	0.00	76,492	0	1.1%	0.0%
Water in noncombustible sludge	26,876			26,876	0.00	1.00	0	26,876	0.0%	1.0%
Oil & VOCs	108,723			108,723	0.00	1.00	0	108,723	0.0%	3.9%
Soil	6,828,182			6,828,182	1.00	0.00	6,828,182	0	94.6%	0.0%
Water in soil	2,399,091			2,399,091	0.00	1.00	0	2,399,091	0.0%	86.6%
Total Mass	9,983,924	0	0	9,983,924			7,214,286	2,769,639	100.0%	100.0%
Average Density	1,175			1,175			1,600	1.3		
Total Volume	8,499			8,499			4,509	2,130,491		
Combined Volatile Constitutents										
Carbon	29,452			29,452	0.00	1.00	0	29,452		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	0.00	1.00	0	3,686		
Oxygen	466			466	0.00	1.00	0	466		
Nitrogen	34			34	0.00	1.00	0	34		
Combined Combustible Constitutents										
Carbon	63,514			63,514	0.00	1.00	0	63,514		
Chloride	226			226	0.00	1.00	0	226		
Hydrogen	7,963			7,963	0.00	1.00	0	7,963		
Oxygen	52,714			52,714	0.00	1.00	0	52,714		
Nitrogen	1,622			1,622	0.00	1.00	0	1,622		

List of assumptions:

Repackage for Return to Pit 9

Incoming Streams Component	TT Bottoms Mass (kgs)	Drum Mass (kgs)	Stream3 Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Repackage Pit 9 Mass (kgs)	Product 2 Mass (kgs)
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0
Water in steel etc.	0			0	0.00	1.00	0	0
Combustible Debris	0			0	1.00	0.00	0	0
Water in combustibles	0			0	0.00	1.00	0	0
Noncombustible Sludge	76,492			76,492	1.00	0.00	76,492	0
Water in noncombustible sludge	0			0	0.00	1.00	0	0
Oil & VOCs	0			0	1.00	0.00	0	0
Soil	6,828,182			6,828,182	1.00	0.00	6,828,182	0
Water in soil	0			0	0.00	1.00	0	0
Drums		0		0	1.00	0.00	0	0
Total Mass	7,214,286	0	0	7,214,286			7,214,286	0
Average Density	1,600						1,600	0
Total Volume	4,509						4,509	0
Combined Volatile Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	0			0	0.00	1.00	0	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	0			0	0.00	1.00	0	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0

List of assumptions:

Offgas

Incoming Streams Component	Offgas Mass (kgs)	Scrub Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Vent Mass (kgs)	Blowdown Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0	2.9%	0.0%
Combustible Debris	126,037			126,037	1.00	0.0018	125,811	226	4.7%	0.1%
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	1.2%	0.0%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in noncombustible sludge	26,876			26,876	1.00	0.00	26,876	0	1.0%	0.0%
Oil & VOCs	108,723			108,723	0.31	0.69	33,637	75,086	1.2%	21.3%
Soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in soil	2,399,091			2,399,091	1.00	0.00	2,399,091	0	89.0%	0.0%
Sodium in Scrub Solution		50,459		50,459	0.00	1.00	0	50,459	0.0%	14.3%
Water in scrub		226.386		226,386	0.00	1.00	0	226,386	0.0%	64.3%
				0	0.00	1.00	0	0	0.0%	0.0%
Total Mass	2,769,639	276,845	0	3,046,484			2,694,327	352,157	100.0%	100.0%
Average Density	1.3	1,200					1.3	1,200		
Total Volume	2,130,491	231					2,072,559	293		
Combined Volatile Constitutents										
Carbon	29,452			29,452	1.00	0.00	29,452	0		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	1.00	0.00	3,686	0		
Oxygen	466			466	1.00	0.00	466	0		
Nitrogen	34			34	1.00	0.00	34	0		
Combined Combustible Constitutents										
Carbon	63,514			63,514	1.00	0.00	63,514	0		
Chloride	226			226	0.00	1.00	0	226		
Hydrogen	7,963			7,963	1.00	0.00	7,963	0		
Oxygen	52,714			52,714	1.00	0.00	52,714	0		
Nitrogen	1,622			1,622	1.00	0.00	1,622	0		

List of assumptions:

Fraction of NaCl in scrub blowdown assuming 25% in final stabilized waste	36%

Stabilize Offgas Blowdown

Incoming Streams Component	Blowdown Mass (kgs)	Grout Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Stabilized BD Mass (kgs)	Mass (kgs)	
Steel non-combustible debris	0			0	0	1	0	0	0.00%
Water in steel etc.	0			0	0	1	0	0	0.00%
Combustible Debris	226			226	1	0	226	0	0.03%
Water in combustibles	0			0	0	1	0	0	0.00%
Noncombustible Sludge	0			0	0	1	0	0	0.00%
Water in noncombustible sludge	0			0	0	1	0	0	0.00%
Oil & VOCs	75,086			75,086	1	0	75,086	0	8.53%
Soil	0			0	0	1	0	0	0.00%
Water in soil	0			0	0	1	0	0	0.00%
Scrub Solution (Na)	50,459			50,459	1	0	50,459	0	5.73%
Water in scrub	226,386			226,386	1	0	226,386	0	25.71%
Grout		528,235		528,235	1	0	528,235	0	60.00%
									0.00%
Total Mass	352,157	528,235	0	880,391			880,391	0	100.00%
Average Density	1,200	1,510					1,600	0	
Total Volume	293	350					550	0	
Combined Volatile Constitutents									
Carbon	0			0	0.00	1	0	0	
Chloride	75,086			75,086	1.00	0	75,086	0	
Hydrogen	0			0	0.00	1	0	0	
Oxygen	0			0	0.00	1	0	0	
Nitrogen	0			0	0.00	1	0	0	
Combined Combustible Constitutents									
Carbon	0			0	0.00	1	0	0	
Chloride	226			226	1.00	0	226	0	
Hydrogen	0			0	0.00	1	0	0	
Oxygen	0			0	0.00	1	0	0	
Nitrogen	0			0	0.00	1	0	0	

List of assumptions:

Percent water in stabilized scrub blowdown	45%
Percent grout in stabilized scrub blowdown	30%
Percent NaCl in stabilized scrub blowdown	25%
Percent Cl in stabilized scrub blowdown	15%

Repackage Stabilized Blowdown

incoming Streams	Stabilized BD Mass	Drum Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Repackage Mass (kgs)	Mass (kgs)
Component								
Steel non-combustible debris	0			0	1.00	0.00	0	0
Water in steel etc.	0			0	0.00	1.00	0	0
Combustible Debris	226			226	1.00	0.00	226	0
Water in combustibles	0			0	0.00	1.00	0	0
Noncombustible Sludge	0			0	1.00	0.00	0	0
Water in noncombustible sludge	0			0	0.00	1.00	0	0
Oil & VOCs	75,086			75,086	1.00	0.00	75,086	0
Soil	0			0	1.00	0.00	0	0
Water in soil	0			0	0.00	1.00	0	0
Scrub Solution (Na)	50,459			50,459	1.00	0.00	50,459	0
Grout	226,386			226,386	1.00	0.00	226,386	0
Water	528,235			528,235	1.00	0.00	528,235	0
Drums		0		0	1.00	0.00	0	0
Total Mass	880,391	0	0	880,391			880,391	0
Average Density	1,600						1,600	0
Total Volume	550						550	0
Combined Volatile Constitutents								
Carbon	0			0	1.00	0.00	0	0
Chloride	75,086			75,086	1.00	0.00	75,086	0
Hydrogen	0			0	1.00	0.00	0	0
Oxygen	0			0	1.00	0.00	0	0
Nitrogen	0			0	1.00	0.00	0	0
Combined Combustible Constitutents								
Carbon	0			0	1.00	0.00	0	0
Chloride	226			226	1.00	0.00	226	0
Hydrogen	0			0	1.00	0.00	0	0
Oxygen	0			0	1.00	0.00	0	0
Nitrogen	0			0	1.00	0.00	0	0

List of assumptions:

Summary of Disposal

	Disposal at WIPP		Return to Pit 9		Offsite treatment/disposal	
	Weight, kg	Volume, m^3	Weight, kg	Volume, m^3	Weight, kg	Volume, m^3
Stabilized Scrub Blowdown			880,391	350		
Thermal Treatment Residue			7,214,286	4,503		
Total			8,094,677	5,039	0	0

1. Total volume to WWPP	0
2. Total volume returned to Pit 9	5,059
3. Percent increase in volume returned to Pit 9	27%
4. Secondary waste offsite	0

PIT 9 ALT 2b MELT ALL.XLS

Assay

Incoming Streams	Feed			Composite Feed	Conversion Factors	Conversion Factors	>100 nCi/g	<100 nCi/g
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)
Steel noncombustible debris	619,224			619,224	0.50	0.50	309,612	309,612
Water in steel etc.	154,806			154,806	0.50	0.50	77,403	77,403
Combustible Debris	252,074			252,074	0.50	0.50	126,037	126,037
Water in combustibles	63,019			63,019	0.50	0.50	31,510	31,510
Noncombustible Sludge	152,983			152,983	0.50	0.50	76,492	76,492
Water in noncombustible sludge	53,751			53,751	0.50	0.50	26,876	26,876
Oil & VOCs	217,445			217,445	0.50	0.50	108,723	108,723
Soil	13,656,364			13,656,364	0.50	0.50	6,828,182	6,828,182
Water in soil	4,798,182			4,798,182	0.50	0.50	2,399,091	2,399,091
Total Mass	19,967,848	0	0	19,967,848			9,983,924	9,983,924
Average Density	1,057			1,057			1,057	1,057
Total Volume	18,883			18,883			9,442	9,442
Combined Volatile Constitutents								
Carbon	58,904			58,904	0.50	0.50	29,452	29,452
Chloride	150,171			150,171	0.50	0.50	75,086	75,086
Hydrogen	7,371			7,371	0.50	0.50	3,686	3,686
Oxygen	932			932	0.50	0.50	466	466
Nitrogen	67			67	0.50	**0.50**	34	34
Combined Combustible Constitutents								
Carbon	127,027			127,027	**0.50**	**0.50**	63,514	63,514
Chloride	452			452	**0.50**	**0.50**	226	226
Hydrogen	15,925			15,925	**0.50**	0.50	7,963	7,963
Oxygen	105,427			105,427	0.50	0.50	52,714	52,714
Nitrogen	3,243			3,243	0.50	0.50	1,622	1,622

List of assumptions:

sort

Incoming Streams	>100 nCi/g			Composite Feed	Conversion Factors	Conversion Factors	sort	
Component	Mass (kgs)	(kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)
Steel noncombustible debris	309,612			309,612	1.00	0.00	309,612	0
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0
Noncombustible Sludge	76,492			76,492	1.00	0.00	76,492	0
Water in noncombustible sludge	26,876			26,876	1.00	0.00	26,876	0
Oil & VOCs	108,723			108,723	1.00	0.00	108,723	0
Soil	6,828,182			6,828,182	1.00	0.00	6,828,182	0
Water in soil	2,399,091			2,399,091	1.00	0.00	2,399,091	0
Total Mass	9,983,924	0	0	9,983,924			9,983,924	0
Average Density	1,057			1,057			1,057	
Total Volume	9,442			9,442			9.442	
Combined Volatile Constitutents								
Carbon	29,452			29,452	1.00	0.00	29,452	0
Chloride	75,086			75,086	1.00	0.00	75,086	0
Hydrogen	3,686			3,686	1.00	0.00	3,686	0
Oxygen	466			466	1.00	0.00	466	0
Nitrogen	34			34	1.00	0.00	34	0
Combined Combustible Constitutents								
Carbon	63,514			63,514	1.00	0.00	63,514	0
Chloride	226			226	1.00	0.00	226	0
Hydrogen	7,963			7,963	1.00	0.00	7,963	0
Oxygen	52,714			52,714	1.00	0.00	52,714	0
Nitrogen	1,622			1,622	1.00	0.00	1,622	0

List of assumptions:

Shredding

Incoming Streams	sort			Composite Feed	Conversion Factors	Conversion Factors	Shred	
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0
Noncombustible Sludge	76,492			76,492	1.00	0.00	76,492	0
Water in noncombustible sludge	26,876			26,876	1.00	0.00	26,876	0
Oil & VOCs	108,723			108,723	1.00	0.00	108,723	0
Soil	6,828,182			6,828,182	1.00	0.00	6,828,182	0
Water in soil	2,399,091			2,399,091	1.00	0.00	2,399,091	0
Total Mass	9,983,924	0	0	9,983,924			9,983,924	0
Average Density	1,057			1,057			1,175	0
Total Volume	9.442			9,442			8,499	
Combined Volatile Constitutents								
Carbon	29,452			29,452	1.00	0.00	29,452	0
Chloride	75,086			75,086	1.00	0.00	75,086	0
Hydrogen	3,686			3,686	1.00	0.00	3,686	0
Oxygen	466			466	1.00	0.00	466	0
Nitrogen	34			34	1.00	0.00	34	0
Combined Combustible Constitutents								
Carbon	63,514			63,514	1.00	0.00	63,514	0
Chloride	226			226	1.00	0.00	226	0
Hydrogen	7,963			7,963	1.00	0.00	7,963	0
Oxygen	52,714			52,714	1.00	0.00	52,714	0
Nitrogen	1,622			1,622	1.00	0.00	1,622	0

List of assumptions:

Melter

Incoming Streams Component	Shred Mass (kgs)	Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Melt Mass (kgs)	Offgas Mass (kgs)
Steel noncombustible debris	309,612			309,612	1.00	0.00	309,612	0
Water in steel etc.	77,403			77,403	0.00	1.00	0	77,403
Combustible Debris	126,037			126,037	0.00	1.00	0	126,037
Water in combustibles	31,510			31,510	0.00	1.00	0	31,510
Noncombustible Sludge	76,492			76,492	1.00	0.00	76,492	0
Water in noncombustible sludge	26,876			26,876	0.00	1.00	0	26,876
Oil & VOCs	108,723			108,723	0.00	1.00	0	108,723
Soil	6,828,182			6,828,182	1.00	0.00	6,828,182	0
Water in soil	2,399,091			2,399,091	0.00	1.00	0	2,399,091
Total Mass	9,983,924	0	0	9,983,924			7,214,286	2,769,639
Average Density	1,175			1,175			2,128	1.3
Total Volume	8,499			8,499			3,390	2,130,491
Combined Volatile Constitutents								
Carbon	29,452			29,452	0.00	1.00	0	29,452
Chloride	75,086			75,086	0.00	1.00	0	75,086
Hydrogen	3,686			3,686	0.00	1.00	0	3,686
Oxygen	466			466	0.00	1.00	0	466
Nitrogen	34			34	0.00	1.00	0	34
Combined Combustible Constitutents								
Carbon	63,514			63,514	0.00	1.00	0	63,514
Chloride	226			226	0.00	1.00	0	226
Hydrogen	7,963			7,963	0.00	1.00	0	7,963
Oxygen	52,714			52,714	0.00	1.00	0	52,714
Nitrogen	1,622			1,622	0.00	1.00	0	1,622

List of assumptions:
Final density of slag/glass includes drum/container, so repackaging is included.

Offgas

incoming Streams Component	Offgas Mass (kgs)	Scrub Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Vent Mass (kgs)	Blowdown Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0	2.9%	0.0%
Combustible Debris	126,037			126,037	0.998	0.002	125,811	226	4.7%	0.1%
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	1.2%	0.0%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in noncombustible sludge	26,876			26,876	1.00	0.00	26,876	0	1.0%	0.0%
Oil & VOCs	108,723			108,723	0.31	0.69	33,637	75,086	1.2%	38.4%
Soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in soil	2,399,091			2,399,091	1.00	0.00	2,399,091	0	89.0%	0.0%
Sodium in scrub solution		50,459		50,459	0.00	1.00	0	50,459	0.0%	25.8%
Water in scrub		69,872		69,872	0.00	1.00	0	69,872	0.0%	35.7%
				0	0.00	1.00	0	0		
Total Mass	2,769,639	120,331	0	2,889,970			2,694,327	195,643	100.0%	100.0%
Average Density	1.3	1,200					1.3	1,200		
Total Volume	2,130,491	100					2,072,559	163		
Combined Volatile Constitutents										
Carbon	29,452			29,452	1.00	0.00	29,452	0		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	1.00	0.00	3,686	0		
Oxygen	466			466	1.00	0.00	466	0		
Nitrogen	34			34	1.00	0.00	34	0		
Combined Combustible Constitutents										
Carbon	63,514			63,514	1.00	0.00	63,514	0		
Chloride	226			226	0.00	1.00	0	226		
Hydrogen	7,963			7,963	1.00	0.00	7,963	0		
Oxygen	52,714			52,714	1.00	0.00	52,714	0		
Nitrogen	1,622			1,622	1.00	0.00	1,622	0		

List of assumptions:

Fraction of NaCl in scrub blowdown assuming 25% in final stabilized waste	36%

Stabilize Offgas Scrub Solution

Incoming Streams	Blowdown Mass (kgs)	Grout Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Stabilized BD Mass (kgs)	Mass (kgs)	
Component									
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.00%
Water in steel etc.	0			0	0.00	1.00	0	0	0.00%
Combustible Debris	226			226	1.00	0.00	226	0	0.08%
Water in combustibles	0			0	0.00	1.00	0	0	0.00%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.00%
Water in noncombustiblesludge	0			0	0.00	1.00	0	0	0.00%
Oil & VOCs	75,086			75,086	1.00	0.00	75,086	0	26.87%
Soil	0			0	0.00	1.00	0	0	0.00%
Water in soil	0			0	0.00	1.00	0	0	0.00%
Sodium in Scrub Solution	50,459			50,459	1.00	0.00	50,459	0	18.05%
Water in scrub	69,872			69,872	1.00	0.00	69,872	0	25.00%
Grout		83,847		83,847	1.00	0.00	83,847	0	30.00%
				0	0.00	1.00	0	0	0.00%
Total Mass	195,643	83,847	0	279,489			279,489	0	100.00%
Average Density	1,200	1,510					1,600	0	
Total Volume	163	56					175	0	
Combined Volatile Constitutents									
Carbon	0			0	0.00	1.00	0	0	
Chloride	75,086			75,086	1.00	0.00	75,086	0	
Hydrogen	0			0	0.00	1.00	0	0	
Oxygen	0			0	0.00	1.00	0	0	
Nitrogen	0			0	0.00	1.00	0	0	
Combined Combustible Constitutents									
Carbon	0			0	0.00	1.00	0	0	
Chloride	226			226	1.00	0.00	226	0	
Hydrogen	0			0	0.00	1.00	0	0	
Oxygen	0			0	0.00	1.00	0	0	
Nitrogen	0			0	0.00	1.00	0	0	

List of assumptions:

Percent water in stabilized scrub blowdown	45%
Percent grout in stabilized scrub blowdown	30%
Percent NaCl in stabilized scrub blowdown	25%
Percent Cl in stabilized scrub blowdown	15%

Repackage Stabilized Offgas Scrub Solution

Incoming Streams	Stabilized BD	Drum		Composite Feed	Conversion Factors	Conversion Factors	Repackage	
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass	Mass (kgs)
Steel non-combustible debris	0			0	0.00	1.00	0	0
Water in steel etc.	0			0	0.00	1.00	0	0
Combustible Debris	226			226	1.00	0.00	226	0
Water in combustibles	0			0	0.00	1.00	0	0
Noncombustible Sludge	0			0	0.00	1.00	0	0
Water in noncombustible sludge	0			0	0.00	1.00	0	0
Oil & VOCs	75,086			75,086	1.00	0.00	75,086	0
Soil	0			0	0.00	1.00	0	0
Water in soil	0			0	0.00	1.00	0	0
Sodium in Scrub Solution	50,459			50,459	1.00	0.00	50,459	0
Water in scrub	69,872			69,872	1.00	0.00	69,872	0
Grout	83,847			83,847	1.00	0.00	83,847	0
Drums	0	0		0	1.00	0.00	0	0
Total Mass	279,489	0	0	279,489			279,489	0
Average Density	1,600						1,600	0
Total Volume	175						175	0
Combined Volatile Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	75,086			75,086	1.00	0.00	75,086	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	226			226	1.00	0.00	226	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0

List of assumptions:

Summary of Disposal

	Disposal at WIPP		Return to Pit 9	
	Weight, kg	Volume, m^3	Weight, kg	Volume, m^3
Assay			9,983,924	9,442
Stabilized Offgas Scrub Solution			279,489	175
Glass Product	7,214,286	3,390		
Total	7,214,286	3,390	10,263,413	9,616

1. Total volume to WPP	3,390
2. Total volume to Pit 9	9,616
3. Increase in volume returned to Pit 9	51%
4. Volume of secondary waste	0

PIT 9 ALT 3a LEACH ALL.XLS

Activated Carbon Regeneration

Incoming Streams Component	Spent GAC Mass (kgs)	Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Offsite Treatment Mass (kgs)	Clean GAC Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%	0.0%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in noncombustible sludge	108			108	1.00	0.00	108	0	0.4%	0.0%
Oil & VOCs	9,785			9,785	1.00	0.00	9,785	0	33.3%	0.0%
Soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in soil	9,677			9,677	1.00	0.00	9,677	0	33.0%	0.0%
Total water on GAC	9,785			9,785	1.00	0.00	9,785	0	33.3%	0.0%
GAC	48,925			48.925	0.00	1.00	0	48,925	0.0%	100.0%
Total Mass	78,280	0	0	78,280			29,355	48,925	100.0%	100.0%
Average Density	500						1,200	500		
Total Volume	157						24	98		
Combined Volatile Constitutents										
Carbon	2,651			2,651	1.00	0.00	2,651	0		
Chloride	6,758			6,758	1.00	0.00	6,758	0		
Hydrogen	332			332	1.00	0.00	332	0		
Oxygen	42			42	1.00	0.00	42	0		
Nitrogen	3			3	1.00	0.00	3	0		
Combined Combustible Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		

List of assumptions:

1. All volatile material goes offsite

Leach/Recovery

Incoming Streams Component	TD Bottoms Mass (kgs)	Leachant Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Clean Soil Mass (kgs)	Leachate Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%	0.0%
Noncombustible Sludge	76,492			76,492	0.90	0.10	68,842	7,649	0.4%	0.2%
Water in noncombustible sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Oil & VOCs	0			0	0.00	1.00	0	0	0.0%	0.0%
Soil	6,828,182			6,828,182	0.90	0.10	6,145,364	682,818	39.6%	19.6%
Water in soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Leach chemicals		7,767,758		7,767,758	0.80	0.20	6,214,206	1,553,552	40.0%	45.0%
Water in leachant		4,315,421		4,315,421	0.72	0.28	3,107,103	1,208,318	20.0%	35.0%
Total Mass	6,904,674	12,063,179	0	18,987,852			15,535,515	3,452,337	100.0%	100.0%
Average Density	913	1,150					1,867	903		
Total Volume	7,564	10,507					8,320	3,825		
Combined Volatile Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		
Combined Combustible Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		

List of assumptions/multipliers:

1. Fraction of soil and sludge carried from leach/recovery with the leachate	0.10
2. Fraction of inlet soil and sludge returned to Pit 9	0.90
3. Fraction of leach chemical in leachate from leachlrecovery	0.45
4. Fraction of water in leachate leachlrecovery	0.35
5. Fraction of soil/sludge in leachate leachlrecovery	0.20
6. Fraction of leach chemical in soillsludge returned to Pit 9	0.40
7. Fraction of water in soillsludge returned to Pit 9	0.20
6. Fraction of solids In soil/sludge returned to Pit 9	0.40
9. Percent volume increase of clean soil and sludge back to Pit 9	0.10
10. Volume increase of leachate plus soil and sludge leach/recovery	0.30

Stabilize Clean Soil to Pit 9

Incoming Streams	Clean Soil	Grout		Composite Feed	Conversion Factors	Conversion Factors	Stabilized Soil		
	Mass	Mass	Mass	Mass	Mass	Mass	Mass	Mass	
Component	(kgs)	(kgs)	(kgs)	(kgs)	(kgs)	(kgs)	(kgs)	(kgs)	
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%
Noncombustible Sludge	68,842			68,842	1.00	0.00	68,842	0	0.4%
Water in noncombustible sludge	0			0	0.00	1.00	0	0	0.0%
Oil & VOCs	0			0	0.00	1.00	0	0	0.0%
Soil	6,145,364			6,145,364	1.00	0.00	6,145,364	0	33.0%
Water in soil	0			0	0.00	1.00	0	0	0.0%
Leach chemical	6,214,206			6,214,206	1.00	0.00	6,214,206	0	33.3%
Water in leachant	3,107,103			3,107,103	1.00	0.00	3,107,103	0	16.7%
Grout	0	3,107,103		3,107,103	1.00	0.00	3,107,103	0	16.7%
	0								0.0%
Total Mass	15,535,515	3,107,103	0	18,642,618			18,642,618	0	100.0%
Average Density	1,867	1,510					1,600	0	
Total Volume	8,320	2,058					11,652	0	
Combined Volatile Constitutents									
Carbon	0			0	0.00	1.00	0	0	
Chloride	0			0	1.00	0.00	0	0	
Hydrogen	0			0	0.00	1.00	0	0	
Oxygen	0			0	0.00	1.00	0	0	
Nitrogen	0			0	0.00	1.00	0	0	
Combined Combustible Constitutents									
Carbon	0			0	0.00	1.00	0	0	
Chloride	0			0	1.00	0.00	0	0	
Hydrogen	0			0	0.00	1.00	0	0	
Oxygen	0			0	0.00	1.00	0	0	
Nitrogen	0			0	0.00	1.00	0	0	

List of assumptions:

Stabilize

Incoming Streams	Leachate	Grout		Composite Feed	Conversion Factors	Conversion Factors	Stabilized Leachate		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%
Noncombustible Sludge	7,649			7,649	1.00	0.00	7,649	0	0.2%
Water in noncombustible sludge	0			0	0.00	1.00	0	0	0.0%
Oil & VOCs	0			0	0.00	1.00	0	0	0.0%
Soil	682,818			682,818	1.00	0.00	682,818	0	16.5%
Water in soil	0			0	0.00	1.00	0	0	0.0%
Leach chemical	1,553,552			1,553,552	1.00	0.00	1,553,552	0	37.5%
Water in leachant	1,208,318			1,208,318	1.00	0.00	1,208,318	0	29.2%
Grout		690,467		690,467	1.00	0.00	690,467	0	16.7%
									0.0%
Total Mass	3,452,337	690,467	0	4,142,804			4,142,804	0	100.0%
Average Density	903	1,510					1,600	0	
Total Volume	3,825	457					2,589	0	
Combined Volatile Constitutents									
Carbon	0			0	0.00	1.00	0	0	
Chloride	0			0	1.00	0.00	0	0	
Hydrogen	0			0	0.00	1.00	0	0	
Oxygen	0			0	0.00	1.00	0	0	
Nitrogen	0			0	0.00	1.00	0	0	
Combined Combustible Constitutents									
Carbon	0			0	0.00	1.00	0	0	
Chloride	0			0	1.00	0.00	0	0	
Hydrogen	0			0	0.00	1.00	0	0	
Oxygen	0			0	0.00	1.00	0	0	
Nitrogen	0			0	0.00	1.00	0	0	

List of assumptions:

Repackage

Incoming Streams Component	Shredded Debris Mass (kgs)	Drum Mass (kgs)	Leachate Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Shredded Debris Repackage Mass (kgs)	Leachate Repackage Mass (kgs)
Steel noncombustible debris	309,612		0	309,612	1.00		309,612	0
Water in steel etc.	77,403		0	77,403	1.00		77,403	0
Combustible Debris	126,037		0	126,037	1.00		126,037	0
Water in combustibles	31,510		0	31,510	1.00		31,510	0
Noncombustible Sludge	0		7,649	7,649		1.00	0	7,649
Water in noncombustible sludge	0		0	0		1.00	0	0
Oil & VOCs	0		0	0		1.00	0	0
Soil	0		682,818	682,818		1.00	0	682,818
Water in soil	0		0	0		1.00	0	0
Leach chemical			1,553,552	1,553,552		1.00	0	1,553,552
Water in leachant			1,208,318	1,208,318		1.00	0	1,208,318
Grout			690,467	690,467		1.00	0	690,467
Drums		937,473		937,473	0.12	0.88	108,912	828,561
Total Mass	544,562	937,473	4,142,804	5,624,839			653,474	4,971,365
Average Density	913		1,600				913	1,600
Total Volume	597		2,589				716	3,107
Combined Volatile Constitutents								
Carbon			0	0	0.00	1.00	0	0
Chloride			0	0	0.00	1.00	0	0
Hydrogen			0	0	0.00	1.00	0	0
Oxygen			0	0	0.00	1.00	0	0
Nitrogen			0	0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	63,514			63,514	1.00	0.00	63,514	0
Chloride	226			226	1.00	0.00	226	0
Hydrogen	7,963			7,963	1.00	0.00	7,963	0
Oxygen	52,714			52,714	1.00	0.00	52,714	0
Nitrogen	1,622			1,622	1.00	0.00	1,622	0

List of assumptions:

Compact

Incoming Streams Component	Shredded Debris Repackage Mass (kgs)	Leachate Repackage Mass (kgs)	Drums Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	WIPP Mass (kgs)	Mass (kgs)
Steel noncombustible debris	309,612	0		309,612	1.00	0.00	309,612	0
Water in steel etc.	77,403	0		77,403	1.00	0.00	77,403	0
Combustible Debris	126,037	0		126,037	1.00	0.00	126,037	0
Water in combustibles	31,510	0		31,510	1.00	0.00	31,510	0
Noncombustible Sludge	0	7,649		7,649	1.00	0.00	7,649	0
Water in noncombustible sludge	0	0		0	1.00	0.00	0	0
Oil & VOCs	0	0		0	1.00	0.00	0	0
Soil	0	682,818		682,818	1.00	0.00	682,818	0
Water in soil	0	0		0	1.00	0.00	0	0
Leach chemical	0	1,553,552		1,553,552	1.00	0.00	1,553,552	0
Water in leachant	0	1,208,318		1,208,318	1.00	0.00	1,208,318	0
Grout	0	690,467		690,467	1.00	0.00	690,467	0
Drums	108,912	828,561	65,347	1,002,821	1.00	0.00	1,002,821	0
Total Mass	653,474	4,971,365	65,347	5,690,186			5,690,186	0
Average Density	913	1,600					1,642	0
Total Volume	716	3,107					3,465	0
Combined Volatile Constitutents								
Carbon		0		0	0.00	1.00	0	0
Chloride		0		0	0.00	1.00	0	0
Hydrogen		0		0	0.00	1.00	0	0
Oxygen		0		0	0.00	1.00	0	0
Nitrogen		0		0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	63,514	0		63,514	1.00	0.00	63,514	0
Chloride	226	0		226	1.00	0.00	226	0
Hydrogen	7,963	0		7,963	1.00	0.00	7,963	0
Oxygen	52,714	0		52,714	1.00	0.00	52,714	0
Nitrogen	1,622	0		1,622	1.00	0.00	1,622	0

List of assumptions:

Summary of Disposal

	Disposal at WIPP		Return to Pit 9		Offsite treatment/disposal	
	Weight, kg	Volume, m3	Weight, kg	Volume, m3	Weight, kg	Volume, m3
Assay			9,983,924	9,442		
Stabilized Leachate	5,029,120	3,107				
Leached Soil/sludge			18,642,618	11,652		
GAC					29,355	24
Organics					146,775	179
Compacted Debris	663,100	358				
Total	5,692,220	3,465	28,626,542	21,093	176,130	204

1. Total volume to WPP 3,465
2. Total volume to Pit 9 21,093
3. Increase in volume returned to Pit 9 112%
4. Volume of secondary waste 204

PIT 9 ALT 3ap PIT RETURN OFFSITE.XLS

Assay

Incoming Streams Component	Feed Mass (kgs)	Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	>100 nCi/g Mass (kgs)	< 100 nCi/g Mass (kgs)		
Steel non-combustible debris	619,224			619,224	0.50	0.50	309,612	309,612	3.1%	3.1%
Water in steel etc.	154,806			154,806	0.50	0.50	77,403	77,403	0.8%	0.8%
Combustible Debris	252,074			252,074	0.50	0.50	126,037	126,037	1.3%	1.3%
Water in combustibles	63,019			63,019	0.50	0.50	31,510	31,510	0.3%	0.3%
Noncombustible Sludge	152,983			152,983	0.50	0.50	76,492	76,492	0.8%	0.8%
Water in noncombustible sludge	53,751			53,751	0.50	0.50	26,876	26,876	0.3%	0.3%
Oil & VOCs	217,445			217,445	0.50	0.50	108,723	108,723	1.1%	1.1%
Soil	13,656,364			13,656,364	0.50	0.50	6,828,182	6,828,182	68.4%	68.4%
Water in soil	4,798,182			4,798,182	0.50	0.50	2,399,091	2,399,091	24.0%	24.0%
Total Mass	19,967,848	0	0	19,967,848			9,983,924	9,983,924	100.0%	100.0%
Average Density	1,057			1,057			1,057	1,057		
Total Volume	18,883			18,883			9,442	9,442		
Combined Volatile Constitutents										
Carbon	58,904			58,904	0.50	0.50	29,452	29,452		
Chloride	150,171			150,171	0.50	0.50	75,086	75,086		
Hydrogen	7,371			7,371	0.50	0.50	3,686	3,686		
Oxygen	932			932	0.50	0.50	466	466		
Nitrogen	67			67	0.50	0.50	34	34		
Combined Combustible Constitutents										
Carbon	127,027			127,027	0.50	0.50	63,514	63,514		
Chloride	452			452	0.50	0.50	226	226		
Hydrogen	15,925			15,925	0.50	0.50	7,963	7,963		
Oxygen	105,427			105,427	0.50	0.50	52,714	52,714		
Nitrogen	3,243			3,243	0.50	0.50	1,622	1,622		

List of assumptions:

Segregate

Incoming Streams	<100 nCi/g			Composite Feed	Conversion Factors	Conversion Factors	>60mm	< 60mm		
	Mass	Mass	Mass	Mass	Mass	Mass	Mass	Mass		
Component	(kgs)	(kgs)	(kgs)	(kgs)	(kgs)	(kgs)	(kgs)			
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0	56.9%	0.0%
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0	14.2%	0.0%
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0	23.1%	0.0%
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	5.8%	0.0%
Noncombustible Sludge	76,492			76,492	0.00	1.00	0	76,492	0.0%	0.8%
Water in noncombustible sludge	26,876			26,876	0.00	1.00	0	26,876	0.0%	0.3%
Oil & VOCs	108,723			108,723	0.00	1.00	0	108,723	0.0%	1.2%
Soil	6,828,182			6,828,182	0.00	1.00	0	6,828,182	0.0%	72.3%
Water in soil	2,399,091			2,399,091	0.00	1.00	0	2,399,091	0.0%	25.4%
Total Mass	9,983,924	0	0	9,983,924			544,562	9,439,363	100.0%	100.0%
Average Density	1,057			1,057			291	1,248		
Total Volume	9,442			9,442			1,871	7,564		
Combined Volatile Constitutents										
Carbon	29,452			29,452	0.00	1.00	0	29,452		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	0.00	1.00	0	3,686		
Oxygen	466			466	0.00	1.00	0	466		
Nitrogen	34			34	0.00	1.00	0	34		
Combined Combustible Constitutents										
Carbon	63,514			63,514	1.00	0.00	63,514	0		
Chloride	226			226	1.00	0.00	226	0		
Hydrogen	7,963			7,963	1.00	0.00	7,963	0		
Oxygen	52,714			52,714	1.00	0.00	52,714	0		
Nitrogen	1,622			1,622	1.00	0.00	1,622	0		

List of assumptions:

sort

Incoming Streams	>60 mm			Composite Feed	Conversion Factors	Conversion Factors	sort		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass	Mass (kgs)	Mass (kgs)	
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0	56.9%
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0	14.2%
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0	23.1%
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	5.0%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.0%
Water in noncombustible sludge	0			0	0.00	1.00	0	0	0.0%
Oil & VOCs	0			0	0.00	1.00	0	0	0.0%
Soil	0			0	0.00	1.00	0	0	0.0%
Water in Soil	0			0	0.00	1.00	0	0	0.0%
Total Mass	544,562	0	0	544,562			544,562	0	100.0%
Average Density	291			291			291		
Total Volume	1,871			1,871			1,871		
Combined Volatile Constitutents									
Carbon	0			0	1.00	0.00	0	0	
Chloride	0			0	1.00	0.00	0	0	
Hydrogen	0			0	1.00	0.00	0	0	
Oxygen	0			0	1.00	0.00	0	0	
Nitrogen	0			0	1.00	0.00	0	0	
Combined Combustible Constitutents									
Carbon	63,514			63,514	1.00	0.00	63,514	0	
Chloride	226			226	1.00	0.00	226	0	
Hydrogen	7,963			7,963	1.00	0.00	7,963	0	
Oxygen	52,714			52,714	1.00	0.00	52,714	0	
Nitrogen	1,622			1,622	1.00	0.00	1,622	0	

List of assumptions:

Shredding

Incoming Streams	sort		Stream 3	Composite Feed	Conversion Factors	Conversion Factors	Shred	
Component	Mass	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0
Noncombustible Sludge	0			0	0.00	1.00	0	0
Water in noncombustible sludge	0			0	0.00	1.00	0	0
Oil & VOCs	0			0	0.00	1.00	0	0
Soil	0			0	0.00	1.00	0	0
Water in soil	0			0	0.00	1.00	0	0
Total Mass	544,562	0	0	544,562			544,562	0
Average Density	291			291			582	0
Total Volume	1,871			1,871			935	
Combined Volatile Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	0			0	0.00	1.00	0	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	63,514			63,514	1.00	0.00	63,514	0
Chloride	226			226	1.00	0.00	226	0
Hydrogen	7,963			7,963	1.00	0.00	7,963	0
Oxygen	52,714			52,714	1.00	0.00	52,714	0
Nitrogen	1,622			1,622	1.00	0.00	1,622	0

List of assumptions:

Thermal Desorption

incoming Streams	<60 mm			Composite Feed	Conversion Factors	Conversion Factors	TD Bottoms	TD Offgas		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%	0.0%
Noncombustible Sludge	76,492			76,492	1.00	0.00	76,492	0	1.1%	0.0%
Water in noncombustible sludge	26,876			26,876	0.00	1.00	0	26,876	0.0%	1.1%
Oil & VOCs	108,723			108,723	0.00	1.00	0	108,723	0.0%	4.3%
Soil	6,828,182			6,828,182	1.00	0.00	6,828,182	0	98.9%	0.0%
Water in soil	2,399,091			2,399,091	0.00	1.00	0	2,399,091	0.0%	94.7%
Total Mass	9,439,363	0	0	9,439,363			6,904,674	2,534,689	100.0%	100.0%
Average Density	1,248			1,248			913	1.3		
Total Volume	7,564			7,564			7,564	1,949,761		
Combined Volatile Constitutents										
Carbon	29,452			29,452	0.00	1.00	0	29,452		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	0.00	1.00	0	3,686		
Oxygen	466			466	0.00	1.00	0	466		
Nitrogen	34			34	0.00	1.00	0	34		
Combined Combustible Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		

List of assumptions:

Condenser

Incoming Streams Component	TD **Offgas** Mass (kgs)	Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass	Conversion Factors Mass (kgs)	Neet Organic Mass	Condensate Water Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%	0.0%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in noncombustible sludge	26,876			26,876	0.00	1.00	0	26,876	0.0%	1.1%
Oil & VOCs	108,723			108,723	0.90	0.10	97,850	10,872	100.0%	0.4%
Soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in soil	2,399,091			2,399,091	0.00	1.00	0	2,399,091	0.0%	98.5%
Total Mass	2,534,689	0	0	2,534,689			97,850	2,436,839	100.0%	100.0%
Average Density	1.3						1,200	1,200		
Total Volume	1,949,761						82	2,031		
Combined Volatile Constitutents										
Carbon	29,452			29,452	0.90	0.10	26,507	2,945		
Chloride	75,086			75,086	0.90	0.10	67,577	7,509		
Hydrogen	3,686			3,686	0.90	0.10	3,317	369		
Oxygen	466			466	0.90	0.10	419	47		
Nitrogen	34			34	0.90	0.10	30	3		
Combined Combustible Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		

List of assumptions:

Fraction of incoming water and organics that passes to the condensor	100%
Fraction of the incorning organics that partition to the water condensate	10%
Fraction of the incoming organics going to offsite vendor	90%

Activated Carbon

Incoming Streams Component	Condensate Water Mass (kgs)	GAC Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Pond Mass (kgs)	Spent GAC Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%	0.0%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in noncombustible sludge	26,876			26,876	0.996	0.00	26,767	108	1.1%	0.2%
Oil & VOCs	10,872			10,872	0.10	0.90	1,087	9,785	0.0%	14.3%
Soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in soil	2,399,091			2,399,091	0.996	0.00	2,389,414	9,677	98.8%	14.1%
Total water on GAC								9,785		
GAC		48,925		48,925	0.00	1.00	0	48,925	0.0%	71.4%
Total Mass	2,436,839	48,925	0	2,485,764			2,417,269	68,495	100.0%	100.0%
Average Density	1,200						1,200	500		
Total Volume	2,031						2,014	137		
Combined Volatile Constitutents										
Carbon	2,945			2,945	0.10	0.90	295	2,651		
Chloride	7,509			7,509	0.10	0.90	751	6,758		
Hydrogen	369			369	0.10	0.90	37	332		
Oxygen	47			47	0.10	0.90	5	42		
Nitrogen	3			3	0.10	0.90	0	3		
Combined Combustible Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		

List of assumptions:	
Fraction of water in condensate sent to the pond	0.996
Fraction of organics in condensate	10%
Fraction of organics in condensate adsorbed by the GAC	90%
Adsorption capacity of organic on GAC, kg orglkg C	0.20
Adsorption capacity of water on GAC kg H2O/kg C	0.20

Activated Carbon Regeneration

Incoming Streams	Spent GAC			Composite Feed	Conversion Factors	Conversion Factors	Offsite Treatment	Clean GAC		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%	0.0%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in noncombustible sludge	108			108	1.00	0.00	108	0	0.4%	0.0%
Oil & VOCs	9,785			9,785	1.00	0.00	9,785	0	33.3%	0.0%
Soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in soil	9,677			9,677	1.00	0.00	9,677	0	33.0%	0.0%
Total water on GAC	9,785			9,785	1.00	0.00	9,785	0		
GAC	48,925			48,925	0.00	1.00	0	48,925	0.0%	100.0%
Total Mass	78,280	0	0	78,280			29,355	48,925	100.0%	100.0%
Average Density	500						1,200	500		
Total Volume	157						24	98		
Combined Volatile Constitutents										
Carbon	2,651			2,651	1.00	0.00	2,651	0		
Chloride	6,758			6,758	1.00	0.00	6,758	0		
Hydrogen	332			332	1.00	0.00	332	0		
Oxygen	42			42	1.00	0.00	42	0		
Nitrogen	3			3	1.00	0.00	3	0		
Combined Combustible Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		

List of assumptions:

1. All volatile material goes offsite

Repackage
Input Values
Paste in from prior sheets
Calculated Values

Incoming Streams	Shredded Debris Mass (kgs)	Drum Stream2 Mass (kgs)	TD Bottoms Mass (kgs)	Composite Feed Mass (kgs)	Product 1 Conversion Factors Mass (kgs)	Product 2 Conversion Factors Mass (kgs)	Debris Repackage Mass (kgs)	TD Bottoms Repackage Mass (kgs)
Component								
Steel noncombustible debris	309,612		0	309,612	1.00	0.00	309,612	0
Water in steel etc.	77,403		0	77,403	1.00	0.00	77,403	0
Combustible Debris	126,037		0	126,037	1.00	0.00	126,037	0
Water in combustibles	31,510		0	31,510	1.00	0.00	31,510	0
Noncombustible Sludge	0		76,492	76,492	0.00	1.00	0	76,492
Water in noncombustible sludge	0		0	0	0.00	1.00	0	0
Oil & VOCs	0		0	0	0.00	1.00	0	0
Soil	0		6,828,182	6,828,182	0.00	1.00	0	6,828,182
Water in soil	0		0	0	0.00	1.00	0	0
Leach chemical			0	0	0.00	1.00	0	0
Water in leachant			0	0	0.00	1.00	0	0
Grout			0	0	0.00	1.00	0	0
Drums		0		0	0.07	0.93	0	0
Total Mass	544,562	0	6,904,674	7,449,235			544,562	6,904,674
Average Density	582		913				582	913
Total Volume	935		7,564				935	7,564
Combined Volatile Constitutents								
Carbon	0		0	0	0.00	1.00	0	0
Chloride	0		0	0	0.00	1.00	0	0
Hydrogen	0		0	0	0.00	1.00	0	0
Oxygen	0		0	0	0.00	1.00	0	0
Nitrogen	0		0	0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	63,514		0	63,514	0.00	1.00	0	63,514
Chloride	226		0	226	0.00	1.00	0	226
Hydrogen	7,963		0	7,963	0.00	1.00	0	7,963
Oxygen	52,714		0	52,714	0.00	1.00	0	52,714
Nitrogen	1,622		0	1.622	0.00	1.00	0	1,622

List of assumptions:

1. Percent increase in volume in Repackage	20%
2. Percent increase in weight in Repackage	20%

Summary of Disposal

	Disposal at WIPP		Return to Pit 9		Offsite treatment/disposal	
	Weight, kg	Volume, m3	Weight, kg	Volume, m3	Weight, kg	Volume, m3
Clean Soil			6,904,674	7,564		
GAC					29,355	24
Organics					146,775	179
Shredded Debris			544,562	935		
Total	0	0	7,449,235	8,499	176,130	204

1. Total volume to WPP	0
2. Total volume to Pit 9	8,499
3. Increase in volume returned to Pit 9	45%
4. Volume of secondary waste	204

PIT 9 ALT 3b LEACH OFFSITE.XLS

Assay

Incoming Streams	Feed			Composite Feed	Conversion Factors	Conversion Factors	>100 nCi/g	<100 nCi/g		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)		
Steel non-combustible debris	619,224			619,224	0.50	0.50	309,612	309,612	3.1%	3.1%
Water in steel etc.	154,806			154,806	0.50	0.50	77,403	77,403	0.0%	0.8%
Combustible Debris	252,074			252,074	0.50	0.50	126,037	126,037	1.3%	1.3%
Water in combustibles	63,019			63,019	0.50	0.50	31,510	31,510	0.3%	0.3%
Noncombustible Sludge	152,983			152,983	0.50	0.50	76,492	76,492	0.8%	0.8%
Water in noncombustible sludge	53,751			53,751	0.50	0.50	26,876	26,876	0.3%	0.3%
Oil & VOCs	217,445			217,445	0.50	0.50	108,723	108,723	1.1%	1.1%
Soil	13,656,364			13,656,364	0.50	0.50	6,828,182	6,828,182	68.4%	68.4%
Water in soil	4,798,182			4,798,182	0.50	0.50	2,399,091	2,399,091	24.0%	24.0%
Total Mass	19,967,848	0	0	19,967,848			9,983,924	9,983,924	100.0%	100.0%
Average Density	1,057			1,057			1,057	1,057		
Total Volume	18,883			18,883			9,442	9,442		
Combined Volatile Constitutents										
Carbon	58,904			58,904	**0.50**	0.50	29,452	29,452		
Chloride	150,171			150,171	**0.50**	0.50	75,086	75,086		
Hydrogen	7,371			7,371	**0.50**	0.50	3,686	3,686		
Oxygen	932			932	**0.50**	0.50	466	466		
Nitrogen	67			67	**0.50**	0.50	34	34		
Combined Combustible Constitutents										
Carbon	127,027			127,027	**0.50**	0.50	63,514	63,514		
Chloride	452			452	**0.50**	0.50	226	226		
Hydrogen	15,925			15,925	**0.50**	0.50	7,963	7,963		
Oxygen	105,427			105,427	**0.50**	0.50	52,714	52,714		
Nitrogen	3,243			3,243	**0.50**	0.50	1,622	1,622		

List of assumptions:

Segregate

Incoming Streams	>100 nCi/g			Composite Feed	Conversion Factors	Conversion Factors	>60mm	< 60mm		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)		
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0	56.9%	0.0%
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0	14.2%	0.0%
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0	23.1%	0.0%
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	5.8%	0.0%
Noncombustible Sludge	76,492			76,492	0.00	1.00	0	76,492	0.0%	0.8%
Water in noncombustible sludge	26,876			26,876	0.00	1.00	0	26,876	0.0%	0.3%
Oil & VOCs	108,723			108,723	0.00	1.00	0	108,723	0.0%	1.2%
Soil	6,828,182			6,828,182	0.00	1.00	0	6,828,182	0.0%	72.3%
Water in soil	2,399,091			2,399,091	0.00	1.00	0	2,399,091	0.0%	25.4%
Total Mass	9,983,924	0	0	9,983,924			544,562	9,439,363	100.0%	100.0%
Average Density	1,057			1,057			291	1,248		
Total Volume	9,442			9,442			1,871	7,564		
Combined Volatile Constitutents										
Carbon	29,452			29,452	0.00	1.00	0	29,452		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	0.00	1.00	0	3,686		
Oxygen	466			466	0.00	1.00	0	466		
Nitrogen	34			34	0.00	1.00	0	34		
Combined Combustible Constitutents										
Carbon	63,514			63,514	1.00	0.00	63,514	0		
Chloride	226			226	1.00	0.00	226	0		
Hydrogen	7,963			7,963	1.00	0.00	7,963	0		
Oxygen	52,714			52,714	1.00	0.00	52,714	0		
Nitrogen	1,622			1,622	1.00	0.00	1,622	0		

List of assumptions:

sort

Incoming Streams	>60 mm			Composite Feed	Conversion Factors	Conversion Factors	sort		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0	56.9%
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0	14.2%
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0	23.1%
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	5.8%
Noncombustible Sludge	0			0	1.00	0.00	0	0	0.0%
Water in noncombustible sludge	0			0	1.00	0.00	0	0	0.0%
Oil & VOCs	0			0	1.00	0.00	0	0	0.0%
Soil	0			0	1.00	0.00	0	0	0.0%
Water in Soil	0			0	1.00	0.00	0	0	0.0%
Total Mass	544,562	0	0	544,562			544,562	0	100.0%
Average Density	291			291			291		
Total Volume	1,871			1,871			1,871		
Combined Volatile Constitutents									
Carbon	0			0	1.00	0.00	0	0	
Chloride	0			0	1.00	0.00	0	0	
Hydrogen	0			0	1.00	0.00	0	0	
Oxygen	0			0	1.00	0.00	0	0	
Nitrogen	0			0	1.00	0.00	0	0	
Combined Combustible Constitutents									
Carbon	63,514			63,514	1.00	0.00	63,514	0	
Chloride	226			226	1.00	0.00	226	0	
Hydrogen	7,963			7,963	1.00	0.00	7,963	0	
Oxygen	52,714			52,714	1.00	0.00	52,714	0	
Nitrogen	1,622			1,622	1.00	0.00	1,622	0	

List of assumptions:

Shredding

Incoming Streams	sort			Composite Feed	Conversion Factors	Conversion Factors	Shredded Debris		Stuff	Shredded Density	Volume	Average density
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Debris			
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0	544,562	640	851	
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0				
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0	Non debris			
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	0	1,250	0	
Noncombustible Sludge	0			0	0.00	1.00	0	0				640
Water in noncombustible sludge	0			0	0.00	1.00	0	0				
Oil & VOCs	0			0	0.00	1.00	0	0				
Soil	0			0	0.00	1.00	0	0				
Water in soil	0			0	0.00	1.00	0	0				
Total Mass	544,562	0	0	544,562			544,562	0				
Average Density	291			291			582	0				
Total Volume	1,871			1,871			935					
Combined Volatile Constitutents												
Carbon	0			0	0.00	1.00	0	0				
Chloride	0			0	0.00	1.00	0	0				
Hydrogen	0			0	0.00	1.00	0	0				
Oxygen	0			0	0.00	1.00	0	0				
Nitrogen	0			0	0.00	1.00	0	0				
Combined Combustible Constitutents												
Carbon	63,514			63,514	1.00	0.00	63,514	0				
Chloride	226			226	1.00	0.00	226	0				
Hydrogen	7,963			7,963	1.00	0.00	7,963	0				
Oxygen	52,714			52,714	1.00	0.00	52,714	0				
Nitrogen	1,622			1,622	1.00	0.00	1,622	0				

List of assumptions:

Thermal Desorption

Incoming Streams	<60 mm			Composite Feed	Conversion Factors	Conversion Factors	SE Bottoms	SE Offgas		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%	0.0%
Noncombustible Sludge	76,492			76,492	1.00	0.00	76,492	0	1.1%	0.0%
Water in noncombustible sludge	26,876			26,876	0.00	1.00	0	26,876	0.0%	1.1%
Oil & VOCs	108,723			108,723	0.00	1.00	0	108,723	0.0%	4.3%
Soil	6,828,182			6,828,182	1.00	0.00	6,828,182	0	98.9%	0.0%
Water in soil	2,399,091			2,399,091	0.00	1.00	0	2,399,091	0.0%	94.7%
Total Mass	9,439,363	0	0	9,439,363			6,904,674	2,534,689	100.0%	100.0%
Average Density	1,248			1,248			913	1.3		
Total Volume	7.564			7,564			7,564	1,949,761		
Combined Volatile Constitutents										
Carbon	29,452			29,452	0.00	1.00	0	29,452		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	0.00	1.00	0	3,686		
Oxygen	466			466	0.00	1.00	0	466		
Nitrogen	34			34	0.00	1.00	0	34		
Combined Combustible Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		

List of assumptions:

Condenser

Incoming Streams	SE Offgas			Composite Feed	Conversion Factors	Conversion Factors	Neet Organic	Condensate Water		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%	0.0%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in noncombustible sludge	26,876			26,876	0.00	1.00	0	26,876	0.0%	1.1%
Oil & VOCs	108,723			108,723	0.90	0.10	97,850	10,872	100.0%	0.4%
Soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in soil	2,399,091			2,399,091	0.00	1.00	0	2,399,091	0.0%	98.5%
Total Mass	2,534,689	0	0	2,534,689			97,850	2,436,839	100.0%	100.0%
Average Density	1.3						1,200	1,200		
Total Volume	1,949,761						82	2,031		
Combined Volatile Constitutents										
Carbon	29,452			29,452	0.90	0.10	26,507	2,945		
Chloride	75,086			75,086	0.90	0.10	67,577	7,509		
Hydrogen	3,686			3,686	0.90	0.10	3,317	369		
Oxygen	466			466	0.90	0.10	419	47		
Nitrogen	34			34	0.90	0.10	30	3		
Combined Combustible Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		

List of assumptions:

Fraction of incoming water and organics that passes to the	100%
Fraction of the incoming organics that partition to the water condensate	10%
Fraction of the incoming organics sent to an offsite vendor	90%

Activated Carbon

Incoming Streams Component	Condensate Water Mass (kgs)	GAC Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Pond Mass (kgs)	Spent GAC Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%	0.0%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in noncombustible sludge	26,876			26,876	0.996	0.00	26,767	108	1.1%	0.2%
Oil & VOCs	10,872			10,872	0.10	0.90	1,087	9,785	0.0%	14.3%
Soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in soil	2,399,091			2,399,091	0.996	0.004	2,389,414	9,677	98.8%	14.1%
Total water on GAC								9,785		
GAC		48,925		48,925	0.00	1.00	0	48,925	0.0%	71.4%
Total Mass	2,436,839	48,925	0	2,485,764			2,417,269	68,495	100.0%	100.0%
Average Density	1,200						1,200	500		
Total Volume	2,031						2,014	137		
Combined Volatile Constitutents										
Carbon	2,945			2,945	0.10	0.90	295	2,651		
Chloride	7,509			7,509	0.10	0.90	751	6,758		
Hydrogen	369			369	0.10	0.90	37	332		
Oxygen	47			47	0.10	0.90	5	42		
Nitrogen	3			3	0.10	0.90	0	3		
Combined Combustible Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		

List of assumptions:	
Fraction of water to the pond =	0.996
Fraction of the incoming organics that partition to the water condensate	10%
Fraction of organics in condensate adsorbed by the GAC	90%
Adsorption capacity of organic on GAC, kg orglkg C	0.20
Adsorption capacity of water on GAC kg H2O/kg C	0.20

Activated Carbon Regeneration

Incoming Streams	Spent GAC			Composite Feed	Conversion Factors	Conversion Factors	Offsite Treatment	Clean GAC		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%	0.0%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in noncombustible sludge	108			108	1.00	0.00	108	0	0.4%	0.0%
Oil & VOCs	9,785			9,785	1.00	0.00	9,785	0	33.3%	0.0%
Soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in soil	9,677			9,677	1.00	0.00	9,677	0	33.0%	0.0%
Total water on GAC	9,785			9,785	1.00	0.00	9,785	0		
GAC	48,925			48,925	0.00	1.00	0	48,925	0.0%	100.0%
Total Mass	78,280	0	0	78,280			29,355	48,925	100.0%	100.0%
Average Density	500						1,200	500		
Total Volume	157						24	98		
Combined Volatile Constitutents										
Carbon	2,651			2,651	1.00	0.00	2,651	0		
Chloride	6,758			6,758	1.00	0.00	6,758	0		
Hydrogen	332			332	1.00	0.00	332	0		
Oxygen	42			42	1.00	0.00	42	0		
Nitrogen	3			3	1.00	0.00	3	0		
Combined Combustible Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		

List of assumptions:

1. All volatile material goes offsite

Leach/Recovery

Incoming Streams Component	SE Bottoms Mass (kgs)	Leachant Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Clean Soil Mass (kgs)	Leachate Mass (kgs)		
Steel noncombustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%	0.0%
Noncombustible Sludge	76.492			76,492	0.90	0.10	68,842	7,649	0.4%	0.2%
Water in noncombustible sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Oil & VOCs	0			0	0.00	1.00	0	0	0.0%	0.0%
Soil	6,828,182			6,828.1 82	0.90	0.10	6,145,364	682.818	39.6%	19.8%
Water in soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Leach chemicals		7,767,758		7,767,758	0.80	0.20	6,214,206	1,553,552	40.0%	45.0%
Water in leachant		4,315,421		4,315,421	0.72	0.28	3,107,103	1,208,318	20.0%	35.0%
Total Mass	6,904,674	12,083,179	0	18,987,852			15,535,515	3,452,337	100.0%	100.0%
Average Density	913	1,150					1,867	903		
Total Volume	7,564	10,507					8,320	3,825		
Combined Volatile Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		
Combined Combustible Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		

List of assumptions/multipliers:

1. Fraction of soil and sludge carried from leachlrecovery with the leachate	10%
2. Fraction of inlet soil and sludge returned to Pit 9	90%
3. Fraction of leach chemical in leachate from leachlrecovery	45%
4. Fraction of water in leachate leachlrecovery	35%
5. Fraction of soillsludge in leachate leachlrecovery	20%
6. Fraction of leach chemical in soil/sludge returned to Pit 9	40%
7. Fraction of water in soillsludge returned to Pit 9	20%
8. Fraction of solids In soillsludge returned to Pit 9	40%
9. Percent volume increase of dean soil and sludge back to Pit 9	10%
10. Volume increase of leachate plus soil and sludge leach/recovery	30%

Stabilize Clean Soil to Pit 9

Incoming Streams	Clean Soil	Grout		Composite Feed	Conversion Factors	Conversion Factors	Stabilized Soil		
	Mass	Mass	Mass	Mass	Mass	Mass	Mass	Mass	
Component	(kgs)	(kgs)	(kgs)	(kgs)	(kgs)	(kgs)	(kgs)	(kgs)	
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%
Noncombustible Sludge	68,842			68,842	1.00	0.00	68,842	0	0.4%
Water in noncombustible sludge	0			0	0.00	1.00	0	0	0.0%
Oil & VOCs	0			0	0.00	1.00	0	0	0.0%
Soil	6,145,364			6,145,364	1.00	0.00	6,145,364	0	33.0%
Water in soil	0			0	0.00	1.00	0	0	0.0%
Leach chemical	6,214,206			6,214,206	1.00	0.00	6,214,206	0	33.3%
Water in leachant	3,107,103			3,107,103	1.00	0.00	3,107,103	0	16.7%
Grout	0	3,107,103		3,107,103	1.00	0.00	3,107,103	0	16.7%
	0								0.0%
Total Mass	15,535,515	3,107,103	0	18,642,618			18,642,618	0	100.0%
Average Density	1,867	1,510					1,600	0	
Total Volume	8,320	2,058					11,652	0	
Combined Volatile Constitutents									
Carbon	0			0	0.00	1.00	0	0	
Chloride	0			0	1.00	0.00	0	0	
Hydrogen	0			0	0.00	1.00	0	0	
Oxygen	0			0	0.00	1.00	0	0	
Nitrogen	0			0	0.00	1.00	0	0	
Combined Combustible Constitutents									
Carbon	0			0	0.00	1.00	0	0	
Chloride	0			0	1.00	0.00	0	0	
Hydrogen	0			0	0.00	1.00	0	0	
Oxygen	0			0	0.00	1.00	0	0	
Nitrogen	0			0	0.00	1.00	0	0	

List of assumptions:

Stabilize

Incoming Streams	Leachate	Grout		Composite Feed	Conversion Factors	Conversion Factors	Stabilized Leachate		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	
Steel noncombustible debris	0			0	0.00	1.00	0	0	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%
Noncombustible Sludge	7,649			7,649	1.00	0.00	7,649	0	0.2%
Water in noncombustible sludge	0			0	0.00	1.00	0	0	0.0%
Oil & VOCs	0			0	0.00	1.00	0	0	0.0%
Soil	682,818			682,818	1.00	0.00	682,818	0	16.5%
Water in soil	0			0	0.00	1.00	0	0	0.0%
Leach chemical	1,553,552			1,553,552	1.00	0.00	1,553,552	0	37.5%
Water in leachant	1,208,318			1,208,318	1.00	0.00	1,208,318	0	29.2%
Grout		690.467		690,467	1.00	0.00	690,467	0	16.7%
									0.0%
Total Mass	3,452,337	690,467	0	4,142,804			4,142,804	0	100.0%
Average Density	3,825	1,510					1,600	0	
Total Volume	903	457					2,589	0	
Combined Volatile Constitutents									
Carbon	0			0	0.00	1.00	0	0	
Chloride	0			0	1.00	0.00	0	0	
Hydrogen	0			0	0.00	1.00	0	0	
Oxygen	0			0	0.00	1.00	0	0	
Nitrogen	0			0	0.00	1.00	0	0	
Combined Combustible Constitutents									
Carbon	0			0	0.00	1.00	0	0	
Chloride	0			0	1.00	0.00	0	0	
Hydrogen	0			0	0.00	1.00	0	0	
Oxygen	0			0	0.00	1.00	0	0	
Nitrogen	0			0	0.00	1.00	0	0	

List of assumptions:

Repackage

incoming Streams Component	Shredded Debris Mass (kgs)	Drum Mass (kgs)	Leachate Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Shredded Debris Repackage Mass (kgs)	Leachate Repackage Mass (kgs)
Steel noncombustible debris	309,612		0	309,612	1.00		309,612	0
Water in steel etc.	77,403		0	77,403	1.00		77,403	0
Combustible Debris	126,037		0	126,037	1.00		126,037	0
Water in combustibles	31,510		0	31,510	1.00		31,510	0
Noncombustible Sludge	0		7,649	7,649		1.00	0	7,649
Water in noncombustible sludge	0		0	0		1.00	0	0
Oil & VOCs	0		0	0		1.00	0	0
Soil	0		682,818	682,818		1.00	0	682,818
Water in soil	0		0	0		1.00	0	0
Leach chemical	0		1,553,552	1,553,552		1.00	0	1,553,552
Water in leachant	0		1,208,318	1,208,318		1.00	0	1,208,318
Grout	0		690,467	690,467		1.00	0	690,467
Drums	0	937,473		937,473	0.12	0.88	108,912	828,561
Total Mass	544,562	937,473	4,142,804	5,624,839			653,474	4,971,365
Average Density	913		1,600				913	1,600
Total Volume	597		2,589				716	3,107
Combined Volatile Constitutents								
Carbon	0		0	0	0.00	1.00	0	0
Chloride	0		0	0	0.00	1.00	0	0
Hydrogen	0		0	0	0.00	1.00	0	0
Oxygen	0		0	0	0.00	1.00	0	0
Nitrogen	0		0	0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	63,514		0	63,514	1.00	0.00	63,514	0
Chloride	226		0	226	1.00	0.00	226	0
Hydrogen	7,963		0	7,963	1.00	0.00	7,963	0
Oxygen	52,714		0	52,714	1.00	0.00	52,714	0
Nitrogen	1,622		0	1,622	1.00	0.00	1,622	0

List of assumptions:

Compact

Incoming Streams Component	Repackage Debris Repackage Mass (kgs)	Leachate Repackage Mass (kgs)	Drums Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	WIPP Mass (kgs)	Mass (kgs)
Steel non-combustible debris	309,612	0		309,612	1.00	0.00	309,612	0
Water in steel etc.	77,403	0		77,403	1.00	0.00	77,403	0
Combustible Debris	126,037	0		126,037	1.00	0.00	126,037	0
Water in combustibles	31,510	0		31,510	1.00	0.00	31,510	0
Noncombustible Sludge	0	7,649		7,649	1.00	0.00	7,649	0
Water in noncombustible sludge	0	0		0	1.00	0.00	0	0
Oil & VOCs	0	0		0	1.00	0.00	0	0
Soil	0	682,818		682,818	1.00	0.00	682,818	0
Water in soil	0	0		0	1.00	0.00	0	0
Leach chemical	0	1,553,552		1,553,552	1.00	0.00	1,553,552	0
Water in leachant	0	1,208,318		1,208,318	1.00	0.00	1,208,318	0
Grout	0	690,467		690,467	1.00	0.00	690,467	0
Drums	108,912	828,561	65,347	1,002,821	1.00	0.00	1,002,821	0
Total Mass	653,474	4,971,365	65,347	5,690,186			5,690,186	0
Average Density	913	1,600					1,642	0
Total Volume	716	3,107					3,465	0
Combined Volatile Constitutents								
Carbon	0	0		0	0.00	1.00	0	0
Chloride	0	0		0	0.00	1.00	0	0
Hydrogen	0	0		0	0.00	1.00	0	0
Oxygen	0	0		0	0.00	1.00	0	0
Nitrogen	0	0		0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	63,514	0		63,514	1.00	0.00	63,514	0
Chloride	226	0		226	1.00	0.00	226	0
Hydrogen	7,963	0		7,963	1.00	0.00	7,963	0
Oxygen	52,714	0		52,714	1.00	0.00	52,714	0
Nitrogen	1,622	0		1,622	1.00	0.00	1,622	0

List of assumptions:

Summary of Disposal

	Disposal at WIPP		Return to Pit 9		Offsite treatment/disposal	
	Weight, kg	Volume, m3	Weight, kg	Volume, m3	Weight, kg	Volume, m3
Assay			9,983,924	9,442		
Stabilized Leachate	5,029,120	3,107				
Leached Soil/sludge			18,642,618	11,652		
GAC					29,355	24
Organics					146,775	179
Compacted Debris	663,100	358				
Total	5,692,220	3,465	28,626,542	21,093	176,130	204

1. Total volume to WPP	3,465
2. Total volume to Pit 9	21,093
3. Increase in volume returned to Pit 9	112%
4. Volume *of* secondary waste	204

PIT 9 ALT 3bp PIT RETURN OFFSITE.XLS

Assay

Incoming Streams Component	Feed Mass (kgs)	Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	> 100 nCi/g Mass (kgs)	< 100 nCi/g Mass (kgs)		
Steel non-combustible debris	619,224			619,224	0.50	0.50	309,612	309,612	3.1%	3.1%
Water in steel etc.	154,806			154,806	0.50	0.50	77,403	77,403	0.8%	0.8%
Combustible Debris	252,074			252,074	0.50	0.50	126,037	126,037	1.3%	1.3%
Water in combustibles	63,019			63,019	0.50	0.50	31,510	31,510	0.3%	0.3%
Noncombustible Sludge	152,983			152,983	0.50	0.50	76,492	76,492	0.8%	0.8%
Water in noncombustible sludge	53,751			53,751	0.50	0.50	26,876	26,876	0.3%	0.3%
Oil & VOCs	217,445			217,445	0.50	0.50	108,723	108,723	1.1%	1.1%
Soil	13,656,364			13,656,364	0.50	0.50	6,828,182	6,828,182	68.4%	68.4%
Water in soil	4,798,182			4,798,182	0.50	0.50	2,399,091	2,399,091	24.0%	24.0%
Total Mass	19,967,848	0	0	19,967,848			9,983,924	9,983.924	100.0%	100.0%
Average Density	1,057			1,057			1,057	1,057		
Total Volume	18,883			18,883			9,442	9,442		
Combined Volatile Constitutents										
Carbon	58,904			58,904	0.50	0.50	29,452	29,452		
Chloride	150,171			150,171	0.50	0.50	75,086	75,086		
Hydrogen	7,371			7,371	0.50	0.50	3,686	3,686		
Oxygen	932			932	0.50	0.50	466	466		
Nitrogen	67			67	0.50	0.50	34	34		
Combined Combustible Constitutents										
Carbon	127,027			127,027	0.50	0.50	63,514	63,514		
Chloride	452			452	0.50	0.50	226	226		
Hydrogen	15,925			15,925	0.50	0.50	7,963	7,963		
Oxygen	105,427			105,427	0.50	0.50	52,714	52,714		
Nitrogen	3,243			3,243	0.50	0.50	1,622	1,622		

List of assumptions:

Fraction of total material returned to pit 0.5

Segregate

Incoming Streams	<100 nCi/g			Composite Feed	Conversion Factors	Conversion Factors	>60mm	< 60mm		
	Mass	Mass	Mass	Mass	Mass	Mass	Mass	Mass		
Component	(kgs)	(kgs)	(kgs)	(kgs)	(kgs)	(kgs)	(kgs)	(kgs)		
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0	56.9%	0.0%
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0	14.2%	0.0%
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0	23.1%	0.0%
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	5.8%	0.0%
Noncombustible Sludge	76,492			76,492	0.00	1.00	0	76,492	0.0%	0.8%
Water in noncombustible sludge	26,876			26,876	0.00	1.00	0	26,876	0.0%	0.3%
Oil & VOCs	108,723			108,723	0.00	1.00	0	108,723	0.0%	1.2%
Soil	6,828,182			6,828,182	0.00	1.00	0	6,828,182	0.0%	72.3%
Water in soil	2,399,091			2,399,091	0.00	1.00	0	2,399,091	0.0%	25.4%
Total Mass	9,983,924	0	0	9,983,924			544,562	9,439,363	100.0%	100.0%
Average Density	1,057			1,057			291	1,248		
Total Volume	9,442			9,442			1,871	7,564		
Combined Volatile Constitutents										
Carbon	29,452			29,452	0.00	1.00	0	29,452		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	0.00	1.00	0	3,686		
Oxygen	466			466	0.00	1.00	0	466		
Nitrogen	34			34	0.00	1.00	0	34		
Combined Combustible Constitutents										
Carbon	63,514			63,514	1.00	0.00	63,514	0		
Chloride	226			226	1.00	0.00	226	0		
Hydrogen	7,963			7,963	1.00	0.00	7,963	0		
Oxygen	52,714			52,714	1.00	0.00	52,714	0		
Nitrogen	1,622			1,622	1.00	0.00	1,622	0		

List of assumptions:

sort

Incoming Streams	>60 mm			Composite Feed	Conversion Factors	Conversion Factors	sort		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0	56.9%
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0	14.2%
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0	23.1%
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	5.8%
Noncombustible Sludge	0			0	1.00	0.00	0	0	0.0%
Water in noncombustible sludge	0			0	1.00	0.00	0	0	0.0%
Oil & VOCs	0			0	1.00	0.00	0	0	0.0%
Soil	0			0	1.00	0.00	0	0	0.0%
Water in Soil	0			0	1.00	0.00	0	0	0.0%
Total Mass	544,562	0	0	544,562			544,562	0	100.0%
Average Density	291			291			291		
Total Volume	1,871			1,871			1,871		
Combined Volatile Constitutents									
Carbon	0			0	0.00	1.00	0	0	
Chloride	0			0	0.00	1.00	0	0	
Hydrogen	0			0	0.00	1.00	0	0	
Oxygen	0			0	0.00	1.00	0	0	
Nitrogen	0			0	0.00	1.00	0	0	
Combined Combustible Constitutents									
Carbon	63,514			63,514	1.00	0.00	63,514	0	
Chloride	226			226	1.00	0.00	226	0	
Hydrogen	7,963			7,963	1.00	0.00	7,963	0	
Oxygen	52,714			52,714	1.00	0.00	52,714	0	
Nitrogen	1,622			1,622	1.00	0.00	1,622	0	

List of assumptions:

Fraction of debris that goes to Shredding 1

Shredding

Incoming Streams	**sort**			**Composite Feed**	Conversion Factors	Conversion Factors	**Shredded** Debris		Stuff	Shredded Density	Volume	Average density
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Debris			
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0	544,562	640	851	
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0				
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0	Non debris			
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	0	1,250	0	
Noncombustible Sludge	0			0	1.00	0.00	0	0				640
Water in noncombustible sludge	0			0	1.00	0.00	0	0				
Oil & VOCs	0			0	1.00	0.00	0	0				
Soil	0			0	1.00	0.00	0	0				
Water in soil	0			0	1.00	0.00	0	0				
Total Mass	544,562	0	0	544,562			544,562	0				
Average Density	291			291			582	0				
Total Volume	1,871			1,871			935					
Combined Volatile Constitutents												
Carbon	0			0	1.00	0.00	0	0				
Chloride	0			0	1.00	0.00	0	0				
Hydrogen	0			0	1.00	0.00	0	0				
Oxygen	0			0	1.00	0.00	0	0				
Nitrogen	0			0	1.00	0.00	0	0				
Combined Combustible Constitutents												
Carbon	63,514			63,514	1.00	0.00	63,514	0				
Chloride	226			226	1.00	0.00	226	0				
Hydrogen	7,963			7,963	1.00	0.00	7,963	0				
Oxygen	52,714			52,714	1.00	0.00	52,714	0				
Nitrogen	1.622			1,622	1.00	0.00	1,622	0				

List of assumptions:

Solvent Extraction

Incoming Streams	<60 mm Mass (kgs)	Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	SE Bottoms Mass (kgs)	SE Offgas Mass (kgs)		
Component										
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%	0.0%
Noncombustible Sludge	76,492			76,492	1.00	0.00	76,492	0	1.1%	0.0%
Water in noncombustible sludge	26,876			26,876	0.00	1.00	0	26,876	0.0%	1.1%
Oil & VOCs	108,723			108,723	0.00	1.00	0	108,723	0.0%	4.3%
Soil	6,828,182			6,828,182	1.00	0.00	6,828,182	0	98.9%	0.0%
Water in soil	2,399,091			2,399,091	0.00	1.00	0	2,399,091	0.0%	94.7%
Total Mass	9,439,363	0	0	9,439,363			6,904,674	2,534,689	100.0%	100.0%
Average Density	1,248			1,248			913	1.3		
Total Volume	7,564			7,564			7,564	1,949,761		
Combined Volatile Constitutents										
Carbon	29,452			29,452	0.00	1.00	0	29,452		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	0.00	1.00	0	3,686		
Oxygen	466			466	0.00	1.00	0	466		
Nitrogen	34			34	0.00	1.00	0	34		
Combined Combustible Constitutents										
Carbon	0			0		1.00	0	0		
Chloride	0			0		1.00	0	0		
Hydrogen	0			0		1.00	0	0		
Oxygen	0			0		1.00	0	0		
Nitrogen	0			0		1.00	0	0		

List of assumptions:

1. Fraction of feed that goes to bottoms: 1

3. Desorbed density kg/m3 (noncombustible sludge and soil divided by their volume): 913

Condenser

Incoming Streams	SE Offgas			Composite Feed	Conversion Factors	Conversion Factors	Neet Organic	Condensate Water		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%	0.0%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in noncombustible sludge	26,876			26,876	0.00	1.00	0	26,876	0.0%	1.1%
Oil & VOCs	108,723			108,723	0.90	0.10	97,850	10,872	100.0%	0.4%
Soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in soil	2,399,091			2,399,091	0.00	1.00	0	2,399,091	0.0%	98.5%
Total Mass	2,534,689	0	0	2,534,689			97,850	2,436,839	100.0%	100.0%
Average Density	1						1,200	1,200		
Total Volume	1,949,761						82	2,031		
Combined Volatile Constitutents										
Carbon	29,452			29,452	0.90	0.10	26,507	2,945		
Chloride	75,086			75,086	0.90	0.10	67,577	7,509		
Hydrogen	3,686			3,686	0.90	0.10	3,317	369		
Oxygen	466			466	0.90	0.10	419	47		
Nitrogen	34			34	0.90	0.10	30	3		
Combined Combustible Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		

List of assumptions:

Fraction of incoming water and organics that passes to the condensor	100%
Fraction of the incoming organics that partition to the water condensate	10%
Fraction of the incoming organics sent to an offsite vendor	90%

Activated Carbon

Incoming Streams	Condensate Water Mass (kgs)	GAC Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Pond Mass (kgs)	Spent GAC Mass (kgs)		
Component										
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%	0.0%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in noncombustible sludge	26,876			26,876	1.00	0.00	26,767	108	1.1%	0.2%
Oil & VOCs	10,872			10,872	0.10	0.90	1,087	9,785	0.0%	14.3%
Soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in soil	2,399,091			2,399,091	1.00	0.00	2,389,414	9,677	98.8%	14.1%
Total water on GAC								9,785		
GAC		48,925		48,925	0.00	1.00	0	48,925	0.0%	71.4%
Total Mass	2,436,839	48,925	0	2,485,764			2,417,269	68,495	100.0%	100.0%
Average Density	1,200						1,200	500		
Total Volume	2,031						2,014	137		
Combined Volatile Constitutents										
Carbon	2,945			2,945	0.10	0.90	295	2,651		
Chloride	7,509			7,509	0.10	0.90	751	6,758		
Hydrogen	369			369	0.10	0.90	37	332		
Oxygen	47			47	0.10	0.90	5	42		
Nitrogen	3			3	0.10	0.90	0	3		
Combined Combustible Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		

List of assumptions:	
Fraction of water to the pond =	0.996
Fraction of the incoming organics	10%
Fraction of organics in condensate adsorbed by the GAC	90%
Adsorption capacity of organic on GAC, kg orglkg C	0.20
Adsorption capacity of water on GAC kg H2O/kg C	0.20

Activated Carbon Regeneration

Incoming Streams	Spent GAC			Composite Feed	Conversion Factors	Conversion Factors	Offsite Treatment	Clean GAC		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%	0.0%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in noncombustible sludge	108			108	1.00	0.00	108	0	0.4%	0.0%
Oil & VOCs	9,785			9,785	1.00	0.00	9,785	0	33.3%	0.0%
Soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in soil	9,677			9,677	1.00	0.00	9,677	0	33.0%	0.0%
Total water on GAC	9,785			9,785	1.00	0.00	9,785	0		
GAC	48,925			48,925	0.00	1.00	0	48,925	0.0%	100.0%
Total Mass	78,280	0	0	78.280			29,355	48,925	100.0%	100.0%
Average Density	500						1,200	500		
Total Volume	157						24	98		
Combined Volatile Constitutents										
Carbon	2,651			2,651	1.00	0.00	2,651	0		
Chloride	6,758			6,758	1.00	0.00	6,758	0		
Hydrogen	332			332	1.00	0.00	332	0		
Oxygen	42			42	1.00	0.00	42	0		
Nitrogen	3			3	1.00	0.00	3	0		
Combined Combustible Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		

List of assumptions:

1. All volatile material goes offsite

Repackage

Incoming Streams Component	Shredded Debris Mass (kgs)	Drum Mass (kgs)	Clean Soil Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Shredded Debris Repackage Mass (kgs)	Soil Repackage Mass (kgs)
Steel non-combustible debris	309,612		0	309,612	1.00	0.00	309,612	0
Water in steel etc.	77,403		0	77,403	1.00	0.00	77,403	0
Combustible Debris	126,037		0	126,037	1.00	0.00	126,037	0
Water in combustibles	31,510		0	31,510	1.00	0.00	31,510	0
Noncombustible Sludge	0		76,492	76,492	0.00	1.00	0	76,492
Water in noncombustible sludge	0		0	0	0.00	1.00	0	0
Oil & VOCs	0		0	0	0.00	1.00	0	0
Soil	0		6,828,182	6,828,182	0.00	1.00	0	6,828,182
Water in soil	0		0	0	0.00	1.00	0	0
Leach chemical			0	0	0.00	1.00	0	0
Water in leachant			0	0	0.00	1.00	0	0
Grout			0	0	0.00	1.00	0	0
Drums		0		0	0.07	0.93	0	0
Total Mass	544,562	0	6,904,674	7,449,235			544,562	6,904,674
Average Density	582		913				582	913
Total Volume	935		7.564				935	7,564
Combined Volatile Constitutents								
Carbon	0		0	0	0.00	1.00	0	0
Chloride	0		0	0	0.00	1.00	0	0
Hydrogen	0		0	0	0.00	1.00	0	0
Oxygen	0		0	0	0.00	1.00	0	0
Nitrogen	0		0	0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	63,514		0	63,514	1.00	0.00	63,514	0
Chloride	226		0	226	1.00	0.00	226	0
Hydrogen	7,963		0	7,963	1.00	0.00	7,963	0
Oxygen	52,714		0	52,714	1.00	0.00	52,714	0
Nitrogen	1,622		0	1,622	1.00	0.00	1,622	0

List of assumptions:

1. Percent increase in volume in Repackage 20%
2. Percent increase in weight in Repackage 20%

Summary of Disposal

	Disposal at WIPP		Return to Pit 9		Offsite treatment/disposal	
	Weight, kg	Volume, m3	Weight, kg	Volume, m3	Weight, kg	Volume, m3
Clean Soil			6,904,674	7,564		
GAC					29,355	**24**
Organics					146,775	179
Shredded Debris			544,562	935		
Total	0	0	7,449,235	8,499	176,130	204

1. Total volume to WPP	0
2. Total volume to Pit 9	8,499
3. Increase in volume returned to Pit **9**	45%
4. Volume of secondary waste	204

PIT 9 ALT 4a LEACH ONSITE TD.XLS

Assay

Incoming Streams Component	Feed Mass (kgs)	Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	>100n Ci/g Mass (kgs)	<100 nCi/g Mass (kgs)		
Steel non-combustible debris	619,224			619,224	0.50	0.50	309,612	309,612	3.1%	3.1%
Water in steel etc.	154,806			154,806	0.50	0.50	77,403	77,403	0.8%	0.8%
Combustible Debris	252,074			252,074	0.50	0.50	126,037	126,037	1.3%	1.3%
Water in combustibles	63,019			63,019	0.50	0.50	31,510	31,510	0.3%	0.3%
Noncombustible Sludge	152,983			152,983	0.50	0.50	76,492	76,492	0.8%	0.8%
Water in noncombustible sludge	53,751			53,751	0.50	0.50	26,876	26,876	0.3%	0.3%
Oil & VOCs	217,445			217,445	0.50	0.50	108,723	108,723	1.1%	1.1%
Soil	13,656,364			13,656,364	0.50	0.50	6,828,182	6,828,182	68.4%	68.4%
Water in soil	4,798,182			4,798,182	0.50	0.50	2,399,091	2,399,091	24.0%	24.0%
Total Mass	19,967,848	0	0	19,967,848			9,983,924	9,983,924	100.0%	100.0%
Average Density	1,057			1,057			1,057	1,057		
Total Volume	18,883			18,883			9,442	9,442		
Combined Volatile Constitutents										
Carbon	58,904			58,904	0.50	0.50	29,452	29,452		
Chloride	150,171			150,171	0.50	0.50	75,086	75,086		
Hydrogen	7,371			7,371	0.50	0.50	3,686	3,686		
Oxygen	932			932	0.50	0.50	466	466		
Nitrogen	67			67	0.50	0.50	34	34		
Combined Combustible Constitutents										
Carbon	127,027			127,027	0.50	0.50	63,514	63,514		
Chloride	452			452	0.50	0.50	226	226		
Hydrogen	15,925			15,925	0.50	0.50	7,963	7,963		
Oxygen	105,427			105,427	0.50	0.50	52,714	52,714		
Nitrogen	3,243			3,243	0.50	0.50	1,622	1,622		

List of assumptions:

Segregate

Incoming Streams	>100 nCi/g			Composite Feed	Conversion Factors	Conversion Factors	>60mm	< 60mm		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)		
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0	56.9%	0.0%
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0	14.2%	0.0%
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0	23.1%	0.0%
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	5.8%	0.0%
Noncombustible Sludge	76,492			76,492	0.00	1.00	0	76,492	0.0%	0.8%
Water in noncombustible sludge	26,876			26,876	0.00	1.00	0	26,876	0.0%	0.3%
Oil & VOCs	108,723			108,723	0.00	1.00	0	108,723	0.0%	1.2%
Soil	6,828,182			6,828,182	0.00	1.00	0	6,828,182	0.0%	72.3%
Water in soil	2,399,091			2,399,091	0.00	1.00	0	2,399,091	0.0%	25.4%
Total Mass	9,983,924	0	0	9,983,924			544,562	9,439,363	100.0%	100.0%
Average Density	1,057			1,057			291	1,248		
Total Volume	9,442			9.442			1,871	7,564		
Combined Volatile Constitutents										
Carbon	29,452			29,452	0.00	1.00	0	29,452		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	0.00	1.00	0	3,686		
Oxygen	466			466	0.00	1.00	0	466		
Nitrogen	34			34	0.00	1.00	0	34		
Combined Combustible Constitutents										
Carbon	63,514			63,514	1.00	0.00	63,514	0		
Chloride	226			226	1.00	0.00	226	0		
Hydrogen	7,963			7,963	1.00	0.00	7,963	0		
Oxygen	52,714			52,714	1.00	0.00	52,714	0		
Nitrogen	1,622			1,622	1.00	0.00	1,622	0		

List of assumptions:

sort

Incoming Streams	>60 mm			Composite Feed	Conversion Factors	Conversion Factors	sort		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0	56.9%
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0	14.2%
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0	23.1%
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	5.8%
Noncombustible Sludge	0			0	1.00	0.00	0	0	0.0%
Water in noncombustible sludge	0			0	1.00	0.00	0	0	0.0%
Oil & VOCs	0			0	1.00	0.00	0	0	0.0%
Soil	0			0	1.00	0.00	0	0	0.0%
Water in Soil	0			0	1.00	0.00	0	0	0.0%
Total Mass	544,562	0	0	544,562			544,562	0	100.0%
Average Density	291			291			291		
Total Volume	1,871			1,871			1,871		
Combined Volatile Constitutents									
Carbon	0			0	0.00	1.00	0	0	
Chloride	0			0	0.00	1.00	0	0	
Hydrogen	0			0	0.00	1.00	0	0	
Oxygen	0			0	0.00	1.00	0	0	
Nitrogen	0			0	0.00	1.00	0	0	
Combined Combustible Constitutents									
Carbon	63,514			63,514	1.00	0.00	63,514	0	
Chloride	226			226	1.00	0.00	226	0	
Hydrogen	7,963			7,963	1.00	0.00	7,963	0	
Oxygen	52,714			52,714	1.00	0.00	52,714	0	
Nitrogen	1,622			1,622	1.00	0.00	1,622	0	

List of assumptions:

Fraction of debris that goes to Shredding 1

Shredding

incoming Streams	sort			Composite Feed	Conversion Factors	Conversion Factors	Shreded Debris	
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0
Noncombustible Sludge	0			0	0.00	1.00	0	0
Water in noncombustible sludge	0			0	0.00	1.00	0	0
Oil & VOCs	0			0	0.00	1.00	0	0
Soil	0			0	0.00	1.00	0	0
Water in soil	0			0	0.00	1.00	0	0
Total Mass	544,562	0	0	544,562			544,562	0
Average Density	291			291			582	0
Total Volume	1,871			1,871			935	
Combined Volatile Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	0			0	0.00	1.00	0	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	63,514			63,514	1.00	0.00	63,514	0
Chloride	226			226	1.00	0.00	226	0
Hydrogen	7,963			7,963	1.00	0.00	7,963	0
Oxygen	52,714			52,714	1.00	0.00	52,714	0
Nitrogen	1,622			1,622	1.00	0.00	1,622	0

List of assumptions:

Thermal Desorption

Incoming Streams	<60 mm		Stream3	Composite Feed	Conversion Factors	Conversion Factors	TD Bottoms	TD Offgas		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%	0.0%
Noncombustible Sludge	76,492			76,492	1.00	0.00	76,492	0	1.1%	0.0%
Water in noncombustible sludge	26,876			26,876	0.00	1.00	0	26,876	0.0%	1.1%
Oil & VOCs	108,723			108,723	0.00	1.00	0	108,723	0.0%	4.3%
Soil	6,828,182			6,828,182	1.00	0.00	6,828,182	0	98.9%	0.0%
Water in soil	2,399,091			2,399,091	0.00	1.00	0	2,399,091	0.0%	94.7%
Total Mass	9,439,363	0	0	9,439,363			6,904,674	2,534,689	100.0%	100.0%
Average Density	1,248			1,248			913	1.3		
Total Volume	7,564			7.564			7,564	1,949,761		
Combined Volatile Constitutents										
Carbon	29,452			29,452	0.00	1.00	0	29,452		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	0.00	1.00	0	3,686		
Oxygen	466			466	0.00	1.00	0	466		
Nitrogen	34			34	0.00	1.00	0	34		
Combined Combustible Constitutents										
Carbon	0			0	1.00	0.00	0	0		
Chloride	0			0	1.00	0.00	0	0		
Hydrogen	0			0	1.00	0.00	0	0		
Oxygen	0			0	1.00	0.00	0	0		
Nitrogen	0			0	1.00	0.00	0	0		

List of assumptions:

1. Fraction of feed that goes to bottoms	1
3. Desorbed density kg/m3 (noncombustible sludge and soil divided by their volume)	913

Thermal Treatment

Incoming Streams Component	Shredded Debris Mass (kgs)	TD Offgas Mass (kgs)	Leachate Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	TT Bottoms Mass (kgs)	Offgas Mass (kgs)		
Steel non-combustible debris	309,612	0	0	309,612	1.00	0.00	309,612	0	31.0%	0.0%
Water in steel etc.	77,403	0	0	77,403	0.00	1.00	0	77,403	0.0%	1.4%
Combustible Debris	126,037	0	0	126,037	0.00	1.00	0	126,037	0.0%	2.3%
Water in combustibles	31,510	0	0	31,510	0.00	1.00	0	31,510	0.0%	0.6%
Noncombustible Sludge	0	0	7,649	7,649	1.00	0.00	7,649	0	0.8%	0.0%
Water in noncombustible sludge	0	26,876	0	26,876	0.00	1.00	0	26,876	0.0%	0.5%
Oil & VOCs	0	108,723	0	108,723	0.00	1.00	0	108,723	0.0%	2.0%
Soil	0	0	682,818	682,818	1.00	0.00	682,818	0	68.3%	0.0%
Water in soil	0	2,399,091	0	2,399,091	0.00	1.00	0	2,399,091	0.0%	43.4%
Leach chemicals			1,553,552	1,553,552	0.00	1.00	0	1,553,552	0.0%	28.1%
Water in leachate			1,208,318	1,208,318	0.00	1.00	0	1,208,318	0.0%	21.8%
			0	0	0.00	1.00	0	0	0.0%	0.0%
Total Mass	544,562	2,534,689	3,452,337	6,531,587			1,000,079	5,531,508	100.0%	100.0%
Average Density	582	1.3	903				1,600	1.3		
Total Volume	935	1,949,761	3,825	1,954,521			625	4,255,006		
Combined Volatile Constitutents										
Carbon	0	29,452		29,452	0.00	1.00	0	29,452		
Chloride	0	75,086		75,086	0.00	1.00	0	75,086		
Hydrogen	0	3,686		3,686	0.00	1.00	0	3,686		
Oxygen	0	466		466	0.00	1.00	0	466		
Nitrogen	0	34		34	0.00	1.00	0	34		
Combined Combustible Constitutents										
Carbon	63,514	0		63,514	0.00	1.00	0	63,514		
Chloride	226	0		226	0.00	1.00	0	226		
Hydrogen	7,963	0		7,963	0.00	1.00	0	7,963		
Oxygen	52,714	0		52,714	0.00	1.00	0	52,714		
Nitrogen	1,622	0		1,622	0.00	1.00	0	1,622		

List of assumptions:

Repackage for Shipment to WIPP

Incoming Streams	l-r Bottoms	Drum		Composite Feed	Conversion Factors	Conversion Factors	Repackage WIPP	
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0
Water in steel etc.	0			0	0.00	1.00	0	0
Combustible Debris	0			0	1.00	0.00	0	0
Water in combustibles	0			0	0.00	1.00	0	0
Noncombustible Sludge	7,649			7,649	1.00	0.00	7,649	0
Water in noncombustible sludge	0			0	0.00	1.00	0	0
Oil & VOCs	0			0	1.00	0.00	0	0
Soil	682,818			682,818	1.00	0.00	682,818	0
Water in soil	0			0	0.00	1.00	0	0
Scrub Solution	0			0	1.00	0.00	0	0
Grout	0			0	1.00	0.00	0	0
Drums		200,016		200,016	1.00	0.00	200,016	0
Total Mass	1,000,079	200,016	0	1,200,095			1,200,095	0
Average Density	1,600						1,600	0
Total Volume	625						750	0
Combined Volatile Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	0			0	0.00	1.00	0	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	0			0	0.00	1.00	0	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0

List of assumptions:

Offgas

Incoming Streams Component	TT Offgas Mass (kgs)	Scrub Solution Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Vent Mass (kgs)	Blowdown Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0	1.4%	0.0%
Combustible Debris	126,037			126,037	0.998	0.0018	125,811	226	2.3%	0.1%
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	0.6%	0.0%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in noncombustible sludge	26,876			26,876	1.00	0.00	26,876	0	0.5%	0.0%
Oil & VOCs	108,723			108,723	0.31	0.69	33,637	75,086	0.6%	21.3%
Soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in soil	2,399,091			2,399,091	1.00	0.00	2,399,091	0	44.0%	0.0%
Leach chemicals	1,553,552			1,553,552	1.00	0.00	1,553,552	0	28.5%	0.0%
Water in Leachate	1,208,318			1,208,318	1.00	0.00	1,208,318	0	22.1%	0.0%
Sodium in Scrub Solution		50,459		50,459	0.00	1.00	0	50,459	0.0%	14.3%
Water in scrub		226,386		226,386	0.00	1.00	0	226,386	0.0%	64.3%
Total Mass	5,531,508	276,845	0	5,808,353			5,456,196	352,157	100.0%	100.0%
Average Density	1.3	1,200					1.3	1,200		
Total Volume	4,255,006	231					4,197,074	293		
Combined Volatile Constitutents										
Carbon	29,452			29,452	1.00	0.00	29,452	0		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	1.00	0.00	3,686	0		
Oxygen	466			466	1.00	0.00	466	0		
Nitrogen	34			34	1.00	0.00	34	0		
Combined Combustible Constitutents										
Carbon	63,514			63,514	1.00	0.00	63,514	0		
Chloride	226			226	0.00	1.00	0	226		
Hydrogen	7,963			7,963	1.00	0.00	7,963	0		
Oxygen	52,714			52,714	1.00	0.00	52,714	0		
Nitrogen	1,622			1,622	1.00	0.00	1,622	0		

List of assumptions:

Fraction of NaCl in scrub blowdown given the percent NaCl in final stabilized waste (see Stabilize BD) 36%

Stabilize Offgas Scrub

Incoming Streams Component	Blowdown Mass (kgs)	Grout Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Stabilized BD Mass (kgs)	Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.00%	
Water in steel etc.	0			0	0.00	1.00	0	0	0.00%	
Combustible Debris	226			226	1.00	0.00	226	0	0.04%	
Water in combustibles	0			0	0.00	1.00	0	0	0.00%	
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.00%	
Water in noncombustible sludge	0			0	0.00	1.00	0	0	0.00%	
Oil & VOCs	75,086			75,086	1.00	0.00	75,086	0	14.93%	
Soil	0			0	0.00	1.00	0	0	0.00%	
Water in soil	0			0	0.00	1.00	0	0	0.00%	
Sodium in Scrub Solution	50,459			50,459	1.00	0.00	50,459	0	10.03%	25.00%
Water in scrub	226,386			226,386	1.00	0.00	226.386	0	45.00%	
Grout		150,924		150,924	1.00	0.00	150,924	0	30.00%	
									0.00%	
Total Mass	352,157	150,924	0	503,081			503,081	0	100.00%	
Average Density	1,200	1,510					1,600	0		
Total Volume	293	100					314	0		
Combined Volatile Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	75,086			75,086	1.00	0.00	75,086	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		
Combined Combustible Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	226			226	1.00	0.00	226	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		

List of assumptions:

Percent water in stabilized scrub blowdown	45%
Percent grout in stabilized scrub blowdown	30%
Percent NaCl in stabilized scrub blowdown	25%
Percent Cl in stabilized scrub blowdown	15%

Repackage Stabilized Scrub

Incoming Streams Component	Stabilized BD Mass (kgs)	Drum Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Repackage BD Mass (kgs)	Mass (kgs)
Steel non-combustible debris	0			0	1.00	0.00	0	0
Water in steel etc.	0			0	0.00	1.00	0	0
Combustible Debris	226			226	1.00	0.00	226	0
Water in combustibles	0			0	0.00	1.00	0	0
Noncombustible Sludge	0			0	1.00	0.00	0	0
Water in noncombustible sludge	0			0	0.00	1.00	0	0
Oil & VOCs	75,086			75,086	1.00	0.00	75,086	0
Soil	0			0	1.00	0.00	0	0
Water in soil	0			0	0.00	1.00	0	0
Scrub Solution	50,459			50,459	1.00	0.00	50,459	0
Grout	226,386			226,386	1.00	0.00	226,386	0
Water	150,924			150,924	1.00	0.00	150,924	0
Drums		0						
Total Mass	503,081	0	0	503,081			503,081	0
Average Density	1,600						1,600	0
Total Volume	314						314	0
Combined Volatile Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	75,086			75,086	1.00	0.00	75,086	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	226			226	1.00	0.00	226	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0

List of assumptions:

Leach/Recovery

Incoming Streams Component	TD Bottoms Mass (kgs)	Leachant Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Clean Soil Mass (kgs)	Leachate Mass (kgs)		
Steel noncombustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%	0.0%
Noncombustible Sludge	76,492			76,492	0.90	0.10	68.842	7,649	0.4%	0.2%
Water in noncombustible sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Oil & VOCs	0			0	0.00	1.00	0	0	0.0%	0.0%
Soil	6,828,182			6,828,182	0.90	0.10	6,145,364	682.818	39.6%	19.8%
Water in soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Leach chemicals		7,767,758		7,767,758	0.80	0.20	6,214,206	1,553,552	40.0%	45.0%
Water in leachant		4,315,421		4,315,421	0.72	0.28	3,107,103	1,208,318	20.0%	35.0%
Total Mass	6,904,674	12,083,179	0	18,987,852			15,535,515	3,452,337	100.0%	100.0%
Average Density	913	1,150					1,867	903		
Total Volume	7,564	10,507					8,320	3,825		
Combined Volatile Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		
Combined Combustible Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		

List of assumptions/multipliers:

1. Fraction of soil and sludge carried from leachlrecovery with the leachate	10%
2. Fraction of inlet soil and sludge returned to Pit 9	90%
3. Fraction of leach chemical in leachate from leach/recovery	45%
4. Fraction of water in leachate leachlrecovery	35%
5. Fraction of soil/sludge in leachate leachlrecovery	20%
6. Fraction of leach chemical in soillsludge returned to Pit 9	40%
7. Fraction of water in soil/sludge returned to Pit 9	20%
8. Fraction of solids in soil/sludge returned to Pit 9	40%
9. Percent weight increase of dean soil and sludge back to Pit 9	10%
10. Volume increase of leachate plus soil and sludge leachlrecovery	30%

Stabilize Clean Soil to Pit 9

Incoming Streams	Clean Soil	Grout		Composite Feed	Conversion Factors	Conversion Factors	Stabilized Soil		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	(kgs)	
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.00%
Water in steel etc.	0			0	0.00	1.00	0	0	0.00%
Combustible Debris	0			0	0.00	1.00	0	0	0.00%
Water in combustibles	0			0	0.00	1.00	0	0	0.00%
Noncombustible Sludge	68,842			68,842	1.00	0.00	68,842	0	0.37%
Water in noncombustible sludge	0			0	0.00	1.00	0	0	0.00%
Oil & VOCs	0			0	0.00	1.00	0	0	0.00%
Soil	6,145,364			6,145,364	1.00	0.00	6,145,364	0	32.96%
Water in soil	0			0	0.00	1.00	0	0	0.00%
Leach chemical	6,214,206			6,214,206	1.00	0.00	6,214,206	0	33.33%
Water in leachant	3,107,103			3,107,103	1.00	0.00	3,107,103	0	16.67%
Grout		3,107,103		3,107,103	1.00	0.00	3,107,103	0	16.67%
	0								0.00%
Total Mass	15,535,515	3,107,103	0	18,642,618			18,642,618	0	100.00%
Average Density	1,867	1,510					1,600	0	
Total Volume	8,320	2,058					11,652	0	
Combined Volatile Constitutents									
Carbon	0			0	0.00	1.00	0	0	
Chloride	0			0	0.00	1.00	0	0	
Hydrogen	0			0	0.00	1.00	0	0	
Oxygen	0			0	0.00	1.00	0	0	
Nitrogen	0			0	0.00	1.00	0	0	
Combined Combustible Constitutents									
Carbon	0			0	0.00	1.00	0	0	
Chloride	0			0	0.00	1.00	0	0	
Hydrogen	0			0	0.00	1.00	0	0	
Oxygen	0			0	0.00	1.00	0	0	
Nitrogen	0			0	0.00	1.00	0	0	

List of assumptions:

Summary of Disposal

	Disposal at WIPP		Return to Pit 9		Secondary Waste Offsite	
	Weight, kg	Volume, m^3	Weight, kg	Volume, m^3	Weight, kg	Volume, m^3
Assay			9,983,924	9,442		
Stabilized Scrub Solution			503,081	314		
Thermal Treatment Bottoms	1,200,095	750				
Leached Soil/sludge			18,642,618	11,652		
Organics						
Spent GAC						
Total	1,200,095	750	29,129,623	21,408		

1. Total volume to WPP	750
2. Total volume to Pit 9	21,408
3. Increase in volume returned to Pit 9	113%
4. Volume of secondary waste	0

PIT 9 ALT 4b LEACH ONSITE MELTER.XLS

Assay

Incoming Streams Component	Feed Mass (kgs)	Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	>100 nCi/g Mass (kgs)	<100 nCi/g Mass (kgs)		
Steel non-combustible debris	619,224			619,224	0.50	0.50	309,612	309,612	3.1%	3.1%
Water in steel etc.	154,806			154,806	0.50	0.50	77,403	77,403	0.8%	0.8%
Combustible Debris	252,074			252,074	0.50	0.50	126,037	126,037	1.3%	1.3%
Water in combustibles	63,019			63,019	0.50	0.50	31,510	31,510	0.3%	0.3%
Noncombustible Sludge	152,983			152,983	0.50	0.50	76,492	76,492	0.8%	0.8%
Water in noncombustible sludge	53,751			53,751	0.50	0.50	26,876	26,876	0.3%	0.3%
Oil & VOCs	217,445			217,445	0.50	0.50	108,723	108,723	1.1%	1.1%
Soil	13,656,364			13,656,364	0.50	0.50	6,828,182	6,828,182	68.4%	68.4%
Water in soil	4,798,182			4,798,182	0.50	0.50	2,399,091	2,399,091	24.0%	24.0%
Total Mass	19,967,848	0	0	19,967,848			9,983,924	9,983,924	100.0%	100.0%
Average Density	1,057			1,057			1,057	1,057		
Total Volume	18,883			18,883			9,442	9,442		
Combined Volatile Constitutents										
Carbon	58,904			58,904	0.50	0.50	29,452	29,452		
Chloride	150,171			150,171	0.50	0.50	75,086	75,086		
Hydrogen	7,371			7,371	0.50	0.50	3,686	3,686		
Oxygen	932			932	0.50	0.50	466	466		
Nitrogen	67			67	0.50	0.50	34	34		
Combined Combustible Constitutents										
Carbon	127,027			127,027	0.50	0.50	63,514	63,514		
Chloride	452			452	0.50	0.50	226	226		
Hydrogen	15,925			15,925	0.50	0.50	7,963	7,963		
Oxygen	105,427			105,427	0.50	0.50	52,714	52,714		
Nitrogen	3,243			3,243	0.50	0.50	1,622	1,622		

List of assumptions:

Segregate

Incoming Streams	>100 nCi/g			Composite Feed	Conversion Factors	Conversion Factors	>60mm	< 60mm		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)		
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0	56.9%	0.0%
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0	14.2%	0.0%
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0	23.1%	0.0%
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	5.8%	0.0%
Noncombustible Sludge	76,492			76,492	0.00	1.00	0	76,492	0.0%	0.8%
Water in noncombustible sludge	26,876			26,876	0.00	1.00	0	26,876	0.0%	0.3%
Oil & VOCs	108,723			108,723	0.00	1.00	0	108,723	0.0%	1.2%
Soil	6,828,182			6,828,182	0.00	1.00	0	6,828,182	0.0%	72.3%
Water in soil	2,399,091			2,399,091	0.00	1.00	0	2,399,091	0.0%	25.4%
Total Mass	9,983,924	0	0	9,983,924			544,562	9,439,363	100.0%	100.0%
Average Density	1,057			1,057			291	1,248		
Total Volume	9.442			9,442			1,871	7,564		
Combined Volatile Constitutents										
Carbon	29,452			29,452	0.00	1.00	0	29,452		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	0.00	1.00	0	3,686		
Oxygen	466			466	0.00	1.00	0	466		
Nitrogen	34			34	0.00	1.00	0	34		
Combined Combustible Constitutents										
Carbon	63,514			63,514	1.00	0.00	63,514	0		
Chloride	226			226	1.00	0.00	226	0		
Hydrogen	7,963			7,963	1.00	0.00	7,963	0		
Oxygen	52,714			52,714	1.00	0.00	52,714	0		
Nitrogen	1,622			1,622	1.00	0.00	1,622	0		

List of assumptions:

sort

Incoming Streams	>60 mm Mass (kgs)	Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	sort Mass (kgs)	Mass (kgs)	
Component									
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0	56.9%
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0	14.2%
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0	23.1%
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	5.8%
Noncombustible Sludge	0			0	1.00	0.00	0	0	0.0%
Water in noncombustible sludge	0			0	1.00	0.00	0	0	0.0%
Oil & VOCs	0			0	1.00	0.00	0	0	0.0%
Soil	0			0	1.00	0.00	0	0	0.0%
Water in Soil	0			0	1.00	0.00	0	0	0.0%
Total Mass	544,562	0	0	544,562			544,562	0	100.0%
Average Density	291			291			291		
Total Volume	1,871			1,871			1,871		
Combined Volatile Constitutents									
Carbon	0			0	0.00	1.00	0	0	
Chloride	0			0	0.00	1.00	0	0	
Hydrogen	0			0	0.00	1.00	0	0	
Oxygen	0			0	0.00	1.00	0	0	
Nitrogen	0			0	0.00	1.00	0	0	
Combined Combustible Constitutents									
Carbon	63,514			63,514	1.00	0.00	63,514	0	
Chloride	226			226	1.00	0.00	226	0	
Hydrogen	7,963			7,963	1.00	0.00	7,963	0	
Oxygen	52,714			52,714	1.00	0.00	52,714	0	
Nitrogen	1,622			1,622	1.00	0.00	1,622	0	

List of assumptions:

Fraction of debris that goes to Shredding 1

Shredding

Incoming Streams	sort			Composite Feed	Conversion Factors	Conversion Factors	Shredded Debris	
Component	Mass	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)
Steel noncombustible debris	309,612			309,612	1.00	0.00	309,612	0
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0
Noncombustible Sludge	0			0	0.00	1.00	0	0
Water in noncombustible sludge	0			0	0.00	1.00	0	0
Oil & VOCs	0			0	0.00	1.00	0	0
Soil	0			0	0.00	1.00	0	0
Water in soil	0			0	0.00	1.00	0	0
Total Mass	544,562	0	0	544,562			544,562	0
Average Density	291			291			582	0
Total Volume	1,871			1,871			935	
Combined Volatile Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	0			0	0.00	1.00	0	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	63,514			63,514	1.00	0.00	63,514	0
Chloride	226			226	1.00	0.00	226	0
Hydrogen	7,963			7,963	1.00	0.00	7,963	0
Oxygen	52,714			52,714	1.00	0.00	52,714	0
Nitrogen	1,622			1,622	1.00	0.00	1,622	0

List of assumptions:

Thermal Desorption

incoming Streams	<60 mm			Composite Feed	Conversion Factors	Conversion Factors	TD Bottoms	TD Offgas		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%	0.0%
Noncombustible Sludge	76,492			76,492	1.00	0.00	76,492	0	1.1%	0.0%
Water in noncombustible sludge	26,876			26,876	0.00	1.00	0	26,876	0.0%	1.1%
Oil & VOCs	108,723			108,723	0.00	1.00	0	108,723	0.0%	4.3%
Soil	6,828,182			6,828,182	1.00	0.00	6,828,182	0	98.9%	0.0%
Water in soil	2,399,091			2,399,091	0.00	1.00	0	2,399,091	0.0%	94.7%
Total Mass	9,439,363	0	0	9,439,363			6,904,674	2,534,689	100.0%	100.0%
Average Density	1,248			1,248			913	1.3		
Total Volume	7,564			7,564			7,564	1,949,761		
Combined Volatile Constitutents										
Carbon	29,452			29,452	0.00	1.00	0	29,452		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	0.00	1.00	0	3,686		
Oxygen	466			466	0.00	1.00	0	466		
Nitrogen	34			34	0.00	1.00	0	34		
Combined Combustible Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		

List of assumptions:

1. Fraction of feed that goes to bottoms: 1

3. Desorbed density kg/m3 (noncombustible sludge and soil divided by their volume): 913

Melter

incoming Streams Component	Shredded Debris Mass (kgs)	TD Offgas Mass (kgs)	Leachate Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Melt Mass (kgs)	Melter Offgas Mass (kgs)
Steel non-combustible debris	309,612	0	0	309,612	1.00	0.00	309,612	0
Water in steel etc.	77,403	0	0	77,403	0.00	1.00	0	77,403
Combustible Debris	126,037	0	0	126,037	0.00	1.00	0	126,037
Water in combustibles	31,510	0	0	31,510	0.00	1.00	0	31,510
Noncombustible Sludge	0	0	7,649	7,649	1.00	0.00	7,649	0
Water in noncombustible sludge	0	26,876	0	26,876	0.00	1.00	0	26,876
Oil & VOCs	0	108,723	0	108,723	0.00	1.00	0	108,723
Soil	0	0	682,818	682,818	1.00	0.00	682,818	0
Water in soil	0	2,399,091	0	2,399,091	0.00	1.00	0	2,399,091
Leach Chemicals			1,553,552	1,553,552	0.00	1.00	0	1,553,552
Water in leachate			1,208,318	1,208,318	0.00	1.00	0	1,208,318
				0		1.00	0	0
Total Mass	544,562	2,534,689	3,452,337	6,531,587			1,000,079	5,531,508
Average Density	582	1.3	903				2,128	1.3
Total Volume	935	1,949,761	3,825	1,954,521			470	4,255,006
Combined Volatile Constitutents								
Carbon		29,452	0	29,452	0.00	1.00	0	29,452
Chloride		75,086	0	75,086	0.00	1.00	0	75,086
Hydrogen		3,686	0	3,686	0.00	1.00	0	3,686
Oxygen		466	0	466	0.00	1.00	0	466
Nitrogen		34	0	34	0.00	1.00	0	34
Combined Combustible Constitutents								
Carbon	63,514		0	63,514	0.00	1.00	0	63,514
Chloride	226		0	226	0.00	1.00	0	226
Hydrogen	7,963		0	7,963	0.00	1.00	0	7,963
Oxygen	52,714		0	52,714	0.00	1.00	0	52,714
Nitrogen	1,622		0	1,622	0.00	1.00	0	1,622

List of assumptions:

Repackage for Shipment to WIPP

Incoming Streams	Melt	Drum		Composite Feed	Conversion Factors	Conversion Factors	Repackage WIPP	
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0
Water in steel etc.	0			0	0.00	1.00	0	0
Combustible Debris	0			0	1.00	0.00	0	0
Water in combustibles	0			0	0.00	1.00	0	0
Noncombustible Sludge	7,649			7,649	1.00	0.00	7,649	0
Water in noncombustible sludge	0			0	0.00	1.00	0	0
Oil & VOCs	0			0	1.00	0.00	0	0
Soil	682,818			682,818	1.00	0.00	682,818	0
Water in soil	0			0	0.00	1.00	0	0
Scrub Solution				0	1.00	0.00	0	0
Grout				0	1.00	0.00	0	0
Drums		200,016		200,016	1.00	0.00	200,016	0
Total Mass	1,000,079	200,016	0	1,200,095			1,200,095	0
Average Density	2,128						2,128	0
Total Volume	470						564	0
Combined Volatile Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	0			0	0.00	1.00	0	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	0			0	0.00	1.00	0	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0

List of assumptions:

Offgas

Incoming Streams Component	Melter Offgas Mass (kgs)	Scrub Solution Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Vent Mass (kgs)	Blowdown Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0	1.4%	0.0%
Combustible Debris	126,037			126,037	1.00	0.0018	125,811	226	2.3%	0.1%
Water in combustibles	31,510			31,510	1.00	0.00	31.510	0	0.6%	0.0%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in noncombustible sludge	26,876			26,876	1.00	0.00	26,876	0	0.5%	0.0%
Oil & VOCs	108,723			108,723	0.31	0.69	33,637	75,086	0.6%	21.3%
Soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in soil	2,399,091			2,399,091	1.00	0.00	2,399,091	0	44.0%	0.0%
Leach chemicals	1,553,552			1,553,552	1.00	0.00	1,553,552	0	28.5%	0.0%
Water in Leachate	1,208,318			1,208,318	1.00	0.00	1,208,318	0	22.1%	0.0%
Sodium in Scrub Solution		50,459		50,459	0.00	1.00	0	50,459	0.0%	14.3%
Water in scrub		226,386		226,386	0.00	1.00	0	226,386	0.0%	64.3%
Total Mass	5,531,508	276,845	0	5,808,353			5,456,196	352,157	100.0%	100.0%
Average Density	1.3	1,200					1.3	1,200		
Total Volume	4,255,006	231					4,197,074	293		
Combined Volatile Constitutents										
Carbon	29,452			29,452	1.00	0.00	29,452	0		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	1.00	0.00	3,686	0		
Oxygen	466			466	1.00	0.00	466	0		
Nitrogen	34			34	1.00	0.00	34	0		
Combined Combustible Constitutents										
Carbon	63,514			63,514	1.00	0.00	63,514	0		
Chloride	226			226	0.00	1.00	0	226		
Hydrogen	7,963			7,963	1.00	0.00	7,963	0		
Oxygen	52,714			52,714	1.00	0.00	52,714	0		
Nitrogen	1,622			1,622	1.00	0.00	1,622	0		

List of assumptions:
Fraction of NaCl in scrub blowdown assuming 25% in final stabilized waste 36%

Stabilize Offgas Scrub

Incoming Streams Component	Blowdown Mass (kgs)	Grout Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Stabilized BD Mass (kgs)	Mass (kgs)	
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.00%
Water in steel etc.	0			0	0.00	1.00	0	0	0.00%
Combustible Debris	226			226	1.00	0.00	226	0	0.04%
Water in combustibles	0			0	0.00	1.00	0	0	0.00%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.00%
Water in noncombustible sludge	0			0	0.00	1.00	0	0	0.00%
Oil & VOCs	75,086			75,086	1.00	0.00	75,086	0	14.93%
Soil	0			0	0.00	1.00	0	0	0.00%
Water in soil	0			0	0.00	1.00	0	0	0.00%
Scrub Solution (Na)	50,459			50,459	1.00	0.00	50,459	0	10.03%
Water in scrub	226.386			226,386	1.00	0.00	226,386	0	45.00%
Grout		150,924		150,924	1.00	0.00	150.924	0	30.00%
				0	1.00	0.00	0	0	0.00%
Total Mass	352,157	150,924	0	503,081			503,081	0	100.00%
Average Density	1,200	1,510					1,600	0	
Total Volume	293	100					314	0	
Combined Volatile Constitutents									
Carbon	0			0	0.00	1.00	0	0	
Chloride	75,086			75,086	1.00	0.00	75,086	0	
Hydrogen	0			0	0.00	1.00	0	0	
Oxygen	0			0	0.00	1.00	0	0	
Nitrogen	0			0	0.00	1.00	0	0	
Combined Combustible Constitutents									
Carbon	0			0	0.00	1.00	0	0	
Chloride	226			226	1.00	0.00	226	0	
Hydrogen	0			0	0.00	1.00	0	0	
Oxygen	0			0	0.00	1.00	0	0	
Nitrogen	0			0	0.00	1.00	0	0	

List of assumptions:

3. Percent water in stabilized waste	45%
4. Percent grout I stabilized waste	30%
5. Percent NaCl in stabilized waste	25%
6. Percent CI in stabilized waste	15%

Repackage Stabilized Scrub

Incoming Streams	Stabilized BD	Drum		Composite Feed	Conversion Factors	Conversion Factors	Repackaged BD	
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)
Steel non-combustible debris	0			0	1.00	0.00	0	0
Water in steel etc.	0			0	0.00	1.00	0	0
Combustible Debris	226			226	1.00	0.00	226	0
Water in combustibles	0			0	0.00	1.00	0	0
Noncombustible Sludge	0			0	1.00	0.00	0	0
Water in noncombustible sludge	0			0	0.00	1.00	0	0
Oil & VOCs	75,086			75,086	1.00	0.00	75,086	0
Soil	0			0	1.00	0.00	0	0
Water in soil	0			0	0.00	1.00	0	0
Scrub Solution	50,459			50,459	1.00	0.00	50,459	0
Grout	226,386			226,386	1.00	0.00	226,386	0
Water	150,924			150,924	1.00	0.00	150,924	0
Drums	0	0		0	1.00	0.00	0	0
Total Mass	503,081	0	0	503,081			503,081	0
Average Density	1,600						1,600	0
Total Volume	314						314	0
Combined Volatile Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	75,086			75,086	1.00	0.00	75,086	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	226			226	1.00	0.00	226	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0

List of assumptions:

Leach/Recovery

Incoming Streams Component	TID Bottoms Mass (kgs)	Leachant Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Clean Soil Mass (kgs)	Leachate Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%	0.0%
Noncombustible Sludge	7,492			76,492	0.90	0.10	68,842	7,649	0.4%	0.2%
Water in noncombustible sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Oil & VOCs	0			0	0.00	1.00	0	0	0.0%	0.0%
Soil	6,823,132			6,828,182	0.90	0.10	6,145,364	682,818	39.6%	19.8%
Water in soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Leach chemicals		7,767,758		7,767,758	0.80	0.20	6,214,206	1,553,552	40.0%	45.0%
Water in leachant		4,315,421		4,315,421	0.72	0.28	3,107,103	1,208,318	20.0%	35.0%
Total Mass	6,904,674	12,083,179	0	18,987,852			15,535,515	3,452,337	100.0%	100.0%
Average Density	913	1,150					1,712	903		
Total Volume	7,564	10,507					9,077	3,825		
Combined Volatile Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		
Combined Combustible Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		

List of assumptions/multipliers:

1. Fraction of soil and sludge carried from leach/recovery with the leachate	10%
2. Fraction of inlet soil and sludge returned to Pit 9	90%
3. Fraction of leach chemical in leachate from leach/recovery	45%
4. Fraction of water in leachate leach/recovery	35%
5. Fraction of soil/sludge in leachate leach/recovery	20%
6. Fraction of leach chemical in soil/sludge returned to Pit 9	40%
7. Fraction of water in soil/sludge returned to Pit 9	20%
8. Fraction of solids in soil/sludge returned to Pit 9	40%
9. Percent volume increase of clean soil and sludge back to Pit 9	10%
10. Volume increase of leachate plus soil and sludge leach/recovery	30%

Stabilize Clean Soil to Pit 9

Incoming Streams	Clean Soil	Grout		Composite Feed	Conversion Factors	Conversion Factors	Stabilized Soil		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.00%
Water in steel etc.	0			0	0.00	1.00	0	0	0.00%
Combustible Debris	0			0	0.00	1.00	0	0	0.00%
Water in combustibles	0			0	0.00	1.00	0	0	0.00%
Noncombustible Sludge	68,842			68,842	1.00	0.00	68,842	0	0.37%
Water in noncombustible sludge	0			0	0.00	1.00	0	0	0.00%
Oil & VOCs	0			0	0.00	1.00	0	0	0.00%
Soil	6,145,364			6,145,364	1.00	0.00	6,145,364	0	32.96%
Water in soil	0			0	0.00	1.00	0	0	0.00%
Leach chemical	6,214,206			6,214,206	1.00	0.00	6,214,206	0	33.33%
Water in leachant	3,107,103			3,107,103	1.00	0.00	3,107,103	0	16.67%
Grout	0	3,107,103		3,107,103	1.00	0.00	3,107,103	0	16.67%
									0.00%
Total Mass	15,535,515	3,107,103	0	18,642,618			18,642,618	0	100.00%
Average Density	1,712	1,510					1,600	0	
Total Volume	9,077	2,058					11,652	0	
Combined Volatile Constitutents									
Carbon	0			0	0.00	1.00	0	0	
Chloride	0			0	1.00	0.00	0	0	
Hydrogen	0			0	0.00	1.00	0	0	
Oxygen	0			0	0.00	1.00	0	0	
Nitrogen	0			0	0.00	1.00	0	0	
Combined Combustible Constitutents									
Carbon	0			0	0.00	1.00	0	0	
Chloride	0			0	1.00	0.00	0	0	
Hydrogen	0			0	0.00	1.00	0	0	
Oxygen	0			0	0.00	1.00	0	0	
Nitrogen	0			0	0.00	1.00	0	0	

List of assumptions:

Summary of Disposal

	Disposal at WIPP		Return to Pit 9	
	Weight, kg	Volume, m^3	Weight, kg	Volume, m^3
Assay Return to Pit			9,983,924	9,442
Stabilized Scrub Solution			503,081	314
Glass Product	1,200,095	564		
Leached Soil/sludge			18,642,618	11,652
Total	1,200,095	564	29,129,623	21,408

1. Total volume to WPP	564
2. Total volume to Pit 9	21,408
3. Increase in volume returned to Pit 9	113%
4. Volume of secondary waste	**0**

PIT 9 ALT 4c LEACH ONSITE TD.XLS

Assay

Incoming Streams Component	Feed Mass (kgs)	Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	>100 nCiG Mass (kgs)	<100 nCi/g Mass		
Steel non-combustible debris	619,224			619,224	0.50	0.50	309,612	309,612	3.1%	3.1%
Water in steel etc.	154,806			154,806	0.50	0.50	77,403	77,403	0.8%	0.8%
Combustible Debris	252,074			252,074	0.50	0.50	126,037	126,037	1.3%	1.3%
Water in combustibles	63,019			63,019	0.50	0.50	31,510	31,510	0.3%	0.3%
Noncombustible Sludge	152,983			152,983	0.50	0.50	76,492	76,492	0.8%	0.8%
Water in noncombustible sludge	53,751			53,751	0.50	0.50	26,876	26,876	0.3%	0.3%
Oil & VOCs	217,445			217,445	0.50	0.50	108,723	108,723	1.1%	1.1%
Soil	13,656,364			13,656,364	0.50	0.50	6,828,182	6,828,182	68.4%	68.4%
Water in soil	4,798,182			4,798,182	0.50	0.50	2,399,091	2,399,091	24.0%	24.0%
Total Mass	19,967,848	0	0	19,967,848			9,983,924	9,983,924	100.0%	100.0%
Average Density	1,057			1,057			1,057	1,057		
Total Volume	18,883			18,883			9,442	9,442		
Combined Volatile Constitutents										
Carbon	58,904			58,904	0.50	0.50	29,452	29,452		
Chloride	150,171			150,171	0.50	0.50	75,086	75,086		
Hydrogen	7,371			7,371	0.50	0.50	3,686	3,686		
Oxygen	932			932	0.50	0.50	466	466		
Nitrogen	67			67	0.50	0.50	34	34		
Combined Combustible Constitutents										
Carbon	127,027			127,027	0.50	0.50	63,514	63,514		
Chloride	452			452	0.50	0.50	226	226		
Hydrogen	15,925			15,925	0.50	0.50	7,963	7,963		
Oxygen	105,427			105,427	0.50	0.50	52,714	52,714		
Nitrogen	3,243			3,243	0.50	0.50	1,622	1,622		

List of assumptions:

Segregate

Incoming Streams Component	>100 nCi/g Mass (kgs)	(kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	>60mm Mass (kgs)	< 60mm Mass (kgs)		
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0	56.9%	0.0%
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0	14.2%	0.0%
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0	23.1%	0.0%
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	5.8%	0.0%
Noncombustible Sludge	76,492			76,492	0.00	1.00	0	76,492	0.0%	0.8%
Water in noncombustible sludge	26,876			26,876	0.00	1.00	0	26,876	0.0%	0.3%
Oil & VOCs	108,723			108,723	0.00	1.00	0	108,723	0.0%	1.2%
Soil	6,828,182			6,828,182	0.00	1.00	0	6,828,182	0.0%	72.3%
Water in soil	2,399,091			2,399,091	0.00	1.00	0	2,399,091	0.0%	25.4%
Total Mass	9,983,924	0	0	9,983,924			544,562	9,439,363	100.0%	100.0%
Average Density	1,057			1,057			291	1,248		
Total Volume	9,442			9,442			1,871	7,564		
Combined Volatile Constitutents										
Carbon	29,452			29,452	0.00	1.00	0	29,452		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	0.00	1.00	0	3,686		
Oxygen	466			466	0.00	1.00	0	466		
Nitrogen	34			34	0.00	1.00	0	34		
Combined Combustible Constitutents										
Carbon	63,514			63,514	1.00	0.00	63,514	0		
Chloride	226			226	1.00	0.00	226	0		
Hydrogen	7,963			7,963	1.00	0.00	7,963	0		
Oxygen	52,714			52,714	1.00	0.00	52,714	0		
Nitrogen	1,622			1,622	1.00	0.00	1,622	0		

List of assumptions:

1. Fraction of debris that goes to Shredding including associated water — 100%

2. Fraction of sludge, oil/VOC, and soil that does not get shredded (including associated water) — 100%

Sort

Incoming Streams	>60 mm			Composite Feed	Conversion Factors	Conversion Factors	Sort		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0	56.9%
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0	14.2%
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0	23.1%
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	5.8%
Noncombustible Sludge	0			0	1.00	0.00	0	0	0.0%
Water in noncombustible sludge	0			0	1.00	0.00	0	0	0.0%
Oil & VOCs	0			0	1.00	0.00	0	0	0.0%
Soil	0			0	1.00	0.00	0	0	0.0%
Water in Soil	0			0	1.00	0.00	0	0	0.0%
Total Mass	544,562	0	0	544,562			544,562	0	100.0%
Average Density	291			291			291		
Total Volume	1,871			1,871			1,871		
Combined Volatile Constitutents									
Carbon	0			0	0.00	100	0	0	
Chloride	0			0	0.00	100	0	0	
Hydrogen	0			0	0.00	100	0	0	
Oxygen	0			0	0.00	100	0	0	
Nitrogen	0			0	0.00	100	0	0	
Combined Combustible Constitutents									
Carbon	63,514			63,514	100	0.00	63,514	0	
Chloride	226			226	100	0.00	226	0	
Hydrogen	7,963			7,963	100	0.00	7,963	0	
Oxygen	52,714			52,714	100	0.00	52,714	0	
Nitrogen	1,622			1,622	100	0.00	1,622	0	

List of assumptions:

Fraction of debris that goes to Shredding 1

Shredding

Incoming Streams Component	Sort Mass (kgs)	Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Shred Mass (kgs)	Mass (kgs)	Stuff Debris	Shredded Density	Volume	Average density
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0	544,562	640	851	
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0				
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0	Non debris			
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	0	1,250	0	
Noncombustible Sludge	0			0	1.00	0.00	0	0				640
Water in noncombustible sludge	0			0	1.00	0.00	0	0				
Oil & VOCs	0			0	1.00	0.00	0	0				
Soil	0			0	1.00	0.00	0	0				
Water in soil	0			0	1.00	0.00	0	0				
Total Mass	544,562	0	0	544,562			544,562	0				
Average Density	291			291			582	0				
Total Volume	1,871			1,871			935					
Combined Volatile Constitutents												
Carbon	0			0	1.00	0.00	0	0				
Chloride	0			0	1.00	0.00	0	0				
Hydrogen	0			0	1.00	0.00	0	0				
Oxygen	0			0	1.00	0.00	0	0				
Nitrogen	0			0	1.00	0.00	0	0				
Combined Combustible Constitutents												
Carbon	63,514			63,514	1.00	0.00	63,514	0				
Chloride	226			226	1.00	0.00	226	0				
Hydrogen	7,963			7,963	1.00	0.00	7,963	0				
Oxygen	52,714			52,714	1.00	0.00	52,714	0				
Nitrogen	1,622			1,622	1.00	0.00	1,622	0				

List of assumptions:

Solvent Extraction

Incoming Streams	<60 mm			Composite Feed	Conversion Factors	Conversion Factors	SE Bottoms	SolvEx Offgas		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)		
Steel non-combustible debris	0			0	1.00	0.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	1.00	0.00	0	0	0.0%	0.0%
Combustible Debris	0			0	1.00	0.00	0	0	0.0%	0.0%
Water in combustibles	0			0	1.00	0.00	0	0	0.0%	0.0%
Noncombustible Sludge	76,492			76,492	1.00	0.00	76,492	0	1.1%	0.0%
Water in noncombustible sludge	26,876			26,876	0.00	1.00	0	26,876	0.0%	1.1%
Oil & VOCs	108,723			108,723	0.00	1.00	0	108,723	0.0%	4.3%
Soil	6,828,182			6,828,182	1.00	0.00	6,828,182	0	98.9%	0.0%
Water in soil	2,399,091			2,399,091	0.00	1.00	0	2,399,091	0.0%	94.7%
Total Mass	9,439,363	0	0	9,439,363			6,904,674	2,534,689	100.0%	100.0%
Average Density	1,248			1,248			913	1.3		
Total Volume	7.564			7,564			7,564	1,949,761		
Combined Volatile Constitutents										
Carbon	29,452			29,452	0.00	1.00	0	29,452		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	0.00	1.00	0	3,686		
Oxygen	466			466	0.00	1.00	0	466		
Nitrogen	34			34	0.00	1.00	0	34		
Combined Combustible Constitutents										
Carbon	0			0	1.00	0.00	0	0		
Chloride	0			0	1.00	0.00	0	0		
Hydrogen	0			0	1.00	0.00	0	0		
Oxygen	0			0	1.00	0.00	0	0		
Nitrogen	0			0	1.00	0.00	0	0		

List of assumptions:

Thermal Treatment

Incoming Streams Component	Shredding Mass (kgs)	SolvEx Mass (kgs)	Leachate Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	TT Bottoms Mass (kgs)	TT Offgas Mass (kgs)		
Steel non-combustible debris	309,612	0	0	309,612	1.00	0.00	309,612	0	31.0%	0.0%
Water in steel etc.	77,403	0	0	77,403	0.00	1.00	0	77,403	0.0%	1.4%
Combustible Debris	126,037	0	0	126,037	0.00	1.00	0	126,037	0.0%	2.3%
Water in combustibles	31,510	0	0	31,510	0.00	1.00	0	31,510	0.0%	0.6%
Noncombustible Sludge	0	0	7,649	7,649	1.00	0.00	7,649	0	0.8%	0.0%
Water in noncombustible sludge	0	26,876	0	26,876	0.00	1.00	0	26,876	0.0%	0.5%
Oil & VOCs	0	108,723	0	108,723	0.00	1.00	0	108,723	0.0%	2.0%
Soil	0	0	682,818	682,818	1.00	0.00	682,818	0	68.3%	0.0%
Water in soil	0	2,399,091	0	2,399,091	0.00	1.00	0	2,399,091	0.0%	43.4%
Leach chemicals			1,553,552	1,553,552	0.00	1.00	0	1,553,552		
Water in leachate			1,208,318	1,208,318	0.00	1.00	0	1,208,318		
			0	0	0.00	1.00	0	0		
			0	0	0.00	1.00	0	0		
Total Mass	544,562	2,534,689	3,452,337	6,531,587			1,000,079	5,531,508	100.0%	100.0%
Average Density	582	1	903	3			1,600	1.3		
Total Volume	935	1,949,761	3,825	1,954,521			625	4,255,006		
Combined Volatile Constitutents										
Carbon	0	29,452		29,452	0.00	1.00	0	29,452		
Chloride	0	75,086		75,086	0.00	1.00	0	75,086		
Hydrogen	0	3,686		3,686	0.00	1.00	0	3,686		
Oxygen	0	466		466	0.00	1.00	0	466		
Nitrogen	0	34		34	0.00	1.00	0	34		
Combined Combustible Constitutents										
Carbon	63,514	0		63,514	0.00	1.00	0	63,514		
Chloride	226	0		226	0.00	1.00	0	226		
Hydrogen	7,963	0		7,963	0.00	1.00	0	7,963		
Oxygen	52,714	0		52,714	0.00	1.00	0	52,714		
Nitrogen	1,622	0		1,622	0.00	1.00	0	1,622		

List of assumptions:

Repackage for Shipment to WIPP

incoming Streams	TT Bottoms	Drum		Composite Feed	Conversion Factors	Conversion Factors	Repackage WIPP	
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0
Water in steel etc.	0			0	0.00	1.00	0	0
Combustible Debris	0			0	1.00	0.00	0	0
Water in combustibles	0			0	0.00	1.00	0	0
Noncombustible Sludge	7,649			7,649	1.00	0.00	7,649	0
Water in noncombustible sludge	0			0	0.00	1.00	0	0
Oil & VOCs	0			0	1.00	0.00	0	0
Soil	682,818			682,818	1.00	0.00	682,818	0
Water in soil	0			0	0.00	1.00	0	0
Scrub Solution	0			0	1.00	0.00	0	0
Grout	0			0	1.00	0.00	0	0
Drums		200,016		200,016	1.00	0.00	200,016	0
Total Mass	1,000,079	200,016	0	1,200,095			1,200,095	0
Average Density	1,600						1,600	0
Total Volume	625						750	0
Combined Volatile Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	0			0	0.00	1.00	0	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	0			0	0.00	1.00	0	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0

List of assumptions:

Offgas

Incoming Streams Component	TT Offgas Mass (kgs)	Scrub Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Went Mass (kgs)	Blowdown Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0	1.4%	0.0%
Combustible Debris	126,037			126,037	1.00	0.0018	125,811	226	2.3%	0.1%
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	0.6%	0.0%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in noncombustible sludge	26,876			26,876	1.00	0.00	26,876	0	0.5%	0.0%
Oil & VOCs	108,723			108,723	0.31	0.69	33,637	75,086	0.6%	21.3%
Soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in soil	2,399,091			2,399,091	1.00	0.00	2,399,091	0	44.0%	0.0%
Leach chemicals	1,553,552			1,553,552	1.00	0.00	1,553,552	0	28.5%	0.0%
Water in Leachate	1,208,318			1,208,318	1.00	0.00	1,208,318	0	22.1%	0.0%
Sodium in Scrub Solution		50,459		50,459	0.00	1.00	0	50,459	0.0%	14.3%
Water in scrub		226,386		226,386	0.00	1.00	0	226,386	0.0%	64.3%
Total Mass	5,531,508	276,845	0	5,808,353			5,456,196	352,157	100.0%	100.0%
Average Density	1.3	1,200					1.3	1,200		
Total Volume	4,255,006	231					4,197,074	293		
Combined Volatile Constitutents										
Carbon	29,452			29,452	1.00	0.00	29,452	0		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	1.00	0.00	3,686	0		
Oxygen	466			466	1.00	0.00	466	0		
Nitrogen	34			34	1.00	0.00	34	0		
Combined Combustible Constitutents										
Carbon	63,514			63,514	1.00	0.00	63,514	0		
Chloride	226			226	0.00	1.00	0	226		
Hydrogen	7,963			7,963	1.00	0.00	7,963	0		
Oxygen	52,714			52,714	1.00	0.00	52,714	0		
Nitrogen	1,622			1,622	1.00	0.00	1,622	0		

List of assumptions:
Fraction of NaCl in scrub blowdown given the percent NaCl in final stabilized waste (see Stabilize BD) 36%

Stabilize Offgas Scrub

Incoming **Streams** Component	Blowdown Mass (kgs)	Grout Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Stabilized BD Mass (kgs)	Mass (kgs)	
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.00%
Water in steel etc.	0			0	0.00	1.00	0	0	0.00%
Combustible Debris	226			226	1.00	0.00	226	0	0.04%
Water in combustibles	0			0	0.00	1.00	0	0	0.00%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.00%
Water in noncombustible sludge	0			0	0.00	1.00	0	0	0.00%
Oil & VOCs	75,086			75,086	1.00	0.00	75,086	0	14.93%
Soil	0			0	0.00	1.00	0	0	0.00%
Water in soil	0			0	0.00	1.00	0	0	0.00%
Sodium in Scrub Solution	50,459			50,459	1.00	0.00	50,459	0	10.03%
Water in scrub	226,386			226,386	1.00	0.00	226,386	0	45.00%
Grout		150,924		150,924	1.00	0.00	150,924	0	30.00%
									0.00%
Total Mass	352,157	150,924	0	503,081			503,081	0	100.00%
Average Density	1,200	1,510					1,600	0	
Total Volume	293	100					314	0	
Combined Volatile Constitutents									
Carbon	0			0	0.00	1.00	0	0	
Chloride	75,086			75,086	1.00	0.00	75,086	0	
Hydrogen	0			0	0.00	1.00	0	0	
Oxygen	0			0	0.00	1.00	0	0	
Nitrogen	0			0	0.00	1.00	0	0	
Combined Combustible Constitutents									
Carbon	0			0	0.00	1.00	0	0	
Chloride	226			226	1.00	0.00	226	0	
Hydrogen	0			0	0.00	1.00	0	0	
Oxygen	0			0	0.00	1.00	0	0	
Nitrogen	0			0	0.00	1.00	0	0	

List of assumptions:

3. Percent water in stabilized waste	45%
4. Percent grout in stabilized waste	30%
5. Percent NaCl in stabilized waste	25%
6. Percent Cl in stabilized waste	15%

Repackage Stabilized Scrub

Incoming Streams	Stabilized BD Mass (kgs)	Drum Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Repackage BD Mass (kgs)	Mass (kgs)
Component								
Steel non-combustible debris	0			0	1.00	0.00	0	0
Water in steel etc.	0			0	0.00	1.00	0	0
Combustible Debris	226			226	1.00	0.00	226	0
Water in combustibles	0			0	0.00	1.00	0	0
Noncombustible Sludge	0			0	1.00	0.00	0	0
Water in noncombustible sludge	0			0	0.00	1.00	0	0
Oil & VOCs	75,086			75,086	1.00	0.00	75,086	0
Soil	0			0	1.00	0.00	0	0
Water in soil	0			0	0.00	1.00	0	0
Scrub Solution	50,459			50,459	1.00	0.00	50,459	0
Grout	226,386			226,386	1.00	0.00	226,386	0
Water	150,924			150,924	1.00	0.00	150,924	0
Drums		0						
Total Mass	503,081	0	0	503.081			503,081	0
Average Density	1,600						1,600	0
Total Volume	314						314	0
Combined Volatile Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	75,086			75,086	1.00	0.00	75,086	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	226			226	1.00	0.00	226	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0

List of assumptions:

Leach/Recovery

Incoming Streams Component	SE Bottoms Mass (kgs)	Leachant Mass (kgs)	Gas Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Clean Soil Mass (kgs)	Leachate Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%	0.0%
Noncombustible Sludge	76,492			76,492	0.90	0.10	68,842	7,649	0.4%	0.2%
Water in noncombustible sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Oil & VOCs	0			0	0.00	1.00	0	0	0.0%	0.0%
Soil	6,828,182			6,828,182	0.90	0.10	6,145,364	682,818	39.6%	19.8%
Water in soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Leach chemicals		7,767,758		7,767,758	0.80	0.20	6,214,206	1,553,552	40.0%	45.0%
Water in leachant		4,315,421		4,315,421	0.72	0.28	3,107,103	1,208,318	20.0%	35.0%
Total Mass	6,904,6	12,083,179	0	18,987,852			15,535,515	3,452,337	100.0%	100.0%
Average Density	9	1,150					1,712	903		
Total Volume	7,5	10,507					9,077	3,825		
Combined Volatile Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		
Combined Combustible Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		

List of assumptions/multipliers:

1. Fraction of soil and sludge carried from leach/recovery with the leachate	10%
2. Fraction of inlet soil and sludge returned to Pit 9	90%
3. Fraction of leach chemical in leachate from leach/recovery	45%
4. Fraction of water in leachate leach/recovery	35%
5. Fraction of soil/sludge in leachate leach/recovery	20%
6. Fraction of leach chemical in soil/sludge returned to Pit 9	40%
7. Fraction of water in soil/sludge returned to Pit 9	20%
8. Fraction of solids in soil/sludge returned to Pit 9	40%
9. Percent volume increase of clean soil and sludge back to Pit 9	10%
10. Volume increase of leachate plus soil and sludge leach/recovery	30%

Stabilize Clean Soil to Pit 9

Incoming Streams	Clean Soil	Grout		Composite Feed	Conversion Factors	Conversion Factors	Stabilized Soil	
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)
Steel non-combustible debris	0			0	0.00	1.00	0	0
Water in steel etc.	0			0	0.00	1.00	0	0
Combustible Debris	0			0	0.00	1.00	0	0
Water in combustibles	0			0	0.00	1.00	0	0
Noncombustible Sludge	68,842			68,842	1.00	0.00	68,842	0
Water in noncombustible sludge	0			0	0.00	1.00	0	0
Oil & VOCs	0			0	0.00	1.00	0	0
Soil	6,145,364			6,145,364	1.00	0.00	6,145,364	0
Water in soil	0			0	0.00	1.00	0	0
Leach chemical	6,214,206			6,214,206	1.00	0.00	6,214,206	0
Water in leachant	3,107,103			3,107,103	1.00	0.00	3,107,103	0
Grout		3,107,103		3,107,103	1.00	0.00	3,107,103	0
	0							
Total Mass	15,535,515	3,107,103	0	18,642,618			18,642,618	0
Average Density	903	1,510					1,600	0
Total Volume	17,211	2,058					11,652	0
Combined Volatile Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	0			0	0.00	1.00	0	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	0			0	0.00	1.00	0	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0

List of assumptions:

Summary of Disposal

	Disposal at WIPP		Return to Pit 9		Secondary Waste Offsite	
	Weight, kg	Volume, m^3	Weight, kg	Volume, m^3	Weight, kg	Volume, m^3
Assay			9,983,924	9,442		
Stabilized Scrub Solution			503,081	314		
Compacted Thermal Treatment B	1 200,095	750				
Leached Soil/sludge			642,618	11,652		
Organics						
Spent GAC						
Total	1,200,095	750	29,129,623	21,408		

1. Total volume to WPP	750
2. Total volume to Pit 9	21,408
3. Increase in volume returned to Pit 9	113%
4. Volume of secondary waste	0

PIT 9 ALT 4d LEACH ONSITE MELTER.XLS

Assay

incoming Streams	Feed			Composite Feed	Conversion Factors	Conversion Factors	>100 nCi/g	<100nCi/g		
Component	Mass	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)		
Steel non-combustible debris	619,224			619,224	0.50	0.50	309,612	309,612	3.1%	3.1%
Water in steel etc.	154,806			154,806	0.50	0.50	77,403	77,403	0.8%	0.8%
Combustible Debris	252,074			252,074	0.50	0.50	126,037	126,037	1.3%	1.3%
Water in combustibles	63,019			63,019	*0.50*	0.50	31,510	31,510	0.3%	0.3%
Noncombustible Sludge	152,983			152,983	0.50	0.50	76,492	76,492	0.8%	0.8%
Water in noncombustible sludge	53,751			53,751	0.50	0.50	26,876	26,876	0.3%	0.3%
Oil & VOCs	217,445			217,445	0.50	0.50	108,723	108,723	1.1%	1.1%
Soil	13,656,364			13,656,364	0.50	0.50	6,828,182	6,828,182	68.4%	68.4%
Water in soil	4,798,182			4,798,182	0.50	0.50	2,399,091	2,399,091	24.0%	24.0%
Total Mass	19,967,848	0	0	19,967,848			9,983,924	9,983,924	100.0%	100.0%
Average Density	1,057			1,057			1,057	1,057		
Total Volume	18,883			18,883			9,442	9,442		
Combined Volatile Constitutents										
Carbon	58,904			58,904	0.50	0.50	29,452	29,452		
Chloride	150,171			150,171	0.50	0.50	75,086	75,086		
Hydrogen	7,371			7,371	0.50	0.50	3,686	3,686		
Oxygen	932			932	0.50	0.50	466	466		
Nitrogen	67			67	0.50	0.50	34	34		
Combined Combustible Constitutents										
Carbon	127,027			127,027	0.50	0.50	63,514	63,514		
Chloride	452			452	0.50	0.50	226	226		
Hydrogen	15,925			15,925	0.50	0.50	7,963	7,963		
Oxygen	105,427			105,427	0.50	0.50	52,714	52,714		
Nitrogen	3,243			3,243	0.50	0.50	1,622	1,622		

List of assumptions:

Segregate

Incoming Streams	>100 nCi/g			Composite Feed	Conversion Factors	Conversion Factors	>60mm	< 60mm		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)		
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0	56.9%	0.0%
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0	14.2%	0.0%
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0	23.1%	0.0%
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	5.8%	0.0%
Noncombustible Sludge	76,492			76,492	0.00	1.00	0	76,492	0.0%	0.8%
Water in noncombustible sludge	26,876			26,876	0.00	1.00	0	26,876	0.0%	0.3%
Oil & VOCs	108,723			108,723	0.00	1.00	0	108,723	0.0%	1.2%
Soil	6,828,182			6,828,182	0.00	1.00	0	6,828,182	0.0%	72.3%
Water in soil	2,399,091			2,399,091	0.00	1.00	0	2,399,091	0.0%	25.4%
Total Mass	9,983,924	0	0	9,983,924			544,562	9,439,363	100.0%	100.0%
Average Density	1,057			1,057			291	1,248		
Total Volume	9,442			9,442			1,871	7,564		
Combined Volatile Constitutents										
Carbon	29,452			29,452	0.00	1.00	0	29,452		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	0.00	1.00	0	3,686		
Oxygen	466			466	0.00	1.00	0	466		
Nitrogen	34			34	0.00	1.00	0	34		
Combined Combustible Constitutents										
Carbon	63,514			63,514	1.00	0.00	63,514	0		
Chloride	226			226	1.00	0.00	226	0		
Hydrogen	7,963			7,963	1.00	0.00	7,963	0		
Oxygen	52,714			52,714	1.00	0.00	52,714	0		
Nitrogen	1,622			1,622	1.00	0.00	1,622	0		

List of assumptions:

sort

Incoming Streams	>60 mm			Composite Feed	Conversion Factors	Conversion Factors	sort		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	
Steel noncombustible debris	309,612			309,612	1.00	0.00	309,612	0	56.9%
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0	14.2%
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0	23.1%
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	5.8%
Noncombustible Sludge	0			0	1.00	0.00	0	0	0.0%
Water in noncombustible sludge	0			0	1.00	0.00	0	0	0.0%
Oil & VOCs	0			0	1.00	0.00	0	0	0.0%
Soil	0			0	1.00	0.00	0	0	0.0%
Water in Soil	0			0	1.00	0.00	0	0	0.0%
Total Mass	544,562	0	0	544,562			544,562	0	100.0%
Average Density	291			291			291		
Total Volume	1,871			1,871			1,871		
Combined Volatile Constitutents									
Carbon	0			0	0.00	1.00	0	0	
Chloride	0			0	0.00	1.00	0	0	
Hydrogen	0			0	0.00	1.00	0	0	
Oxygen	0			0	0.00	1.00	0	0	
Nitrogen	0			0	0.00	1.00	0	0	
Combined Combustible Constitutents									
Carbon	63,514			63,514	1.00	0.00	63,514	0	
Chloride	226			226	1.00	0.00	226	0	
Hydrogen	7,963			7,963	1.00	0.00	7,963	0	
Oxygen	52,714			52,714	1.00	0.00	52,714	0	
Nitrogen	1,622			1,622	1.00	0.00	1,622	0	

List of assumptions:

Fraction of debris that goes to Shredding	1

Shredding

Incoming Streams	sort			Composite Feed	Conversion Factors	Conversion Factors	Shredded Debris	
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)
Steel noncombustible debris	309,612			309,612	1.00	0.00	309,612	0
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0
Noncombustible Sludge	0			0	0.00	1.00	0	0
Water in noncombustible sludge	0			0	0.00	1.00	0	0
Oil & VOCs	0			0	0.00	1.00	0	0
Soil	0			0	0.00	1.00	0	0
Water in soil	0			0	0.00	1.00	0	0
Total Mass	544,562	0	0	544,562			544,562	0
Average Density	291			291			582	0
Total Volume	1,871			1,871			935	
Combined Volatile Constitutents								
Carbon	0			0	1.00	0.00	0	0
Chloride	0			0	1.00	0.00	0	0
Hydrogen	0			0	1.00	0.00	0	0
Oxygen	0			0	1.00	0.00	0	0
Nitrogen	0			0	1.00	0.00	0	0
Combined Combustible Constitutents								
Carbon	63,514			63,514	1.00	0.00	63,514	0
Chloride	226			226	1.00	0.00	226	0
Hydrogen	7,963			7,963	1.00	0.00	7,963	0
Oxygen	52,714			52,714	1.00	0.00	52,714	0
Nitrogen	1,622			1,622	1.00	0.00	1,622	0

List of assumptions:

Solvent Extraction

incoming Streams	<60 mm			Composite Feed	Conversion Factors	Conversion Factors	Shredded Debris	SE Offgas		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)		
Steel non-combustible debris	0			0	1.00	0.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	1.00	0.00	0	0	0.0%	0.0%
Combustible Debris	0			0	1.00	0.00	0	0	0.0%	0.0%
Water in combustibles	0			0	1.00	0.00	0	0	0.0%	0.0%
Noncombustible Sludge	76,492			76,492	1.00	0.00	76,492	0	1.1%	0.0%
Water in noncombustible sludge	26,876			26,876	0.00	1.00	0	26,876	0.0%	1.1%
Oil & VOCs	108,723			108,723	0.00	1.00	0	108,723	0.0%	4.3%
Soil	6,828,182			6,828,182	1.00	0.00	6,828,182	0	98.9%	0.0%
Water in soil	2,399,091			2,399,091	0.00	1.00	0	2,399,091	0.0%	94.7%
Total Mass	9,439,363	0	0	9,439,363			6,904,674	2,534,689	100.0%	100.0%
Average Density	1,248			1,248			913	1.3		
Total Volume	7,564			7.564			7,564	1,949,761		
Combined Volatile Constitutents										
Carbon	29,452			29,452	0.00	1.00	0	29,452		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	0.00	1.00	0	3,686		
Oxygen	466			466	0.00	1.00	0	466		
Nitrogen	34			34	0.00	1.00	0	34		
Combined Combustible Constitutents										
Carbon	0			0	1.00	0.00	0	0		
Chloride	0			0	1.00	0.00	0	0		
Hydrogen	0			0	1.00	0.00	0	0		
Oxygen	0			0	1.00	0.00	0	0		
Nitrogen	0			0	1.00	0.00	0	0		

List of assumptions:

Melter

Incoming Streams Component	Shredded Debris Mass (kgs)	SE Offgas Mass (kgs)	Leachate Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Melt Mass (kgs)	Offgas Mass (kgs)
Steel non-combustible debris	309,612	0	0	309,612	1.00	0.00	309,612	0
Water in steel etc.	77,403	0	0	77,403	0.00	1.00	0	77,403
Combustible Debris	126,037	0	0	126,037	0.00	1.00	0	126,037
Water in combustibles	31,510	0	0	31,510	0.00	1.00	0	31,510
Noncombustible Sludge	0	0	7,649	7,649	1.00	0.00	7,649	0
Water in noncombustible sludge	0	26,876	0	26,876	0.00	1.00	0	26,876
Oil & VOCs	0	108,723	0	108,723	0.00	1.00	0	108,723
Soil	0	0	682,818	682,818	1.00	0.00	682,818	0
Water in soil	0	2,399,091	0	2,399,091	0.00	1.00	0	2,399,091
			1,553,552	1,553,552	0.00	1.00	0	1,553,552
			1,208,318	1,208,318	0.00	1.00	0	1,208,318
			0	0	0.00	1.00	0	0
			0	0	0.00	1.00	0	0
Total Mass	544,562	2,534,689	3,452,337	6,531,587			1,000,079	5,531,508
Average Density	582	1.3	903				2,128	1.3
Total Volume	935	1,949,761	3,825	1,954,521			470	4,255,006
Combined Volatile Constitutents								
Carbon	0	29,452	0	29,452	0.00	1.00	0	29,452
Chloride	0	75,086	0	75,086	0.00	1.00	0	75,086
Hydrogen	0	3,686	0	3,686	0.00	1.00	0	3,686
Oxygen	0	466	0	466	0.00	1.00	0	466
Nitrogen	0	34	0	34	0.00	1.00	0	34
Combined Combustible Constitutents								
Carbon	63,514	0	0	63,514	0.00	1.00	0	63,514
Chloride	226	0	0	226	0.00	1.00	0	226
Hydrogen	7,963	0	0	7,963	0.00	1.00	0	7,963
Oxygen	52,714	0	0	52,714	0.00	1.00	0	52,714
Nitrogen	1,622	0	0	1,622	0.00	1.00	0	1,622

List of assumptions:

Repackage for Shipment to WIPP

Incoming Streams Component	Melter Product Mass (kgs)	Drum Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Repackage WIPP Mass (kgs)	Mass (kgs)
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0
Water in steel etc.	0			0	0.00	1.00	0	0
Combustible Debris	0			0	1.00	0.00	0	0
Water in combustibles	0			0	0.00	1.00	0	0
Noncombustible Sludge	7,649			7,649	1.00	0.00	7,649	0
Water in noncombustible sludge	0			0	0.00	1.00	0	0
Oil & VOCs	0			0	1.00	0.00	0	0
Soil	682,818			682,818	1.00	0.00	682,818	0
Water in soil	0			0	0.00	1.00	0	0
Scrub Solution				0	1.00	0.00	0	0
Grout				0	1.00	0.00	0	0
Drums		200,016		200,016	1.00	0.00	200,016	0
Total Mass	1,000,079	200,016	0	1,200,095			1,200,095	0
Average Density	2,128						2,128	0
Total Volume	470						564	0
Combined Volatile Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	0			0	0.00	1.00	0	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	0			0	0.00	1.00	0	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0

List of assumptions:

Offgas

Incoming Streams Component	Offgas Mass (kgs)	Scrub Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Vent Mass (kgs)	Blowdown Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0	[illegible].4%	0.0%
Combustible Debris	126,037			126,037	1.00	0.0018	125,81[illegible]	226	2.3%	0.1%
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	0.6%	0.0%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in noncombustible sludge	26,876			26,876	1.00	0.00	26,876	0	0.5%	0.0%
Oil & VOCs	108,723			108,723	0.31	0.69	33,637	75,086	0.6%	21.3%
Soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in soil	2,399,091			2,399,091	1.00	0.00	2,399,091	0	44.0%	0.0%
Leach chemicals	1,553,552			1,553,552	1.00	0.00	1,553,552	0	28.5%	0.0%
Water in Leachate	1,208,318			1,208,318	1.00	0.00	1,208,318	0	22.1%	0.0%
Sodium in Scrub Solution		50,459		50,459	0.00	[illegible].00	0	50,459	0.0%	14.3%
Water in scrub		226,386		226,386	0.00	1.00	0	226,386	0.0%	64.3%
Total Mass	5,531,508	276,845	0	5,808,353			5,456,196	352,157	100.0%	100.0%
Average Density	1.3	1,200					1.3	1,200		
Total Volume	4,255,006	231					4,197,074	293		
Combined Volatile Constitutents										
Carbon	29,452			29,452	1.00	0.00	29,452	0		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	1.00	0.00	3,686	0		
Oxygen	466			466	1.00	0.00	466	0		
Nitrogen	34			34	1.00	0.00	34	0		
Combined Combustible Constitutents										
Carbon	63,514			63,514	1.00	0.00	63,514	0		
Chloride	226			226	0.00	1.00	0	226		
Hydrogen	7,963			7,963	1.00	0.00	7,963	0		
Oxygen	52,714			52,714	1.00	0.00	52,714	0		
Nitrogen	1,622			1,622	1.00	0.00	1,622	0		

List of assumptions:
Fraction of NaCl in scrub blowdown assuming 25% in final stabilized waste 36%

Stabilize Offgas Scrub

Incoming Streams Component	Blowdown Mass (kgs)	Grout Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Stabilized BD Mass (kgs)	Mass (kgs)	
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.00%
Water in steel etc.	0			0	0.00	1.00	0	0	0.00%
Combustible Debris	226			226	1.00	0.00	226	0	0.04%
Water in combustibles	0			0	0.00	1.00	0	0	0.00%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.00%
Water in noncombustible sludge	0			0	0.00	1.00	0	0	0.00%
Oil & VOCs	75,086			75,086	1.00	0.00	75,086	0	14.93%
Soil	0			0	0.00	1.00	0	0	0.00%
Water in soil	0			0	0.00	1.00	0	0	0.00%
Scrub Solution (Na)	50,459			50,459	1.00	0.00	50,459	0	10.03%
Water in scrub	226.386			226,386	1.00	0.00	226,386	0	45.00%
Grout		150,924		150.924	1.00	0.00	150,924	0	30.00%
				0	1.00	0.00	0	0	0.00%
Total Mass	352,157	150,924	0	503,081			503,081	0	100.00%
Average Density	1,200	1,510					1,600	0	
Total Volume	293	100					314	0	
Combined Volatile Constitutents									
Carbon	0			0	0.00	1.00	0	0	
Chloride	75,086			75,086	1.00	0.00	75,086	0	
Hydrogen	0			0	0.00	1.00	0	0	
Oxygen	0			0	0.00	1.00	0	0	
Nitrogen	0			0	0.00	1.00	0	0	
Combined Combustible Constitutents									
Carbon .	0			0	0.00	1.00	0	0	
Chloride	226			226	1.00	0.00	226	0	
Hydrogen	0			0	0.00	1.00	0	0	
Oxygen	0			0	0.00	1.00	0	0	
Nitrogen	0			0	0.00	1.00	0	0	

List of assumptions:

3. Percent water in stabilized waste	45%
4. Percent grout in stabilized waste	30%
5. Percent NaCl in stabilized waste	25%
6. Percent Cl in stabilized waste	15%

Repackage Stabilized Scrub

Incoming Streams Component	Stabilized BD Mass (kgs)	Drum Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Repackage BD Mass (kgs)	Mass (kgs)
Steel non-combustible debris	0			0	1.00	0.00	0	0
Water in steel etc.	0			0	0.00	1.00	0	0
Combustible Debris	226			226	1.00	0.00	226	0
Water in combustibles	0			0	0.00	1.00	0	0
Noncombustible Sludge	0			0	1.00	0.00	0	0
Water in noncombustible sludge	0			0	0.00	1.00	0	0
Oil & VOCs	75,086			75,086	1.00	0.00	75,086	0
Soil	0			0	1.00	0.00	0	0
Water in soil	0			0	0.00	1.00	0	0
Scrub Solution	50,459			50,459	1.00	0.00	50,459	0
Grout	226,386			226,386	1.00	0.00	226,386	0
Water	150,924			150,924	1.00	0.00	150,924	0
Drums	0	0		0	1.00	0.00	0	0
Total Mass	503,081	0	0	503,081			503,081	0
Average Density	1,600						1,600	0
Total Volume	314						314	0
Combined Volatile Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	75,086			75,086	1.00	0.00	75,086	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	226			226	1.00	0.00	226	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0

List of assumptions:

1. Volume increase 20%
2. Weight increase 20%

Leach/Recovery

Incoming Streams Component	SIE Bottoms Mass (kgs)	Leachant Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Clean Soil Mass (kgs)	Leachate Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%	0.0%
Noncombustible Sludge	76,432			76,492	0.90	0.10	68,842	7,649	0.4%	0.2%
Water in noncombustible sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Oil & VOCs	0			0	0.00	1.00	0	0	0.0%	0.0%
Soil	6,828,182			6,828,182	0.90	0.10	6,145,364	682,818	39.6%	19.8%
Water in soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Leach chemicals		7,767,758		7,767,758	0.80	0.20	6,214,206	1,553,552	40.0%	45.0%
Water in leachant		4,315,421		4,315,421	0.72	0.28	3,107,103	1,208,318	20.0%	35.0%
Total Mass	6,904,674	12,083,179	0	18,987,852			15,535,515	3,452,337	100.0%	100.0%
Average Density	913	1,150					1,867	903		
Total Volume	7,564	10,507					8,320	3,825		
Combined Volatile Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		
Combined Combustible Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		

List of assumptions/multipliers:

1. Fraction of soil and sludge carried from leach/recovery with the leachate	0.10
2. Fraction of inlet soil and sludge returned to Pit 9	0.90
3. Fraction of leach chemical in leachate from leach/recovery	0.45
4. Fraction of water in leachate leach/recovery	0.35
5. Fraction of soil/sludge in leachate leach/recovery	0.20
6. Fraction of leach chemical in soil/sludge returned to Pit 9	0.40
7. Fraction of water in soil/sludge returned to Pit 9	0.20
8. Fraction of solids in soil/sludge returned to Pit 9	0.40
9. Percent volume increase of clean soil and sludge back to Pit 9	0.10
10. Volume increase of leachate plus soil and sludge leach/recovery	0.30

Stabilize Clean Soil to Pit 9

Incoming Streams	Clean Soil	Grout		Composite Feed	Conversion Factors	Conversion Factors	Stabilized Soil		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.00%
Water in steel etc.	0			0	0.00	1.00	0	0	0.00%
Combustible Debris	0			0	0.00	1.00	0	0	0.00%
Water in combustibles	0			0	0.00	1.00	0	0	0.00%
Noncombustible Sludge	68,842			68,842	1.00	0.00	68,842	0	0.37%
Water in noncombustible sludge	0			0	0.00	1.00	0	0	0.00%
Oil & VOCs	0			0	1.00	0.00	0	0	0.00%
Soil	6,145,364			6,145,364	1.00	0.00	6,145,364	0	32.96%
Water in soil	0			0	0.00	1.00	0	0	0.00%
Leach chemical	6,214,206			6,214,206	1.00	0.00	6,214,206	0	33.33%
Water in leachant	3,107,103			3,107,103	1.00	0.00	3,107,103	0	16.67%
Grout	0	3,107,103		3,107,103	1.00	0.00	3,107,103	0	16.67%
				0	1.00	0.00	0	0	0.00%
Total Mass	15,535,515	3,107,103	0	18,642,618			18,642,618	0	100.00%
Average Density	1,200	1,510					1,600	0	
Total Volume	12,946	2,058					11,652	0	
Combined Volatile Constitutents									
Carbon	0			0	0.00	1.00	0	0	
Chloride	75,086			75,086	1.00	0.00	75,086	0	
Hydrogen	0			0	0.00	1.00	0	0	
Oxygen	0			0	0.00	1.00	0	0	
Nitrogen	0			0	0.00	1.00	0	0	
Combined Combustible Constitutents									
Carbon	0			0	0.00	1.00	0	0	
Chloride	226			226	1.00	0.00	226	0	
Hydrogen	0			0	0.00	1.00	0	0	
Oxygen	0			0	0.00	1.00	0	0	
Nitrogen	0			0	0.00	1.00	0	0	

List of assumptions:

Summary of Disposal

	Disposal at WIPP		Return to Pit 9		Secondary Waste Offsite	
	Weight, kg	Volume, m^3	Weight, kg	Volume, m^3	Weight, kg	Volume, m^3
Assay			9,983,924	9,442		
Stabilized Scrub Solution			503,081	314		
Glass Product	1,200,095	564				
Clean Soil/sludge			18,642,618	11,652		
Total	1,200,095	564	29,129,623	21,408		

1. Total volume to WPP	564
2. Total volume to Pit 9	21,408
3. Increase in volume returned to Pit 9	113%
4. Volume of secondary waste	0

PIT 9 ALT 5a LEACH DECON OFFSITE.XLS

Assay

Incoming Streams Component	Feed Mass (kgs)	Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	>100 nCi/g Mass (kgs)	<100 nCi/g Mass (kgs)		
Steel non-combustible debris	619,224			619,224	0.50	0.50	309,612	309,612	3.1%	3.1%
Water in steel etc.	154,806			154,806	0.50	0.50	77,403	77,403	0.8%	0.8%
Combustible Debris	252,074			252,074	0.50	0.50	126,037	126,037	1.3%	1.3%
Water in combustibles	63,019			63,019	0.50	0.50	31,510	31,510	0.3%	0.3%
Noncombustible Sludge	152,983			152,983	0.50	0.50	76,492	76,492	0.8%	0.8%
Water in noncombustible sludge	53,751			53,751	0.50	0.50	26,876	26,876	0.3%	0.3%
Oil & VOCs	217,445			217,445	0.50	0.50	108,723	108,723	1.1%	1.1%
Soil	13,656,364			13,656,364	0.50	0.50	6,828,182	6,828,182	68.4%	68.4%
Water in soil	4,798,182			4,798,182	0.50	0.50	2,399,091	2,399,091	24.0%	24.0%
Total Mass	19,967,848	0	0	19,967,848			9,983,924	9,983,924	100.0%	100.0%
Average Density	1,057			1,057			1,057	1,057		
Total Volume	18,883			18.883			9,442	9,442		
Combined Volatile Constitutents										
Carbon	58,904			58,904	0.50	0.50	29,452	29,452		
Chloride	150,171			150,171	0.50	0.50	75,086	75,086		
Hydrogen	7,371			7,371	0.50	0.50	3,686	3,686		
Oxygen	932			932	0.50	0.50	466	466		
Nitrogen	67			67	0.50	0.50	34	34		
Combined Combustible Constitutents										
Carbon	127,027			127,027	0.50	0.50	63,514	63,514		
Chloride	452			452	0.50	0.50	226	226		
Hydrogen	15,925			15,925	0.50	0.50	7,963	7,963		
Oxygen	105,427			105,427	0.50	0.50	52,714	52,714		
Nitrogen	3,243			3.243	0.50	0.50	1,622	1,622		

List of assumptions:

Segregate

Incoming Streams	>100 nCi/g			Composite Feed	Conversion Factors	Conversion Factors	>60mm	< 60mm		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)		
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0	56.9%	0.0%
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0	14.2%	0.0%
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0	23.1%	0.0%
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	5.8%	0.0%
Noncombustible Sludge	76,492			76,492	0.00	1.00	0	76,492	0.0%	0.8%
Water in noncombustible sludge	26,876			26,876	0.00	1.00	0	26,876	0.0%	0.3%
Oil & VOCs	108,723			108,723	0.00	1.00	0	108,723	0.0%	1.2%
Soil	6,828,182			6,828,182	0.00	1.00	0	6,828,182	0.0%	72.3%
Water in soil	2,399,091			2,399,091	0.00	1.00	0	2,399,091	0.0%	25.4%
Total Mass	9,983,924	0	0	9,983,924			544,562	9,439,363	100.0%	100.0%
Average Density	1,057			1,057			291	1,248		
Total Volume	9,442			9,442			1,871	7,564		
Combined Volatile Constitutents										
Carbon	29,452			29,452	0.00	1.00	0	29,452		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	0.00	1.00	0	3,686		
Oxygen	466			466	0.00	1.00	0	466		
Nitrogen	34			34	0.00	1.00	0	34		
Combined Combustible Constitutents										
Carbon	63,514			63,514	1.00	0.00	63,514	0		
Chloride	226			226	1.00	0.00	226	0		
Hydrogen	7,963			7,963	1.00	0.00	7,963	0		
Oxygen	52,714			52,714	1.00	0.00	52,714	0		
Nitrogen	1,622			1,622	1.00	0.00	1,622	0		

List of assumptions:

1. Fraction of debris that goes to Shredding including associated water — 100%

2. Fraction of sludge, oil/VOC, and soil that does not get shredded (including associated water) — 100%

sort

Incoming Streams	>60 mm			Composite Feed	Conversion Factors	Conversion Factors	sort		
Component	Mass	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0	56.9%
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0	14.2%
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0	23.1%
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	**5.8%**
Noncombustible Sludge	0			0	1.00	0.00	0	0	0.0%
Water in noncombustible sludge	0			0	1.00	0.00	0	0	0.0%
Oil & VOCs	0			0	1.00	0.00	0	0	0.0%
Soil	0			0	1.00	0.00	0	0	0.0%
Water in Soil	0			0	1.00	0.00	0	0	0.0%
Total Mass	544,562	0	0	544,562			544,562	0	100.0%
Average Density	291			291			291		
Total Volume	1,871			1,871			1,871		
Combined Volatile Constitutents									
Carbon	0			0	0.00	1.00	0	0	
Chloride	0			0	0.00	1.00	0	0	
Hydrogen	0			0	0.00	1.00	0	0	
Oxygen	0			0	0.00	1.00	0	0	
Nitrogen	0			0	0.00	1.00	0	0	
Combined Combustible Constitutents									
Carbon	63,514			63,514	1.00	0.00	63,514	0	
Chloride	226			226	1.00	0.00	226	0	
Hydrogen	7,963			7,963	1.00	0.00	7,963	0	
Oxygen	52,714			52,714	1.00	0.00	52,714	0	
Nitrogen	1,622			1,622	1.00	0.00	1,622	0	

List of assumptions:

Fraction of debris that goes to Shredding 1

Shredding

Incoming Streams	sort			Composite Feed	Conversion Factors	Conversion Factors	Shredded Debris	
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass	Mass (kgs)	Mass (kgs)
Steel noncombustible debris	309,612			309,612	1.00	0.00	309,612	0
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0
Noncombustible Sludge	0			0	0.00	1.00	0	0
Water in noncombustible sludge	0			0	0.00	1.00	0	0
Oil & VOCs	0			0	0.00	1.00	0	0
Soil	0			0	0.00	1.00	0	0
Water in soil	0			0	0.00	1.00	0	0
Total Mass	544,562	0	0	544,562			544,562	0
Average Density	291			291			582	0
Total Volume	1,871			1,871			935	
Combined Volatile Constitutents								
Carbon	0			0	1.00	0.00	0	0
Chloride	0			0	1.00	0.00	0	0
Hydrogen	0			0	1.00	0.00	0	0
Oxygen	0			0	1.00	0.00	0	0
Nitrogen	0			0	1.00	0.00	0	0
Combined Combustible Constitutents								
Carbon	63,514			63,514	1.00	0.00	63,514	0
Chloride	226			226	1.00	0.00	226	0
Hydrogen	7,963			7,963	1.00	0.00	7,963	0
Oxygen	52,714			52,714	1.00	0.00	52,714	0
Nitrogen	1,622			1,622	1.00	0.00	1,622	0

List of assumptions:

Decon DebrislRecovery

Incoming Streams Component	Shredded Debris Mass (kgs)	Decon Solution Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Decon Debris Mass (kgs)	Decon Leachate Mass (kgs)		
Steel noncombustible debris	309,612			309,612	0.85	0.15	263,170	46,442	28.4%	17.8%
Water in steel etc.	77,403			77,403	0.85	0.15	65,793	11,610	7.1%	4.4%
Combustible Debris	126,037			126,037	0.85	0.15	107,131	18,906	11.6%	7.2%
Water in combustibles	31,510			31,510	0.85	0.15	26,783	4,726	2.9%	1.8%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in noncombustible sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Oil & VOCs	0			0	0.00	1.00	0	0	0.0%	0.0%
Soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Decon chemicals		157,923		157,923			92,575	65,347	10.0%	25.0%
Water in decon solution		484.659		484,659			370,301	114,358	40.0%	43.7%
Total Mass	544,562	642.582	0	1,187,144			925,754	261,389	100.0%	100.0%
Average Density	582	1,150					582	1,150		
Total Volume	935	559					1,590	227		
Combined Volatile Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		
Combined Combustible Constitutents										
Carbon	63,514			63,514	0.85	0.15	53,986	9,527		
Chloride	226			226	0.85	0.15	192	34		
Hydrogen	7,963			7,963	0.85	0.15	6.768	1,194		
Oxygen	52,714			52,714	0.85	0.15	44.806	7,907		
Nitrogen	1,622			1.622	0.85	0.15	1,378	243		

List of assumptions/multipliers:

1. Fraction of soil and sludge carried from deconlrecovery with the decon leachate	15%
2. Fraction of inlet debris returned to Pit 9	85%
3. Fraction of leach chemical in decon leachate from deconlrecovery	25%
4. Fraction of water in leachate from decon/recovery	50%
5. Fraction of debris in leachate from decon/recovery	25%
6. Fraction of leach chemical in debris returned to Pit 9	10%
7. Fraction of water in debris returned to Pit 9	50%
8. Fraction of solids in debris returned to Pit 9	40%
9. Percent weight increase of clean debris back to Pit 9	10%

Repackage for Return to Pit 9

Incoming Streams	Decon Debris	Drum		Composite Feed	Conversion Factors	Conversion Factors	Repackage	
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)
Steel non-combustible debris	263,170			263,170	1.00	0.00	263,170	0
Water in steel etc.	65,793			65,793	1.00	0.00	65,793	0
Combustible Debris	107,131			107,131	1.00	0.00	107,131	0
Water in combustibles	26,783			26,783	1.00	0.00	26,783	0
Noncombustible Sludge	0			0	0.00	1.00	0	0
Water in noncombustible sludge	0			0	0.00	1.00	0	0
Oil & VOCs	0			0	0.00	1.00	0	0
Soil	0			0	0.00	1.00	0	0
Water in soil	0			0	0.00	1.00	0	0
Decon chemicals	92,575			92,575	1.00	0.00	92,575	0
Water in decon solution	370,301			370,301	1.00	0.00	370,301	0
Drums		0		0	1.00	0.00	0	0
Total Mass	925,754	0	0	925,754			925,754	0
Average Density	582						582	0
Total Volume	1,590						1,590	0
Combined Volatile Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	0			0	0.00	1.00	0	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	53,986			53,986	1.00	0.00	53,986	0
Chloride	192			192	1.00	0.00	192	0
Hydrogen	6,768			6,768	1.00	0.00	6,768	0
Oxygen	44,806			44,806	1.00	0.00	44,806	0
Nitrogen	1,378			1,378	1.00	0.00	1,378	0

List of assumptions:

Thermal Desorption

Incoming Streams Component	<60 mm Mass (kgs)	Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	TD Bottoms Mass (kgs)	TD Offgas Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%	0.0%
Noncombustible Sludge	76,492			76,492	1.00	0.00	76,492	0	1.1%	0.0%
Water in noncombustible sludge	26,876			26,876	0.00	1.00	0	26,876	0.0%	1.1%
Oil & VOCs	108,723			108,723	0.00	1.00	0	108,723	0.0%	4.3%
Soil	6,828,182			6,828,182	1.00	0.00	6,828,182	0	98.9%	0.0%
Water in soil	2,399,091			2,399,091	0.00	1.00	0	2,399,091	0.0%	94.7%
Total Mass	9,439,363	0	0	9,439,363			6,904,674	2,534,689	100.0%	100.0%
Average Density	1,248			1,248			913	1.3		
Total Volume	7,564			7,564			7,564	1,949,761		
Combined Volatile Constitutents										
Carbon	29,452			29,452	0.00	1.00	0	29,452		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	0.00	1.00	0	3,686		
Oxygen	466			466	0.00	1.00	0	466		
Nitrogen	34			34	0.00	1.00	0	34		
Combined Combustible Constitutents										
Carbon	0			0	1.00	0.00	0	0		
Chloride	0			0	1.00	0.00	0	0		
Hydrogen	0			0	1.00	0.00	0	0		
Oxygen	0			0	1.00	0.00	0	0		
Nitrogen	0			0	1.00	0.00	0	0		

List of assumptions:

Condenser

Incoming Streams Component	TD Offgas Mass (kgs)	Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Neet Organic Mass (kgs)	Condensate Water Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%	0.0%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in noncombustible sludge	26,876			26,876	0.00	1.00	0	26,876	0.0%	1.1%
Oil & VOCs	108,723			108,723	0.90	0.10	97,850	10,872	100.0%	0.4%
Soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in soil	2,399,091			2,399,091	0.00	1.00	0	2,399,091	0.0%	98.5%
	0									
	0									
	0									
	0									
Total Mass	2,534,689	0	0	2,534,689			97,850	2,436,839	100.0%	100.0%
Average Density	1						1,200	1,200		
Total Volume	1,949,761						82	2,031		
Combined Volatile Constitutents										
Carbon	29,452			29,452	0.90	0.10	26,507	2,945		
Chloride	75,086			75,086	0.90	0.10	67,577	7,509		
Hydrogen	3,686			3,686	0.90	0.10	3,317	369		
Oxygen	466			466	0.90	0.10	419	47		
Nitrogen	34			34	0.90	0.10	30	3		
Combined Combustible Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		

List of assumptions:

Fraction of incoming water and organics that passes to the condensor	100%
Fraction of the incoming organics that partition to the water condensate	10%
Fraction of the incoming organics sent to an offsite vendor	90%

Activated Carbon

Incoming Streams Component	Condensate Water Mass (kgs)	GAC Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Pond Mass (kgs)	Spent GAC Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%	0.0%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in noncombustible sludge	26,876			26,876	1.00	0.00	26,767	108	1.1%	0.2%
Oil & VOCs	10,872			10,872	0.10	0.90	1,087	9,785	0.0%	14.3%
Soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in soil	2,399,091			2,399,091	1.00	0.00	2,389,414	9,677	98.8%	14.1%
Total water on GAC	0							9,785	0.0%	14.3%
GAC	0	48,925		48,925	0.00	1.00	0	48.925	0.0%	71.4%
	0									
	0									
Total Mass	2,436,839	48,925	0	2,485,764			2,417,269	68,495	100.0%	100.0%
Average Density	1,200						1,200	500		
Total Volume	2,031						2,014	137		
Combined Volatile Constitutents										
Carbon	2,945			2,945	0.10	0.90	295	2,651		
Chloride	7,509			7,509	0.10	0.90	751	6,758		
Hydrogen	369			369	0.10	0.90	37	332		
Oxygen	47			47	0.10	0.90	5	42		
Nitrogen	3			3	0.10	0.90	0	3		
Combined Combustible Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		

List of assumptions:

1. Fraction of water to the pond =	0.996
2. Fraction of organics to the pond	10%
2. Fraction of inlet organics adsorbed by GAC =	90%
4. Adsorption capacity of organic on GAC, kg orglkg C	0.20
5. Adsorption capacity of water on GAC kg H2O/kg C	0.20

Activated Carbon Regeneration

Input Values
Paste in from prior sheets
Calculated Values

Incoming Streams Component	Spent GAC Mass (kgs)	Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Product 1 Conversion Factors Mass (kgs)	Product 2 Conversion Factors Mass (kgs)	Offsite Organics Mass (kgs)	Clean GAC Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%	0.0%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in noncombustible sludge	108			108	1.00	0.00	108	0	0.4%	0.0%
Oil & VOCs	9,785			9,785	1.00	0.00	9,785	0	33.3%	0.0%
Soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in soil	9,677			9,677	1.00	0.00	9,677	0	33.0%	0.0%
Total water on GAC	9,785			9,785	1.00	0.00	9,785	0	33.3%	0.0%
GAC	48,925			48,925	0.00	1.00	0	48.925	0.0%	100.0%
	0									
	0									
Total Mass	78,280	0	0	78,280			29,355	48,925	100.0%	100.0%
Average Density	500						1,200	500		
Total Volume	157						24	98		
Combined Volatile Constitutents										
Carbon	2,651			2,651	1.00	0.00	2,651	0		
Chloride	6,758			6,758	1.00	0.00	6,758	0		
Hydrogen	332			332	1.00	0.00	332	0		
Oxygen	42			42	1.00	0.00	42	0		
Nitrogen	3			3	1.00	0.00	3	0		
Combined Combustible Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		

List of assumptions:
1. All volatile material goes offsite

Leach/Recovery

Incoming Streams Component	TD Bottoms Mass (kgs)	Leachant Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Clean Soil Mass (kgs)	Leachate Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%	0.0%
Noncombustible Sludge	76,492			76,492	0.90	0.10	68,842	7,649	0.4%	0.2%
Water in noncombustible sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Oil & VOCs	0			0	0.00	1.00	0	0	0.0%	0.0%
Soil	6,828,182			6,828.182	0.90	0.10	6,145,364	682,818	39.6%	19.8%
Water in soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Leach chemicals		7,767,758		7,767,758	0.80	0.20	6,214,206	1,553,552	40.0%	45.0%
Water in leachant		4,315,421		4,315,421	0.72	0.28	3,107,103	1,208,318	20.0%	35.0%
									0.0%	
Total Mass	6,904,674	12,083,179	0	18,987,852			15,535,515	3,452,337	100.0%	100.0%
Average Density	913	1,150					1,867	903		
Total Volume	7,564	10,507					8,320	3,825		
Combined Volatile Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		
Combined Combustible Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		

List of assumptions/multipliers:

1. Fraction of soil and sludge carried from leachlrecovery with the leachate	0.10
2. Fraction of inlet soil and sludge returned to Pit 9	0.90
3. Fraction of leach chemical in leachate from leach/recovery	0.45
4. Fraction of water in leachate leachlrecovery	0.35
5. Fraction of soillsludge in leachate leachlrecovery	0.20
6. Fraction of leach chemical in soil/sludge returned to Pit 9	0.40
7. Fraction of water in soil/sludge returned to Pit 9	0.20
8. Fraction of solids in soil/sludge returned to Pit 9	0.40
9. Percent volume increase of clean soil and sludge back to Pit 9	0.10
10. Volume increase of leachate plus soil and sludge leach/recovery	0.30

Stabilize Soil

Incoming Streams	Clean Soil	Grout		Composite Feed	Conversion Factors	Conversion Factors	Stabilized Soil		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	
Steel non-combustible debris	0			0	1.00	0.00	0	0	0.00%
Water in steel etc.	0			0	1.00	0.00	0	0	0.00%
Combustible Debris	0			0	1.00	0.00	0	0	0.00%
Water in combustibles	0			0	1.00	0.00	0	0	0.00%
Noncombustible Sludge	68,842			68,842	1.00	0.00	68,842	0	0.37%
Water in noncombustible sludge	0			0	0.00	1.00	0	0	0.00%
Oil & VOCs	0			0	0.00	1.00	0	0	0.00%
Soil	6,145,364			6,145,364	1.00	0.00	6,145,364	0	32.96%
Water in soil	0			0	0.00	1.00	0	0	0.00%
Leach chemical	6,214,206			6,214,206	1.00	0.00	6,214,206	0	33.33%
Water in leachant	3,107,103			3,107,103	1.00	0.00	3,107,103	0	16.67%
Grout	0	3,107,103		3,107,103	1.00	0.00	3,107,103	0	16.67%
	0								0.00%
Total Mass	15,535,515	3,107,103	0	18,642,618			18,642,618	0	100.00%
Average Density	903	1,510					1,600	0	
Total Volume	17,211	2,058					11.652	0	
Combined Volatile Constitutents									
Carbon	0			0	0.00	1.00	0	0	
Chloride	0			0	0.00	1.00	0	0	
Hydrogen	0			0	0.00	1.00	0	0	
Oxygen	0			0	0.00	1.00	0	0	
Nitrogen	0			0	0.00	1.00	0	0	
Combined Combustible Constitutents									
Carbon	0			0	1.00	0.00	0	0	
Chloride	0			0	1.00	0.00	0	0	
Hydrogen	0			0	1.00	0.00	0	0	
Oxygen	0			0	1.00	0.00	0	0	
Nitrogen	0			0	1.00	0.00	0	0	

List of assumptions:

Stabilize Leachate from Soil Leach and Debris Decon

Incoming Streams	Leachate	Grout	Decon Leachate	Composite Feed	Conversion Factors	Conversion Factors	Stabilized Leachate		
	Mass	Mass	Mass	Mass	Mass	Mass	Mass	Mass	
Component		(kgs)	(kgs)	(kgs)	(kgs)	(kgs)	(kgs)	(kgs)	
Steel non-combustible debris	0		46,442	46,442	1.00	0.00	46,442	0	1.0%
Water in steel etc.	0		11,610	11,610	1.00	0.00	11,610	0	0.3%
Combustible Debris	0		18,906	18,906	1.00	0.00	18,906	0	0.4%
Water in combustibles	0		4,726	4,726	1.00	0.00	4,726	0	0.1%
Noncombustible Sludge	7,649		0	7,649	1.00	0.00	7,649	0	0.2%
Water in noncombustible sludge	0		0	0	0.00	1.00	0	0	0.0%
Oil & VOCs	0		0	0	0.00	1.00	0	0	0.0%
Soil	682,818		0	682,818	1.00	0.00	682,818	0	15.3%
Water in soil	0		0	0	0.00	1.00	0	0	0.0%
Leach chemical	1,553,552		65,347	1,618,899	1.00	0.00	1,618,899	0	36.3%
Water in leachant	1,208,318		114,358	1,322,676	1.00	0.00	1,322,676	0	29.7%
Grout		742.745		742,745	1.00	0.00	742,745	0	16.7%
									0.0%
Total Mass	3,452,337	742,745	261,389	4,456,471			4,456,471	0	100.0%
Average Density	903	1,510	1,150				1,600	0	
Total Volume	3,825	492	227				2,785	0	
Combined Volatile Constitutents									
Carbon	0		0	0	0.00	1.00	0	0	
Chloride	0		0	0	0.00	1.00	0	0	
Hydrogen	0		0	0	0.00	1.00	0	0	
Oxygen	0		0	0	0.00	1.00	0	0	
Nitrogen	0		0	0	0.00	1.00	0	0	
Combined Combustible Constitutents									
Carbon	0		9,527	9,527	1.00	0.00	9,527	0	
Chloride	0		34	34	1.00	0.00	34	0	
Hydrogen	0		1,194	1,194	1.00	0.00	1,194	0	
Oxygen	0		7,907	7,907	1.00	0.00	7,907	0	
Nitrogen	0		243	243	1.00	0.00	243	0	

List of assumptions:

Repackage

Incoming Streams Component	Stabilized **Leachate** Mass (kgs)	Drum Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	**Repackage** Mass (kgs)	Mass (kgs)
Steel non-combustibledebris	46,442			46,442	1.00	0.00	46,442	0
Water in steel etc.	11,610			11,610	1.00	0.00	11,610	0
Combustible Debris	18,906			18,906	1.00	0.00	18,906	0
Water in combustibles	4,726			4,726	1.00	0.00	4,726	0
Noncombustible Sludge	7,649			7,649	1.00	0.00	7,649	0
Water in noncombustiblesludge	0			0	1.00	0.00	0	0
Oil & VOCs	0			0	1.00	0.00	0	0
Soil	682,818			682,818	1.00	0.00	682,818	0
Water in soil	0			0	1.00	0.00	0	0
Leach chemical	1,618,899			1,618,899	1.00	0.00	1,618,899	0
Water in leachant	1,322,676			1,322,676	1.00	0.00	1,322,676	0
Grout	742,745			742,745	1.00	0.00	742,745	0
Drums		891,294		891,294	1.00	0.00	891,294	0
Total Mass	4,456,471	891,294		5,347,766			5,347,766	0
Average Density	1,600						1,600	
Total Volume	2,785						3,342	
Combined Volatile Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	0			0	0.00	1.00	0	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	9,527			9,527	1.00	0.00	9,527	0
Chloride	34			34	1.00	0.00	34	0
Hydrogen	1,194			1,194	1.00	0.00	1,194	0
Oxygen	7,907			7,907	1.00	0.00	7,907	0
Nitrogen	243			243	1.00	0.00	243	0

List of assumptions:

1. Percent increase in volume to Repackage debris	20%
2. Percent increase in weight to Repackage debris	20%
3. Percent increase in volume to repackage sludge/soil/grout	20%
4. Percent increase in weight to repackage sludge/soil/grout	20%

Summary of Disposal

	Disposal at WIPP		Return to Pit 9		Offsite Treatment/Disposal	
	Weight, kg	Volume, m^3	Weight, kg	Volume, m^3	Weight, kg	Volume, m^4
Assay			9,983,924	9,442		
Stabilized Leach and Decon Leachate	5,347,766	3,342				
Stabilized Clean Soil/sludge			18,642,618	11,652		
Clean Debris Return to Pit			925,754	1,590		
GAC					48,925	8
Organics					127,205	6
Total	5,347,766	3,342	29,552,297	22,683	176,130	204

1. Total volume to WPP	3,342
2. Total volume to Pit 9	22,683
3. Increase in volume returned to Pit 9	120%
4. Volume of secondary waste	204

PIT 9 ALT 5b LEACH DECON ONSITE TD.XLS

Assay

Incoming Streams Component	Feed Mass (kgs)	Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	>100 nCi/g Mass (kgs)	<100 nCi/g Mass (kgs)		
Steel non-combustibledebris	619,224			619,224	0.50	0.50	309,612	309,612	3.1%	3.1%
Water in steel etc.	154,806			154,806	0.50	0.50	77,403	77,403	0.8%	0.8%
Combustible Debris	252,074			252,074	0.50	0.50	126,037	126,037	1.3%	1.3%
Water in combustibles	63,019			63,019	0.50	0.50	31,510	31,510	0.3%	0.3%
Noncombustible Sludge	152,983			152,983	0.50	0.50	76,492	76,492	0.8%	0.8%
Water in noncombustible sludge	53,751			53,751	0.50	0.50	26,876	26,876	0.3%	0.3%
Oil & VOCs	217,445			217,445	0.50	0.50	108,723	108,723	1.1%	1.1%
Soil	13,656,364			13,656,364	0.50	0.50	6,828,182	6,828,182	68.4%	68.4%
Water in soil	4,798,182			4,798,182	0.50	0.50	2,399,091	2,399,091	24.0%	24.0%
Total Mass	19,967,848	0	0	19,967,848			9,983,924	9,983.924	100.0%	100.0%
Average Density	1,057			1,057			1,057	1,057		
Total Volume	18,883			18,883			9,442	9,442		
Combined Volatile Constitutents										
Carbon	58,904			58,904	**0.50**	**0.50**	29,452	29,452		
Chloride	150,171			150,171	**0.50**	**0.50**	75,086	75,086		
Hydrogen	7,371			7,371	**0.50**	**0.50**	3,686	3,686		
Oxygen	932			932	**0.50**	**0.50**	466	466		
Nitrogen	67			67	**0.50**	**0.50**	34	34		
Combined Combustible Constitutents										
Carbon	127,027			127,027	**0.50**	**0.50**	63,514	63,514		
Chloride	452			452	**0.50**	**0.50**	226	226		
Hydrogen	15,925			15,925	**0.50**	**0.50**	7,963	7,963		
Oxygen	105,427			105,427	**0.50**	**0.50**	52,714	52,714		
Nitrogen	3,243			3,243	**0.50**	**0.50**	1,622	1,622		

List of assumptions:

Segregate

Incoming Streams	>100 nCi/g Mass	Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	>60mm Mass (kgs)	< 60mm Mass (kgs)		
Component										
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0	56.9%	0.0%
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0	14.2%	0.0%
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0	23.1%	0.0%
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	5.8%	0.0%
Noncombustible Sludge	76,492			76,492	0.00	1.00	0	76,492	0.0%	0.8%
Water in noncombustible sludge	26,876			26,876	0.00	1.00	0	26,876	0.0%	0.3%
Oil & VOCs	108,723			108,723	0.00	1.00	0	108,723	0.0%	1.2%
Soil	6,828,182			6,828,182	0.00	1.00	0	6,828,182	0.0%	72.3%
Water in soil	2,399,091			2,399,091	0.00	1.00	0	2,399,091	0.0%	25.4%
Total Mass	9,983,924	0	0	9,983,924			544,562	9,439,363	100.0%	100.0%
Average Density	1,057			1,057			291	1,248		
Total Volume	9,442			9.442			1,871	7,564		
Combined Volatile Constitutents										
Carbon	29,452			29,452	0.00	1.00	0	29,452		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	0.00	1.00	0	3,686		
Oxygen	466			466	0.00	1.00	0	466		
Nitrogen	34			34	0.00	1.00	0	34		
Combined Combustible Constitutents										
Carbon	63,514			63,514	1.00	0.00	63,514	0		
Chloride	226			226	1.00	0.00	226	0		
Hydrogen	7,963			7,963	1.00	0.00	7,963	0		
Oxygen	52,714			52,714	1.00	0.00	52,714	0		
Nitrogen	1,622			1,622	1.00	0.00	1,622	0		

List of assumptions:

1. Fraction of debris that goes to Shredding including associated water — 100%

2. Fraction of sludge, oil/VOC, and soil that does not get shredded (including associated water) — 100%

sort

incoming Streams	>60 mm			Composite Feed	Conversion Factors	Conversion Factors	sort		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass	Mass (kgs)	Mass (kgs)	
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0	56.9%
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0	14.2%
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0	23.1%
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	5.8%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.0%
Water in noncombustible sludge	0			0	0.00	1.00	0	0	0.0%
Oil & VOCs	0			0	0.00	1.00	0	0	0.0%
Soil	0			0	0.00	1.00	0	0	0.0%
Water in Soil	0			0	0.00	1.00	0	0	0.0%
Total Mass	544,562	0	0	544,562			544,562	0	100.0%
Average Density	291			291			291		
Total Volume	1,871			1,871			1,871		
Combined Volatile Constitutents									
Carbon	0			0	1.00	0.00	0	0	
Chloride	0			0	1.00	0.00	0	0	
Hydrogen	0			0	1.00	0.00	0	0	
Oxygen	0			0	1.00	0.00	0	0	
Nitrogen	0			0	1.00	0.00	0	0	
Combined Combustible Constitutents									
Carbon	63,514			63,514	1.00	0.00	63,514	0	
Chloride	226			226	1.00	0.00	226	0	
Hydrogen	7,963			7,963	1.00	0.00	7,963	0	
Oxygen	52,714			52,714	1.00	0.00	52,714	0	
Nitrogen	1,622			1,622	1.00	0.00	1,622	0	

List of assumptions:

Shredding

Incoming Streams	sort			Composite Feed	Conversion Factors	Conversion Factors	Shredded Debris	
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0
Noncombustible Sludge	0			0	0.00	1.00	0	0
Water in noncombustible sludge	0			0	0.00	1.00	0	0
Oil & VOCs	0			0	0.00	1.00	0	0
Soil	0			0	0.00	1.00	0	0
Water in soil	0			0	0.00	1.00	0	0
Total Mass	544,562	0	0	544,562			544,562	0
Average Density	291			291			582	0
Total Volume	1,871			1,871			935	
Combined Volatile Constitutents								
Carbon	0			0	1.00	0.00	0	0
Chloride	0			0	1.00	0.00	0	0
Hydrogen	0			0	1.00	0.00	0	0
Oxygen	0			0	1.00	0.00	0	0
Nitrogen	0			0	1.00	0.00	0	0
Combined Combustible Constitutents								
Carbon	63,514			63,514	1.00	0.00	63,514	0
Chloride	226			226	1.00	0.00	226	0
Hydrogen	7,963			7,963	1.00	0.00	7,963	0
Oxygen	52,714			52,714	1.00	0.00	52,714	0
Nitrogen	1,622			1,622	1.00	0.00	1,622	0

List of assumptions:

Decon DebrislRecovery

Incoming Streams Component	Shredded Debris Mass (kgs)	Decon Solution Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Deconned Debris Mass (kgs)	Decon Leachate Mass (kgs)		
Steel noncombustible debris	309,612			309,612	0.85	0.15	263,170	46.442	28.4%	17.8%
Water in steel etc.	77,403			77,403	0.85	0.15	65,793	11,610	7.1%	4.4%
Combustible Debris	126,037			126,037	0.85	0.15	107,131	18,906	11.6%	7.2%
Water in combustibles	31,510			31.510	0.85	0.15	26,783	4,726	2.9%	1.8%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in noncombustible sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Oil & VOCs	0			0	0.00	1.00	0	0	0.0%	0.0%
Soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Decon chemicals		157,923		157,923			92,575	65,347	10.0%	25.0%
Water in decon solution		484,659		484,659			370,301	114,358	40.0%	43.7%
Total Mass	544,562	642,582	0	1,187,144			925,754	261,389	100.0%	100.0%
Average Density	582	1,150					582	1,150		
Total Volume	935	559					1.590	227		
Combined Volatile Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		
Combined Combustible Constitutents										
Carbon	63,514			63,514	0.85	0.15	53,986	9,527		
Chloride	226			226	0.85	0.15	192	34		
Hydrogen	7,963			7,963	0.85	0.15	6,768	1,194		
Oxygen	52.714			52,714	0.85	0.15	44,806	7,907		
Nitrogen	1,622			1,622	0.85	0.15	1,378	243		

List of **assumptionslmultipliers:**

1. Fraction of soil and sludge carried from decon/recovery with the decon leachate	15%
2. Fraction of inlet debris returned to Pit 9	85%
3. Fraction of leach chemical in decon leachate from decon/recovery	25%
4. Fraction of water in leachate from deconlrecovery	50%
5. Fraction of debris in leachate from deconlrecovery	25%
6. Fraction of leach chemical in debris returned to Pit 9	10%
7. Fraction of water in debris returned to Pit 9	50%
8. Fraction of solids in debris returned to Pit 9	40%
9. Percent weight increase of clean debris back to Pit 9	10%
10. Volume increase of leachate plus debris to Recovery	30%

Repackage for Return to Pit 9

Incoming Streams	Deconned Debris	Drum		Composite Feed	Conversion Factors	Conversion Factors	Repackaged Debris	
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)
Steel non-combustible debris	263,170			263,170	1.00	0.00	263,170	0
Water in steel etc.	65,793			65,793	1.00	0.00	65,793	0
Combustible Debris	107,131			107,131	1.00	0.00	107,131	0
Water in combustibles	26,783			26,783	1.00	0.00	26,783	0
Noncombustible Sludge	0			0	0.00	1.00	0	0
Water in noncombustible sludge	0			0	0.00	1.00	0	0
Oil & VOCs	0			0	0.00	1.00	0	0
Soil	0			0	0.00	1.00	0	0
Water in soil	0			0	0.00	1.00	0	0
Decon chemicals	92,575			92,575	1.00	0.00	92,575	0
Water in decon solution	370,301			370,301	1.00	0.00	370,301	0
Drums		0		0	1.00	0.00	0	0
Total Mass	925,754	0	0	925,754			925,754	0
Average Density	582						582	0
Total Volume	1,590						1,590	0
Combined Volatile Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	0			0	0.00	1.00	0	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	53,986			53,986	1.00	0.00	53,986	0
Chloride	192			192	1.00	0.00	192	0
Hydrogen	6,768			6,768	1.00	0.00	6,768	0
Oxygen	44,806			44,806	1.00	0.00	44,806	0
Nitrogen	1,378			1,378	1.00	0.00	1,378	0

List of assumptions:

Thermal Desorption

incoming Streams	<60 mm			Composite Feed	Conversion Factors	Conversion Factors	TD Bottoms	TD Offgas		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)		
Steel non-combustible debris	0			0	1.00	0.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	1.00	0.00	0	0	0.0%	0.0%
Combustible Debris	0			0	1.00	0.00	0	0	0.0%	0.0%
Water in combustibles	0			0	1.00	0.00	0	0	0.0%	0.0%
Noncombustible Sludge	76,492			76,492	1.00	0.00	76,492	0	1.1%	0.0%
Water in noncombustible sludge	26,876			26,876	0.00	1.00	0	26,876	0.0%	1.1%
Oil & VOCs	108,723			108,723	0.00	1.00	0	108,723	0.0%	4.3%
Soil	6,828,182			6,828,182	1.00	0.00	6,828,182	0	98.9%	0.0%
Water in soil	2,399,091			2,399,091	0.00	1.00	0	2,399,091	0.0%	94.7%
Total Mass	9,439,363	0	0	9,439,363			6,904,674	2,534,689	100.0%	100.0%
Average Density	1,248			1,248			913	1.3		
Total Volume	7,564			7,564			7,564	1,949,761		
Combined Volatile Constitutents										
Carbon	29,452			29,452	0.00	1.00	0	29,452		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	0.00	1.00	0	3,686		
Oxygen	466			466	0.00	1.00	0	466		
Nitrogen	34			34	0.00	1.00	0	34		
Combined Combustible Constitutents										
Carbon	0			0	1.00	0.00	0	0		
Chloride	0			0	1.00	0.00	0	0		
Hydrogen	0			0	1.00	0.00	0	0		
Oxygen	0			0	1.00	0.00	0	0		
Nitrogen	0			0	1.00	0.00	0	0		

List of assumptions:

Offgas with Thermal Destruction

Incoming Streams	TD Offgas	Scrub Solution		Composite Feed	Conversion Factors	Conversion Factors	Vent	Blowdown		
	Mass	Mass	Mass	Mass	Mass	Mass	Mass	Mass		
Component	(kgs)	(kgs)	(kgs)	(kgs)	(kgs)	(kgs)	(kgs)	(kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%	0.0%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in noncombustible sludge	26,876			26,876	1.00	0.00	26,876	0	1.1%	0.0%
Oil & VOCs	108,723			108,723	0.31	0.69	33,637	75,086	1.4%	21.4%
Soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in soil	2,399,091			2,399,091	1.00	0.00	2,399,091	0	97.5%	0.0%
Sodium in Scrub Solution	0	50,307		50,307	0.00	1.00	0	50,307	0.0%	14.3%
Water in scrub	0	225.707		225,707	0.00	1.00	0	225,707	0.0%	64.3%
	0								0.0%	0.0%
	0								0.0%	0.0%
Total Mass	2,534,689	276,014	0	2,810,703			2,459,604	351,100	100.0%	100.0%
Average Density	1.3	1,200					1.3	1,200		
Total Volume	1,949,761	230					1,892,003	293		
Combined Volatile Constitutents										
Carbon	29,452			29,452	1.00	0.00	29,452	0		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	1.00	0.00	3,686	0		
Oxygen	466			466	1.00	0.00	466	0		
Nitrogen	34			34	1.00	0.00	34	0		
Combined Combustible Constitutents										
Carbon	0			0	1.00	0.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	1.00	0.00	0	0		
Oxygen	0			0	1.00	0.00	0	0		
Nitrogen	0			0	1.00	0.00	0	0		

List of assumptions:

Fraction of NaCl in scrub blowdown assuming 25% in final stabilized waste	36%

Stabilize Offgas Scrub Solution

Incoming Streams	Blowdown Mass (kgs)	Grout Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Stabilized BD Mass (kgs)	Mass (kgs)	
Component									
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.00%
Water in steel etc.	0			0	0.00	1.00	0	0	0.00%
Combustible Debris	0			0	1.00	0.00	0	0	0.00%
Water in combustibles	0			0	0.00	1.00	0	0	0.00%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.00%
Water in noncombustible sludge	0			0	0.00	1.00	0	0	0.00%
Oil & VOCs	75,086			75,086	1.00	0.00	75,086	0	8.55%
Soil	0			0	0.00	1.00	0	0	0.00%
Water in soil	0			0	0.00	1.00	0	0	0.00%
Scrub Solution (Na)	50,307			50,307	1.00	0.00	50,307	0	5.73%
Water in scrub	225,707			225,707	1.00	0.00	225,707	0	25.71%
Grout		526,650		526,650	1.00	0.00	526,650	0	60.00%
									0.00%
Total Mass	351,100	526,650	0	877,749			877,749	0	100.00%
Average Density	1,200	1,510					1,600	0	
Total Volume	293	349					549	0	
Combined Volatile Constitutents									
Carbon	0			0	0.00	1.00	0	0	
Chloride	75,086			75,086	1.00	0.00	75,086	0	
Hydrogen	0			0	0.00	1.00	0	0	
Oxygen	0			0	0.00	1.00	0	0	
Nitrogen	0			0	0.00	1.00	0	0	
Combined Combustible Constitutents									
Carbon	0			0	0.00	1.00	0	0	
Chloride	0			0	1.00	0.00	0	0	
Hydrogen	0			0	0.00	1.00	0	0	
Oxygen	0			0	0.00	1.00	0	0	
Nitrogen	0			0	0.00	1.00	0	0	

List of assumptions:

Percent water in stabilized scrub blowdown	45%
Percent grout in stabilized scrub blowdown	30%
Percent NaCl in stabilized scrub blowdown	25%
Percent Cl in stabilized scrub blowdown	15%

Repackage Stabilized Offgas Scrub Solution

Incoming Streams	Stabilized BD	Drum		Composite Feed	Conversion Factors	Conversion Factors	Repackage BD	
	Mass	Mass	Mass	Mass	Mass	Mass	Mass	Mass
Component	(kgs)	(kgs)	(kgs)	(kgs)	(kgs)	(kgs)	(kgs)	(kgs)
Steel non-combustible debris	0			0	0.00	1.00	0	0
Water in steel etc.	0			0	0.00	1.00	0	0
Combustible Debris	0			0	0.00	1.00	0	0
Water in combustibles	0			0	0.00	1.00	0	0
Noncombustible Sludge	0			0	1.00	0.00	0	0
Water in noncombustible sludge	0			0	0.00	1.00	0	0
Oil & VOCs	75,086			75,086	1.00	0.00	75,086	0
Soil	0			0	1.00	0.00	0	0
Water in soil	0			0	0.00	1.00	0	0
Scrub Solution	50,307			50,307	1.00	0.00	50,307	0
Water	225,707			225,707	1.00	0.00	225,707	0
Grout	526,650			526,650	1.00	0.00	526,650	0
Drums	0	0		0	1.00	0.00	0	0
Total Mass	877,749	0	0	877,749			877,749	0
Average Density	1,600						1,600	0
Total Volume	549						549	0
Combined Volatile Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	75,086			75,086	1.00	0.00	75,086	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	0			0	1.00	0.00	0	0
Chloride	0			0	1.00	0.00	0	0
Hydrogen	0			0	1.00	0.00	0	0
Oxygen	0			0	1.00	0.00	0	0
Nitrogen	0			0	1.00	0.00	0	0

List of assumptions:

Leach/Recovery

Incoming Streams Component	TD Bottoms Mass (kgs)	Leachant Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Clean Soil Mass (kgs)	Leachate Mass (kgs)		
Steel non-combustible debris	0			0	.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	.00	1.00	0	0	0.0%	0.0%
Combustible Debris	0			0	.00	1.00	0	0	0.0%	0.0%
Water in combustibles	0			0	.00	1.00	0	0	0.0%	0.0%
Noncombustible Sludge	76,492			76,492	.90	0.11	68,842	7,649	0.4%	0.2%
Water in noncombustible sludge	0			0	.00	1.00	0	0	0.0%	0.0%
Oil & VOCs	0			0	.00	1.00	0	0	0.0%	0.0%
Soil	6,828,182			6,828,182	.90	0.11	6,145,364	682,818	39.6%	19.8%
Water in soil	0			0	.00	1.00	0	0	0.0%	0.0%
Leach chemicals		7,767,758		7,767,758	.80	0.22	6,214,206	1,553,552	40.0%	45.0%
Water in leachant		4,315,421		4,315,421	.72	0.22	3,107,103	1,208,318	20.0%	35.0%
Total Mass	6,904,674	12,083,179	0	18,987,852			15,535,515	3,452,337	100.0%	100.0%
Average Density	913	1,150					1,712	903		
Total Volume	7,564	10,507					9,077	3,825		
Combined Volatile Constitutents										
Carbon	0			0	0.00	100	0	0		
Chloride	0			0	0.00	100	0	0		
Hydrogen	0			0	0.00	100	0	0		
Oxygen	0			0	0.00	100	0	0		
Nitrogen	0			0	0.00	100	0	0		
Combined Combustible Constitutents										
Carbon	0			0	0.00	100	0	0		
Chloride	0			0	0.00	100	0	0		
Hydrogen	0			0	0.00	100	0	0		
Oxygen	0			0	0.00	100	0	0		
Nitrogen	0			0	0.00	100	0	0		

List of assumptions/multipliers:

1. Fraction of soil and sludge carried from leach/recovery with the leachate	10%
2. Fraction of inlet soil and sludge returned to Pit 9	90%
3. Fraction of leach chemical in leachate from leach/recovery	45%
4. Fraction of water in leachate leach/recovery	35%
leach/recovery	20%
6. Fraction of leach chemical in soil/sludge returned to Pit 9	40%
7. Fraction of water in soil/sludge returned to Pit 9	20%
8. Fraction of solids in soil/sludge returned to Pit 9	40%
9. Percent weight increase of clean soil and sludge back to Pit 9	10%
10. Volume increase of leachate plus soil and sludge leach/recovery	30%

Stabilize Soil

Incoming Streams	Clean Soil	Grout		Composite Feed	Conversion Factors	Conversion Factors	Stabilized Soil		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	
Steel non-combustible debris	0			0	1.00	0.00	0	0	0.0%
Water in steel etc.	0			0	1.00	0.00	0	0	0.0%
Combustible Debris	0			0	1.00	0.00	0	0	0.0%
Water in combustibles	0			0	1.00	0.00	0	0	0.0%
Noncombustible Sludge	68,842			68,842	1.00	0.00	68,842	0	0.4%
Water in noncombustible sludge	0			0	0.00	1.00	0	0	0.0%
Oil & VOCs	0			0	0.00	1.00	0	0	0.0%
Soil	6,145,364			6,145,364	1.00	0.00	6,145,364	0	33.0%
Water in soil	0			0	0.00	1.00	0	0	0.0%
Leach chemical	6,214,206			6,214,206	1.00	0.00	6,214,206	0	33.3%
Water in leachant	3,107,103			3,107,103	1.00	0.00	3,107,103	0	16.7%
Grout	0	3,107,103		3,107,103	1.00	0.00	3,107,103	0	16.7%
	0								0.0%
Total Mass	15,535,515	3,107,103	0	18,642,618			1a,642,6 [redacted]a	0	100.0%
Average Density	903	1,510					1,600	0	
Total Volume	17,211	2,058					11,652	0	
Combined Volatile Constitutents									
Carbon	0		0	0	0.00	1.00	0	0	
Chloride	0		0	0	0.00	1.00	0	0	
Hydrogen	0		0	0	0.00	1.00	0	0	
Oxygen	0		0	0	0.00	1.00	0	0	
Nitrogen	0		0	0	0.00	1.00	0	0	
Combined Combustible Constitutents									
Carbon	0		9,527	9,527	1.00	0.00	9,527	0	
Chloride	0		34	34	1.00	0.00	34	0	
Hydrogen	0		1,194	1,194	1.00	0.00	1,194	0	
Oxygen	0		7,907	7,907	1.00	0.00	7,907	0	
Nitrogen	0		243	243	1.00	0.00	243	0	

List of assumptions:

Stabilize Leachate from Soil Leach and Debris Decon

Incoming Streams	Leachate	Grout	Decon Leachate	Composite Feed	Conversion Factors	Conversion Factors	Stabilized Leachate		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	
Steel non-combustible debris	0		46,442	46,442	1.00	0.00	46,442	0	1.0%
Water in steel etc.	0		11,610	11,610	1.00	0.00	11,610	0	0.3%
Combustible Debris	0		18,906	18,906	1.00	0.00	18,906	0	**0.4%**
Water in combustibles	0		4,726	4,726	1.00	0.00	4,726	0	0.1%
Noncombustible Sludge	7,649		0	7,649	1.00	0.00	7,649	0	0.2%
Water in noncombustible sludge	0		0	0	0.00	1.00	0	0	0.0%
Oil & VOCs	0		0	0	0.00	1.00	0	0	0.0%
Soil	682,818		0	682,818	1.00	0.00	682,818	0	15.3%
Water in soil	0		0	0	0.00	1.00	0	0	0.0%
Leach chemical	1,553,552		65,347	1,618,899	1.00	0.00	1,618,899	0	36.3%
Water in leachant	1,208,318		114,358	1,322,676	1.00	0.00	1,322,676	0	29.7%
Grout		742,745		742,745	1.00	0.00	742,745	0	16.7%
									0.0%
Total Mass	3,452,337	742,745	261,389	4,456,471			4,456,471	0	100.0%
Average Density	903	1,510	1,150				1,600	0	
Total Volume	3,825	492	227				2,785	0	
Combined Volatile Constitutents									
Carbon	0		0	0	0.00	1.00	0	0	
Chloride	0		0	0	0.00	1.00	0	0	
Hydrogen	0		0	0	0.00	1.00	0	0	
Oxygen	0		0	0	0.00	1.00	0	0	
Nitrogen	0		0	0	0.00	1.00	0	0	
Combined Combustible Constitutents									
Carbon	0		9,527	9,527	1.00	0.00	9,527	0	
Chloride	0		34	34	1.00	0.00	34	0	
Hydrogen	0		1,194	1,194	1.00	0.00	1,194	0	
Oxygen	0		7,907	7,907	1.00	0.00	7,907	0	
Nitrogen	0		243	243	1.00	0.00	243	0	

List of assumptions:

Repackage

Incoming Streams	Stabilized Leachate	Drum		Composite Feed	Conversion Factors	Conversion Factors	Repackage	
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)
Steel non-combustible debris	46,442			46,442	1.00	0.00	46,442	0
Water in steel etc.	11,610			11,610	1.00	0.00	11,610	0
Combustible Debris	18,906			18,906	1.00	0.00	18,906	0
Water in combustibles	4,726			4,726	1.00	0.00	4,726	0
Noncombustible Sludge	7,649			7,649	1.00	0.00	7,649	0
Water in noncombustible sludge	0			0	1.00	0.00	0	0
Oil & VOCs	0			0	1.00	0.00	0	0
Soil	682,818			682,818	1.00	0.00	682,818	0
Water in soil	0			0	1.00	0.00	0	0
Leach chemical	1,618,899			1,618,899	1.00	0.00	1,618,899	0
Water in leachant	1,322,676			1,322,676	1.00	0.00	1,322,676	0
Grout	742,745			742,745	1.00	0.00	742,745	0
Drums		891,294		891,294	1.00	0.00	891,294	0
Total Mass	4,456,471	891,294		5,347,766			5,347,766	0
Average Density	1,600						1,600	
Total Volume	2.785						3,342	
Combined Volatile Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	0			0	0.00	1.00	0	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	9,527			9,527	1.00	0.00	9,527	0
Chloride	34			34	1.00	0.00	34	0
Hydrogen	1,194			1,194	1.00	0.00	1,194	0
Oxygen	7,907			7,907	1.00	0.00	7,907	0
Nitrogen	243			243	1.00	0.00	243	0

List of assumptions:

Summary of Disposal

	Disposal at WIPP		Return to Pit 9	
	Weight, kg	Volume, m^3	Weight, kg	Volume, m^3
Assay			9,983,924	9,442
Stabilized Leach and Decon Leachate	5,347,766	3,342		
Sabilized clean Soil/sludge			18,642,618	11,652
Stabilized Offgas Scrub Solutin			877,749	549
Clean Debris Return to Pit			925,754	1,590
Total	5,347,766	3,342	30,430,046	23,232

1. Total volume to WPP	3,342
2. Total volume to Pit 9	23,232
3. Increase in volume returned ω ƀt 9	123%
4. Volume of secondary waste	0

PIT 9 ALT 5c LEACH DECON ONSITE
SCWO.XLS

Assay

Incoming Streams Component	Feed Mass (kgs)	Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	>100 nCi/g Mass (kgs)	<100 nCi/g Mass (kgs)		
Steel non-combustible debris	619,224			619,224	0.50	0.50	309,612	309,612	3.1%	3.1%
Water in steel etc.	154,806			154,806	0.50	0.50	77,403	77,403	0.8%	0.8%
Combustible Debris	252,074			252,074	0.50	0.50	126,037	126,037	1.3%	1.3%
Water in combustibles	63,019			63,019	0.50	0.50	31,510	31,510	0.3%	0.3%
Noncombustible Sludge	152,983			152,983	0.50	0.50	76,492	76,492	0.8%	0.8%
Water in noncombustible sludge	53,751			53,751	0.50	0.50	26,876	26,876	0.3%	0.3%
Oil & VOCs	217,445			217,445	0.50	0.50	108,723	108,723	1.1%	1.1%
Soil	13,656,364			13,656,364	0.50	0.50	6,828,182	6,828,182	68.4%	68.4%
Water in soil	4,798,182			4,798,182	0.50	0.50	2,399,091	2,399,091	24.0%	24.0%
Total Mass	19,967,848	0	0	19,967,848			9,983,924	9,983,924	100.0%	100.0%
Average Density	1,057			1,057			1,057	1,057		
Total Volume	18,883			18,883			9,442	9,442		
Combined Volatile Constitutents										
Carbon	58,904			58,904	0.50	0.50	29,452	29,452		
Chloride	150,171			150,171	0.50	0.50	75,086	75,086		
Hydrogen	7,371			7,371	0.50	0.50	3,686	3,686		
Oxygen	932			932	0.50	0.50	466	466		
Nitrogen	67			67	0.50	0.50	34	34		
Combined Combustible Constitutents										
Carbon	127,027			127,027	0.50	0.50	63,514	63,514		
Chloride	452			452	0.50	0.50	226	226		
Hydrogen	15,925			15,925	0.50	0.50	7,963	7,963		
Oxygen	105,427			105,427	0.50	0.50	52,714	52,714		
Nitrogen	3,243			3,243	0.50	0.50	1,622	1,622		

List of assumptions:

Segregate

Incoming Streams Component	>100 nCi/g Mass (kgs)	Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass kgs)	>60mm Mass (kgs)	< 60mm Mass (kgs)		
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0	56.9%	0.0%
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0	14.2%	0.0%
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0	23.1%	0.0%
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	5.8%	0.0%
Noncombustible Sludge	76,492			76,492	0.00	1.00	0	76,492	0.0%	0.8%
Water in noncombustible sludge	26,876			26,876	0.00	1.00	0	26,876	0.0%	0.3%
Oil & VOCs	108,723			108,723	0.00	1.00	0	108,723	0.0%	1.2%
Soil	6,828,182			6,828,182	0.00	1.00	0	6,828,182	0.0%	72.3%
Water in soil	2,399,091			2,399,091	0.00	1.00	0	2,399,091	0.0%	25.4%
Total Mass	9,983,924	0	0	9,983,924			544,562	9,439,363	100.0%	100.0%
Average Density	1,057			1,057			291	1,248		
Total Volume	9,442			9,442			1,871	7,564		
Combined Volatile Constitutents										
Carbon	29,452			29,452	0.00	1.00	0	29,452		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	0.00	1.00	0	3,686		
Oxygen	466			466	0.00	1.00	0	466		
Nitrogen	34			34	0.00	1.00	0	34		
Combined Combustible Constitutents										
Carbon	63,514			63,514	1.00	0.00	63,514	0		
Chloride	226			226	1.00	0.00	226	0		
Hydrogen	7,963			7,963	1.00	0.00	7,963	0		
Oxygen	52,714			52,714	1.00	0.00	52,714	0		
Nitrogen	1,622			1,622	1.00	0.00	1,622	0		

List of assumptions:

sort

Incoming Streams	>60 mm Mass (kgs)	Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	sort Mass (kgs)	Mass (kgs)	
Component									
Steel noncombustible debris	309,612			309,612	1.00	0.00	309,612	0	56.9%
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0	14.2%
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0	23.1%
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	5.8%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.0%
Water in noncombustible sludge	0			0	0.00	1.00	0	0	0.0%
Oil & VOCs	0			0	0.00	1.00	0	0	0.0%
Soil	0			0	0.00	1.00	0	0	0.0%
Water in Soil	0			0	0.00	1.00	0	0	0.0%
Total Mass	544,562	0	0	544,562			544,562	0	100.0%
Average Density	291			291			291		
Total Volume	1,871			1,871			1,871		
Combined Volatile Constitutents									
Carbon	0			0	1.00	0.00	0	0	
Chloride	0			0	1.00	0.00	0	0	
Hydrogen	0			0	1.00	0.00	0	0	
Oxygen	0			0	1.00	0.00	0	0	
Nitrogen	0			0	1.00	0.00	0	0	
Combined Combustible Constitutents									
Carbon	63,514			63,514	1.00	0.00	63,514	0	
Chloride	226			226	1.00	0.00	226	0	
Hydrogen	7,963			7,963	1.00	0.00	7,963	0	
Oxygen	52,714			52,714	1.00	0.00	52,714	0	
Nitrogen	1,622			1,622	1.00	0.00	1,622	0	

List of assumptions:

Shredding

Incoming Streams	sort			Composite Feed	Conversion Factors	Conversion Factors	Shred	
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0
Noncombustible Sludge	0			0	0.00	1.00	0	0
Water in noncombustible sludge	0			0	0.00	1.00	0	0
Oil & VOCs	0			0	0.00	1.00	0	0
Soil	0			0	0.00	1.00	0	0
Water in soil	0			0	0.00	1.00	0	0
Total Mass	544,562	0	0	544,562			544,562	0
Average Density	291			291			582	0
Total Volume	1,871			1,871			935	
Combined Volatile Constitutents								
Carbon	0			0	1.00	0.00	0	0
Chloride	0			0	1.00	0.00	0	0
Hydrogen	0			0	1.00	0.00	0	0
Oxygen	0			0	1.00	0.00	0	0
Nitrogen	0			0	1.00	0.00	0	0
Combined Combustible Constitutents								
Carbon	63,514			63,514	1.00	0.00	63,514	0
Chloride	226			226	1.00	0.00	226	0
Hydrogen	7,963			7,963	1.00	0.00	7,963	0
Oxygen	52,714			52,714	1.00	0.00	52,714	0
Nitrogen	1,622			1,622	1.00	0.00	1,622	0

List of assumptions:

Decon DebrislRecovery

Incoming Streams Component	Shredded Debris Mass (kgs)	Decon Solution Mass (kgs)	Stream 3 Mass. (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Deconned Debris Mass (kgs)	Decon Leachate Mass (kgs)		
Steel noncombustible debris	309,612			309,612	0.85	0.15	263,170	46,442	28.4%	17.8%
Water in steel etc.	77,403			77.403	0.85	0.15	65,793	11,610	7.1%	4.4%
Combustible Debris	126,037			126,037	0.85	0.15	107,131	18.906	11.6%	7.2%
Water in combustibles	31,510			31,510	0.85	0.15	26,783	4,726	2.9%	1.8%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in noncombustible sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Oil & VOCs	0			0	0.00	I.00	0	0	0.0%	0.0%
Soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Decon chemicals		157,923		157,923			92,575	65,347	10.0%	25.0%
Water in decon solution		484.659		484,659			370,301	114,358	40.0%	43.7%
Total Mass	544,562	642,582	0	1,187,144			925,754	261,389	100.0%	100.0%
Average Density	582	1,150					582	1,150		
Total Volume	935	559					1,590	227		
Combined Volatile Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	I.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		
Combined Combustible Constitutents										
Carbon	63,514			63,514	0.85	0.15	53,986	9,527		
Chloride	226			226	0.85	0.15	192	34		
Hydrogen	7,963			7,963	0.85	0.15	6,768	1,194		
Oxygen	52,714			52,714	0.85	0.15	44,806	7,907		
Nitrogen	1,622			1,622	0.85	0.15	1.378	243		

List of assumptions/multipliers:

1. Fraction of soil and sludge carried from deconlrecovery with the decon leachate	15%
2. Fraction of inlet debris returned to Pit 9	85%
3. Fraction of leach chemical in decon leachate from deconlrecovery	25%
4. Fraction of water in leachate from deconlrecovery	50%
from deconlrecovery	25%
6. Fraction of leach chemical in debris returned to Pit 9	10%
7. Fraction of water in debris returned to Pit 9	50%
8. Fraction of solids in debris returned to Pit 9	40%
9. Percent weight increase of clean debris back to Pit 9	10%
9. Volume increase of leachate plus debris to Recovery	30%

Repackage for Return to Pit 9

Incoming Streams Component	Deconned Debris Mass (kgs)	Drum Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Repackage Debris Mass (kgs)	Mass (kgs)
Steel non-combustible debris	263,170			263,170	1.00	0.00	263,170	0
Water in steel etc.	65,793			65,793	1.00	0.00	65,793	0
Combustible Debris	107,131			107,131	1.00	0.00	107,131	0
Water in combustibles	26,783			26,783	1.00	0.00	26,783	0
Noncombustible Sludge	0			0	0.00	1.00	0	0
Water in noncombustible sludge	0			0	0.00	1.00	0	0
Oil & VOCs	0			0	0.00	1.00	0	0
Soil	0			0	0.00	1.00	0	0
Water in soil	0			0	0.00	1.00	0	0
Decon chemicals	92,575			92,575	1.00	0.00	92,575	0
Water in decon solution	370,301			370,301	1.00	0.00	370,301	0
Drums		0		0	1.00	0.00	0	0
Total Mass	925,754	0	0	925,754			925,754	0
Average Density	582						582	0
Total Volume	1,590						1,590	0
Combined Volatile Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	0			0	0.00	1.00	0	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	53,986			53,986	1.00	0.00	53,986	0
Chloride	192			192	1.00	0.00	192	0
Hydrogen	6,768			6,768	1.00	0.00	6,768	0
Oxygen	44,806			44,806	1.00	0.00	44,806	0
Nitrogen	1.378			1,378	1.00	0.00	1,378	0

List of assumptions:

Thermal Desorption

Incoming Streams	<60 mm			Composite Feed	Conversion Factors	Conversion Factors	TD Bottoms	TD Offgas		
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)		
Steel non-combustible debris	0			0	1.00	0.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	1.00	0.00	0	0	0.0%	0.0%
Combustible Debris	0			0	1.00	0.00	0	0	0.0%	0.0%
Water in combustibles	0			0	1.00	0.00	0	0	0.0%	0.0%
Noncombustible Sludge	76,492			76,492	1.00	0.00	76,492	0	1.1%	0.0%
Water in noncombustible sludge	26,876			26,876	0.00	1.00	0	26,876	0.0%	1.1%
Oil & VOCs	108,723			108,723	0.00	1.00	0	108,723	0.0%	4.3%
Soil	6,828,182			6,828,182	1.00	0.00	6,828,182	0	98.9%	0.0%
Water in soil	2,399,091			2,399,091	0.00	1.00	0	2,399,091	0.0%	94.7%
Total Mass	9,439,363	0	0	9,439,363			6,904,674	2,534,689	100.0%	100.0%
Average Density	1,248			1,248			913	1.3		
Total Volume	7,564			7.564			7,564	1,949,761		
Combined Volatile Constitutents										
Carbon	29,452			29,452	0.00	1.00	0	29,452		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	0.00	1.00	0	3,686		
Oxygen	466			466	0.00	1.00	0	466		
Nitrogen	34			34	0.00	1.00	0	34		
Combined Combustible Constitutents										
Carbon	0			0	1.00	0.00	0	0		
Chloride	0			0	1.00	0.00	0	0		
Hydrogen	0			0	1.00	0.00	0	0		
Oxygen	0			0	1.00	0.00	0	0		
Nitrogen	0			0	1.00	0.00	0	0		

List of assumptions:

SCWO

Incoming Streams Component	TD Offgas Mass (kgs)	Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	SCWO Offgas Mass (kgs)	SCWO Water Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%	0.0%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in noncombustible sludge	26,876			26,876	0.00	1.00	0	26,876	0.0%	1.0%
Oil & VOCs	108,723			108,723	0.27	0.73	29,486	79,237	50.0%	2.9%
Soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in soil	2,399,091			2,399,091	0.01	0.99	29,486	2,369,606	50.0%	86.9%
Sodium in Caustic	0	50,307		50,307	0.00	1.00	0	50,307	0.0%	1.8%
Water in Caustic	0	201,229		201,229	0.00	1.00	0	201,229	0.0%	7.4%
	0			0	0.00	0.00	0	0	0.0%	0.0%
	0									
Total Mass	2,534,689	251,536	0	2,786,225			58,971	2,727,254	100.0%	100.0%
Average Density	1.3			1.4			1.3	1,000		
Total Volume	1,949,761			1,949,761			45,362	2,727		
Combined Volatile Constitutents										
Carbon	29,452			29,452	1.00	0.00	29,452	0		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	0.00	1.00	0	3,686		
Oxygen	466			466	0.00	1.00	0	466		
Nitrogen	34			34	1.00	0.00	34	0		
Combined Combustible Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		

List of assumptions:

1. Fraction of carbon that exits with offgas as C02,	1.00
2. Fraction of chloride that remains in solution as HCl	1.00
3. Fraction of hydrogen that remains in solution	1.00
3. Fraction of water in offgas	0.50

SCWO Offgas

Incoming Streams Component	Offgas Mass (kgs)	Scrub Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Vent Mass (kgs)	Mass (kgs)
Steel non-combustible debris	0			0	0.00	1.00	0	0
Water in steel etc.	0			0	1.00	0.00	0	0
Combustible Debris	0			0	0.00	1.00	0	0
Water in combustibles	0			0	0.00	1.00	0	0
Noncombustible Sludge	0			0	0.00	1.00	0	0
Water in noncombustible sludge	0			0	1.00	0.00	0	0
Oil & VOCs	29,486			29,486	1.00	0.00	29,486	0
Soil	0			0	0.00	1.00	0	0
Water in soil	29,486			29,486	1.00	0.00	29,486	0
	0							
	0							
	0							
Total Mass	58,971	0	0	58,971			58,971	0
Average Density	1.3						1.3	
Total Volume	45,362						45,362	
Combined Volatile Constitutents								
Carbon	29,452			29,452	1.00	0.00	29,452	0
Chloride	0			0	0.00	1.00	0	0
Hydrogen	0			0	1.00	0.00	0	0
Oxygen	0			0	1.00	0.00	0	0
Nitrogen	34			34	1.00	0.00	34	0
Combined Combustible Constitutents								
Carbon	0			0	1.00	0.00	0	0
Chloride	0			0	0.00	1.00	0	0
Hydrogen	0			0	1.00	0.00	0	0
Oxygen	0			0	1.00	0.00	0	0
Nitrogen	0			0	1.00	0.00	0	0

List of assumptions:

Stabilize SCWO Water

Incoming Streams Component	SCWO Water Stream 1 Mass (kgs)	Grout Stream 2 Mass (kgs)	Stream 3 Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Stabilized Product 1 Mass (kgs)	Evaporator Vent Product 2 Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.00%	
Water in steel etc.	0			0	0.00	1.00	0	0	0.00%	
Combustible Debris	0			0	1.00	0.00	0	0	0.00%	
Water in combustibles	0			0	0.00	1.00	0	0	0.00%	
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.00%	
Water in noncombustible sludge	26,876			26,876	1.00	0.00	26,876	0	5.19%	45.00%
Oil & VOCs	79,237			79,237	1.00	0.00	79,237	0	15.29%	25.00%
Soil	0			0	0.00	1.00	0	0	0.00%	
Water in soil	2,369,606			2,369,606	0.00	1.00	0	2,369,606	0.00%	
Sodium in Caustic	50,307			50,307	1.00	0.00	50,307	0	9.71%	
Water in Caustic	201,229			201,229	1.03	-0.03	206,304	-5,075	39.81%	
Grout	0	155,453		155,453	1.00	0.00	155,453	0	30.00%	
	0								0.00%	
Total Mass	2,727,254	155,453	0	2,882,708			518,177	2,364,530	100.00%	
Average Density	1,000	1,510					1,600	0		
Total Volume	2,727	103					324	0		
Combined Volatile Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	75,086			75,086	1.00	0.00	75,086	0		
Hydrogen	3,686			3,686	0.00	1.00	0	3,686		
Oxygen	466			466	0.00	1.00	0	466		
Nitrogen	0			0	0.00	1.00	0	0		
Combined Combustible Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride,	0			0	1.00	0.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		

List of assumptions:

Percent water in stabilized scrub blowdown	45%
Percent grout in stabilized scrub blowdown	30%
Percent NaCl in stabilized scrub blowdown	25%
Percent Cl in stabilized scrub blowdown	15%

Repackage Stabilized Offgas Scrub Solution

Incoming Streams	Stabilized BD	Drum		Composite Feed	Conversion Factors	Conversion Factors	Repackage	
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)
Steel non-combustible debris	0			0	0.00	1.00	0	0
Water in steel etc.	0			0	0.00	1.00	0	0
Combustible Debris	0			0	0.00	1.00	0	0
Water in combustibles	0			0	0.00	1.00	0	0
Noncombustible Sludge	0			0	1.00	0.00	0	0
Water in noncombustible sludge	26,876			26,876	1.00	0.00	26,876	0
Oil & VOCs	79,237			79,237	1.00	0.00	79,237	0
Soil	0			0	1.00	0.00	0	0
Water in soil	0			0	1.00	0.00	0	0
Scrub Solution	50,307			50,307	1.00	0.00	50,307	0
Watre	206,304			206,304	1.00	0.00	206,304	0
Grout	155,453			155,453	1.00	0.00	155,453	0
Drums		0		0	1.00	0.00	0	0
Total Mass	518,177	0	0	518,177			518,177	0
Average Density	1,600						1,600	0
Total Volume	324						324	0
Combined Volatile Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	75,086			75,086	1.00	0.00	75,086	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	0			0	0.00	1.00	0	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0

List of assumptions:

Leach/Recovery

Incoming Streams Component	TD Bottoms Mass (kgs)	Leachant Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Clean Soil Mass (kgs)	Leachate Mass (kgs)		
Steel noncombustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%	0.0%
NoncombustibleSludge	76,492			76,492	0.90	0.10	60,042	7,649	0.4%	0.2%
Water in noncombustiblesludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Oil & VOCs	0			0	0.00	1.00	0	0	0.0%	0.0%
Soil	6,828,182			6,828,182	0.90	0.10	6,145,364	602.010	39.6%	19.0%
Water in soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Leach chemicals		7,767,758		7,767,758	0.00	0.20	6,214,206	1,553,552	40.0%	45.0%
Water in leachant		4,315,421		4,315,421	0.72	0.20	3,107,103	1,200,310	20.0%	35.0%
Total Mass	6,904,674	12,083,179	0	18,987,852			15,535,515	3,452,337	100.0%	100.0%
Average Density	913	1,150					1,712	903		
Total Volume	7,564	10,507					9,077	3.025		
Combined Volatile Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		
Combined Combustible Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		

List of assumptions/multipliers:

1. Fraction of soil and sludge carried from leach/recovery with the leachate	10%
2. Fraction of inlet soil and sludge returned to Pit 9	90%
3. Fraction of leach chemical in leachate from leachlrecovery	45%
4. Fraction of water in leachate leach/recovery	35%
leachateleach/recovery	20%
6. Fraction of leach chemical in soillsludge returned to Pit 9	40%
7. Fractionof water in soillsludge returned to Pit 9	20%
8. Fraction of solids in soil/sludge returned to Pit 9	40%
9. Percent weight increase of dean soil and sludgeback to Pit 9	10%
10. Volume increase of leachate plus soil and sludge leach/recovery	30%
9. Volume increase of leachate plus soil and sludge to Recovery	0%

Stabilize Clean Soil

Incoming Streams Component	Clean Soil Mass (kgs)	Grout Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Stabilized Mass (kgs)	Mass (kgs)
Steel non-combustible debris	0			0	1.00	0.00	0	0
Water in steel etc.	0			0	1.00	0.00	0	0
Combustible Debris	0			0	1.00	0.00	0	0
Water in combustibles	0			0	1.00	0.00	0	0
Noncombustible Sludge	68,842			68,842	1.00	0.00	68,842	0
Water in noncombustible sludge	0			0	0.00	1.00	0	0
Oil & VOCs	0			0	0.00	1.00	0	0
Soil	6,145,364			6,145,364	1.00	0.00	6,145,364	0
Water in soil	0			0	0.00	1.00	0	0
Leach chemical	6,214,206			6,214,206	1.00	0.00	6,214,206	0
Water in leachant	3,107,103			3,107,103	1.00	0.00	3,107,103	0
Grout	0	3,107,103		3,107,103	1.00	0.00	3,107,103	0
	0							
Total Mass	15,535,515	3,107,103	0	18,642,618			18,642,618	0
Average Density	1,712	1,510					1,600	0
Total Volume	9,077	2,058					11,652	0
Combined Volatile Constitutents								
Carbon	0		0	0	0.00	1.00	0	0
Chloride	0		0	0	0.00	1.00	0	0
Hydrogen	0		0	0	0.00	1.00	0	0
Oxygen	0		0	0	0.00	1.00	0	0
Nitrogen	0		0	0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	0		9,527	9,527	1.00	0.00	9,527	0
Chloride	0		34	34	1.00	0.00	34	0
Hydrogen	0		1,194	1,194	1.00	0.00	1,194	0
Oxygen	0		7,907	7,907	1.00	0.00	7,907	0
Nitrogen	0		243	243	1.00	0.00	243	0

List of assumptions:

Stabilize Leachate from Soil Leach and Debris Decon

incoming Streams	Stabilized Leachate	Grout	Decon Solution	Composite Feed	Conversion Factors	Conversion Factors	Stabilized Leachate	
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)
Steel non-combustible debris	0		46,442	46,442	1.00	0.00	46,442	0
Water in steel etc.	0		11,610	11,610	1.00	0.00	11,610	0
Combustible Debris	0		18,906	18,906	1.00	0.00	18,906	0
Water in combustibles	0		4,726	4,726	1.00	0.00	4,726	0
Noncombustible Sludge	7,649		0	7,649	1.00	0.00	7,649	0
Water in noncombustible sludge	0		0	0	0.00	1.00	0	0
Oil & VOCs	0		0	0	0.00	1.00	0	0
Soil	682,818		0	682,818	1.00	0.00	682,818	0
Water in soil	0		0	0	0.00	1.00	0	0
Leach chemical	1,553,552		65,347	1,618,899	1.00	0.00	1,618,899	0
Water in leachant	1,208,318		114,358	1,322,676	1.00	0.00	1,322,676	0
Grout		742,745		742,745	1.00	0.00	742,745	0
Total Mass	3,452,337	742,745	261,389	4,456,471			4,456,471	0
Average Density	903	1,510	1,150				1,600	0
Total Volume	3,825	492	227				2,785	0
Combined Volatile Constitutents								
Carbon	0		0	0	0.00	1.00	0	0
Chloride	0		0	0	0.00	1.00	0	0
Hydrogen	0		0	0	0.00	1.00	0	0
Oxygen	0		0	0	0.00	1.00	0	0
Nitrogen	0		0	0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	0		9,527	9,527	1.00	0.00	9,527	0
Chloride	0		34	34	1.00	0.00	34	0
Hydrogen	0		1,194	1,194	1.00	0.00	1,194	0
Oxygen	0		7,907	7,907	1.00	0.00	7,907	0
Nitrogen	0		243	243	1.00	0.00	243	0

List of assumptions:

Repackage

Incoming Streams	Bottoms	Drum		Composite Feed	Conversion Factors	Conversion Factors	Repackage	
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)
Steel noncombustible debris	46,442			46,442	1.00	0.00	46,442	0
Water in steel etc.	11,610			11,610	1.00	0.00	11,610	0
Combustible Debris	18,906			18,906	1.00	0.00	18,906	0
Water in combustibles	4,726			4,726	1.00	0.00	4,726	0
Noncombustible Sludge	7,649			7,649	1.00	0.00	7,649	0
Water in noncombustible sludge	0			0	1.00	0.00	0	0
Oil & VOCs	0			0	1.00	0.00	0	0
Soil	682,818			682,818	1.00	0.00	682,818	0
Water in soil	0			0	1.00	0.00	0	0
Leach chemical	1,618,899			1,618,899	1.00	0.00	1,618,899	0
Water in leachant	1,322,676			1,322,676	1.00	0.00	1,322,676	0
Grout	742,745			742,745	1.00	0.00	742,745	0
Drums		891,294		891,294	1.00	0.00	891,294	0
Total Mass	4,456,471	891,294		5,347,766			5,347,766	0
Average Density	1,600						1,600	
Total Volume	2,785						3,342	
Combined Volatile Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	0			0	0.00	1.00	0	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	9,527			9,527	1.00	0.00	9,527	0
Chloride	34			34	1.00	0.00	34	0
Hydrogen	1,194			1,194	1.00	0.00	1,194	0
Oxygen	7,907			7,907	1.00	0.00	7,907	0
Nitrogen	243			243	1.00	0.00	243	0

List of assumptions:

Summary of Disposal

	Disposal at WIPP		Return to Pit 9	
	Weight, kg	Volume, m^3	Weight, kg	Volume, m^3
Assay			9,983,924	9,442
Stabilized Leach and Decon Leachate	5,347,766	3,342		
Leached Soil/sludge			18,642,618	11,652
Stabilized SCWO Solution			518,177	324
			925,754	1,590
Total	5,347,766	3,342	30,070,474	23,007

1. Total volume to WPP	3,342
2. Total volume to Pit 9	23,007
3. Increase in volume returned to Pit 9	122%
4. Volume *of* secondary waste	0

PIT 9 ALT 5D LEACH DECON ONSITE CHEMOX.XLS

Assay

Incoming Streams	Feed Mass (kgs)	Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	>100 nCi/g Mass (kgs)	<100 nCi/g Mass (kgs)		
Component										
Steel non-combustible debris	619,224			619,224	0.50	0.50	309,612	309,612	3.1%	3.1%
Water in steel etc.	154,806			154,806	0.50	0.50	77,403	77,403	0.8%	0.8%
Combustible Debris	252,074			252,074	0.50	0.50	126,037	126,037	1.3%	1.3%
Water in combustibles	63,019			63,019	0.50	0.50	31,510	31,510	0.3%	0.3%
Noncombustible Sludge	152,983			152,983	0.50	0.50	76,492	76,492	0.8%	0.8%
Water in noncombustible sludge	53,751			53,751	0.50	0.50	26,876	26,876	0.3%	0.3%
Oil & VOCs	217,445			217,445	0.50	0.50	108,723	108,723	1.1%	1.1%
Soil	13,656,364			13,656,364	0.50	0.50	6,828,182	6,828,182	68.4%	68.4%
Water in soil	4,798,182			4,798,182	0.50	0.50	2,399,091	2,399,091	24.0%	24.0%
Total Mass	19,967,848	0	0	19,967,848			9,983,924	9,983,924	100.0%	100.0%
Average Density	1,057			1,057			1,057	1,057		
Total Volume	18,883			18,883			9,442	9,442		
Combined Volatile Constitutents										
Carbon	58,904			58,904	0.50	0.50	29,452	29,452		
Chloride	150,171			150,171	0.50	0.50	75,086	75,086		
Hydrogen	7,371			7,371	0.50	0.50	3,686	3,686		
Oxygen	932			932	0.50	0.50	466	466		
Nitrogen	67			67	0.50	0.50	34	34		
Combined Combustible Constitutents										
Carbon	127,027			127,027	0.50	0.50	63,514	63,514		
Chloride	452			452	0.50	0.50	226	226		
Hydrogen	15,925			15,925	0.50	0.50	7,963	7,963		
Oxygen	105,427			105,427	0.50	0.50	52,714	52,714		
Nitrogen	3.243			3.243	0.50	0.50	1,622	1,622		

List of assumptions:

Segregate

Incoming Streams	>100 nCi/g Mass (kgs)	Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	>60mm Mass (kgs)	< 60mm Mass (kgs)		
Component										
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0	56.9%	0.0%
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0	14.2%	0.0%
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0	23.1%	0.0%
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	5.8%	0.0%
Noncombustible Sludge	76,492			76,492	0.00	1.00	0	76,492	0.0%	0.8%
Water in noncombustible sludge	26,876			26,876	0.00	1.00	0	26,876	0.0%	0.3%
Oil & VOCs	108,723			108,723	0.00	1.00	0	108,723	0.0%	1.2%
Soil	6,828,182			6,828,182	0.00	1.00	0	6,828,182	0.0%	72.3%
Water in soil	2,399,091			2,399,091	0.00	1.00	0	2,399,091	0.0%	25.4%
Total Mass	9,983,924	0	0	9,983,924			544,562	9,439,363	100.0%	100.0%
Average Density	1,057			1,057			291	1,248		
Total Volume	9,442			9,442			1,871	7,564		
Combined Volatile Constitutents										
Carbon	29,452			29,452	0.00	1.00	0	29,452		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	0.00	1.00	0	3,686		
Oxygen	466			466	0.00	1.00	0	466		
Nitrogen	34			34	0.00	1.00	0	34		
Combined Combustible Constitutents										
Carbon	63,514			63,514	1.00	0.00	63,514	0		
Chloride	226			226	1.00	0.00	226	0		
Hydrogen	7,963			7,963	1.00	0.00	7,963	0		
Oxygen	52,714			52,714	1.00	0.00	52,714	0		
Nitrogen	1,622			1,622	1.00	0.00	1,622	0		

List of assumptions:

1. Fraction of debris that goes to Shredding including associated water	1
2. Fraction of sludge, oil/VOC, and soil that goes to Thermal Desorb including associate water	1
3. Density of debris as dug	#REF!
4. Density of soil/sludge as dug	#REF!

sort

Incoming Streams	>60 mm			Composite Feed	Conversion Factors	Conversion Factors	sort		
Component	Mass	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0	56.9%
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0	14.2%
Combustible Debris	126,037			126,037	1.00	0.00	126,037	0	23.1%
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0	5.8%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.0%
Water in noncombustible sludge	0			0	0.00	1.00	0	0	0.0%
Oil & VOCs	0			0	0.00	1.00	0	0	0.0%
Soil	0			0	0.00	1.00	0	0	0.0%
Water in Soil	0			0	0.00	1.00	0	0	0.0%
Total Mass	544,562	0	0	544,562			544,562	0	100.0%
Average Density	291			291			291		
Total Volume	1,871			1,871			1,871		
Combined Volatile Constitutents									
Carbon	0			0	1.00	0.00	0	0	
Chloride	0			0	1.00	0.00	0	0	
Hydrogen	0			0	1.00	0.00	0	0	
Oxygen	0			0	1.00	0.00	0	0	
Nitrogen	0			0	1.00	0.00	0	0	
Combined Combustible Constitutents									
Carbon	63,514			63,514	1.00	0.00	63,514	0	
Chloride	226			226	1.00	0.00	226	0	
Hydrogen	7,963			7,963	1.00	0.00	7,963	0	
Oxygen	52,714			52,714	1.00	0.00	52,714	0	
Nitrogen	1,622			1,622	1.00	0.00	1,622	0	

List of assumptions:

Shredding

Incoming Streams Component	Sort Mass (kgs)	Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Shred Mass (kgs)	Mass (kgs)
Steel non-combustible debris	309,612			309,612	1.00	0.00	309,612	0
Water in steel etc.	77,403			77,403	1.00	0.00	77,403	0
Combustible Debris	126,037			126,037	1.00	0.40	126,037	0
Water in combustibles	31,510			31,510	1.00	0.00	31,510	0
Noncombustible Sludge	0			0	0.00	1.00	0	0
Water in noncombustible sludge	0			0	0.00	1.00	0	0
Oil & VOCs	0			0	0.00	1.00	0	0
Soil	0			0	0.00	1.00	0	0
Water in soil	0			0	0.00	1.00	0	0
Total Mass	544,562	0	0	544,562			544,562	0
Average Density	291			291			582	0
Total Volume	1,871			1,871			935	
Combined Volatile Constitutents								
Carbon	0			0	1.00	0.00	0	0
Chloride	0			0	1.00	0.00	0	0
Hydrogen	0			0	1.00	0.00	0	0
Oxygen	0			0	1.00	0.00	0	0
Nitrogen	0			0	1.00	0.00	0	0
Combined Combustible Constitutents								
Carbon	63,514			63,514	1.00	0.00	63,514	0
Chloride	226			226	1.00	0.00	226	0
Hydrogen	7,963			7,963	1.00	0.00	7,963	0
Oxygen	52,714			52,714	1.00	0.00	52,714	0
Nitrogen	1,622			1,622	1.00	0.00	1,622	0

List of assumptions:

Decon DebrislRecovery

Incoming Streams Component	Shredded Debris Mass (kgs)	Decon Solution Mass (kgs)	Stream 3 Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Deconned Debris Mass (kgs)	Decon Leachate Mass (kgs)		
Steel noncombustible debris	309,612			309,612	0.85	0.15	263,170	46,442	28.4%	17.8%
Water in steel etc.	77,403			77,403	0.85	0.15	65,793	11,610	7.1%	4.4%
Combustible Debris	126,037			126,037	0.85	0.15	107,131	18,906	11.6%	7.2%
Water in combustibles	31,510			31,510	0.85	0.15	26.783	4,726	2.9%	1.8%
Noncombustible Sludge	*0*			*0*	0.00	1.00	0	*0*	0.0%	0.0%
Water in noncombustible sludge	*0*			*0*	0.00	1.00	0	*0*	0.0%	0.0%
Oil & VOCs	*0*			*0*	0.00	1.00	0	*0*	0.0%	0.0%
Soil	*0*			*0*	*0.00*	1.00	0	*0*	0.0%	0.0%
Water in soil	*0*			*0*	*0.00*	1.00	0	*0*	0.0%	0.0%
Decon Solution		157,923		157.923			92,575	65,347	10.0%	25.0%
Water in decon solution		484,659		484,659			370,301	114.358	40.0%	43.7%
Total Mass	544,562	642,582	0	1,187,144			925,754	261,389	100.0%	100.0%
Average Density	582	1,150					582	1,150		
Total Volume	935	559					1,590	227		
Combined Volatile Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		
Combined Combustible Constitutents										
Carbon	63,514			63,514	0.85	0.15	53.986	9,527		
Chloride	226			226	0.85	0.15	192	34		
Hydrogen	7,963			7,963	0.85	0.15	6,768	1,194		
Oxygen	52,714			52,714	0.85	0.15	44,806	7,907		
Nitrogen	1,622			1,622	0.85	0.15	1.378	243		

List of assumptiondmultipliers:

1. Fraction of soil and sludge carried from deconlrecovery with the decon leachate	15%
2. Fraction of inlet debris returned to Pit 9	85%
3. Fraction of leach chemical in decon leachate from deconlrecovery	25%
4. Fraction of water in leachate from decon/recovery	50%
from deconlrecovery	25%
6. Fraction of leach chemical in debris returned to Pit 9	10%
7. Fraction of water in debris returned to Pit 9	50%
8. Fraction of solids in debris returned to Pit 9	40%
9. Percent weight increase of clean debris back to Pit 9	10%
9. Volume increase of leachate plus debris to Recovery	30%

Repackage for Return to Pit 9

Incoming Streams	Deconned Debris	Drum		Composite Feed	Conversion Factors	Conversion Factors	Repackage Debris	
Component	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)	Mass (kgs)
Steel non-combustible debris	263,170			263,170	1.00	0.00	263,170	0
Water in steel etc.	65,793			65,793	1.00	0.00	65,793	0
Combustible Debris	107,131			107,131	1.00	0.00	107,131	0
Water in combustibles	26,783			26,783	1.00	0.00	26,783	0
Noncombustible Sludge	0			0	0.00	1.00	0	0
Water in noncombustible sludge	0			0	0.00	1.00	0	0
Oil & VOCs	0			0	0.00	1.00	0	0
Soil	0			0	0.00	1.00	0	0
Water in soil	0			0	0.00	1.00	0	0
Decon Solution	92,575			92,575	1.00	0.00	92,575	0
Water in decon solution	370,301			370,301	1.00	0.00	370,301	0
Drums		0		0	1.00	0.00	0	0
Total Mass	925,754	0	0	925,754			925,754	0
Average Density	582						582	0
Total Volume	1,590						1,590	0
Combined Volatile Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	0			0	0.00	1.00	0	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	53,986			53,986	1.00	0.00	53,986	0
Chloride	192			192	1.00	0.00	192	0
Hydrogen	6,768			6,768	1.00	0.00	6,768	0
Oxygen	44,806			44,806	1.00	0.00	44,806	0
Nitrogen	1,378			1,378	1.00	0.00	1,378	0

List of assumptions:

Thermal Desorption

Incoming Streams Component	<60 mm Mass (kgs)	Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	TD Bottoms Mass (kgs)	TD Offgas Mass (kgs)		
Steel non-combustible debris	0			0	1.00	0.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	1.00	0.00	0	0	0.0%	0.0%
Combustible Debris	0			0	1.00	0.00	0	0	0.0%	0.0%
Water in combustibles	0			0	1.00	0.00	0	0	0.0%	0.0%
Noncombustible Sludge	76,492			76,492	1.00	0.00	76,492	0	1.1%	0.0%
Water in noncombustible sludge	26,876			26,876	0.00	1.00	0	26,876	0.0%	1.1%
Oil & VOCs	108,723			108,723	0.00	1.00	0	108,723	0.0%	4.3%
Soil	6,828,182			6,828,182	1.00	0.00	6,828,182	0	98.9%	0.0%
Water in soil	2,399,091			2,399,091	0.00	1.00	0	2,399,091	0.0%	94.7%
Total Mass	9,439,363	0	0	9,439,363			6,904,674	2,534,689	100.0%	100.0%
Average Density	1,248			1,248			913	1.3		
Total Volume	7,564			7.564			7,564	1,949,761		
Combined Volatile Constitutents										
Carbon	29,452			29,452	0.00	1.00	0	29,452		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	0.00	1.00	0	3,686		
Oxygen	466			466	0.00	1.00	0	466		
Nitrogen	34			34	0.00	1.00	0	34		
Combined Combustible Constitutents										
Carbon	0			0	1.00	0.00	0	0		
Chloride	0			0	1.00	0.00	0	0		
Hydrogen	0			0	1.00	0.00	0	0		
Oxygen	0			0	1.00	0.00	0	0		
Nitrogen	0			0	1.00	0.00	0	0		

List of assumptions:

SCWO

Incoming Streams Component	TD Offgas Mass (kgs)	Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	ChemOx Offgas Mass (kgs)	ChemOx Water Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%	0.0%
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in noncombustible sludge	26,876			26,876	0.00	1.00	0	26,876	0.0%	1.0%
Oil & VOCs	108,723			108,723	0.27	0.73	29,486	79,237	50.0%	2.9%
Soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in soil	2,399,091			2,399,091	0.01	0.99	29,486	2,369,606	50.0%	86.9%
Sodium in Caustic	0	50,307		50,307	0.00	1.00	0	50,307	0.0%	1.8%
Water in Caustic	0	201,229		201,229	0.00	1.00	0	201,229	0.0%	7.4%
	0			0	0.00	0.00	0	0	0.0%	0.0%
	0									
Total Mass	2,534,689	251,536	0	2,786,225			58,971	2,727,254	100.0%	100.0%
Average Density	1.3			1.4			1.3	1,000		
Total Volume	1,949,761			1,949,761			45,362	2.727		
Combined Volatile Constitutents										
Carbon	29,452			29,452	1.00	0.00	29,452	0		
Chloride	75,086			75,086	0.00	1.00	0	75,086		
Hydrogen	3,686			3,686	0.00	1.00	0	3,686		
Oxygen	466			466	0.00	1.00	0	466		
Nitrogen	34			34	1.00	0.00	34	0		
Combined Combustible Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		

List of assumptions:

1. Fraction of carbon that exits with offgas as C02,	1.00
2. Fraction of chloride that remains in solution as HCl	1.00
3. Fraction of hydrogen that remains in solution	1.00
3. Fraction of water in offgas	0.50

SCWO Offgas

Incoming Streams Component	ChemOx Offgas Mass (kgs)	Scrub Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Vent Mass (kgs)	Mass (kgs)
Steel non-combustible debris	0			0	0.00	1.00	0	0
Water in steel etc.	0			0	1.00	0.00	0	0
Combustible Debris	0			0	0.00	1.00	0	0
Water in combustibles	0			0	0.00	1.00	0	0
Noncombustible Sludge	0			0	0.00	1.00	0	0
Water in noncombustible sludge	0			0	1.00	0.00	0	0
Oil & VOCs	29,486			29,486	1.00	0.00	29,486	0
Soil	0			0	0.00	1.00	0	0
Water in soil	29,486			29,486	1.00	0.00	29,486	0
	0							
	0							
	0							
Total Mass	58,971	0	0	58,971			58,971	0
Average Density	1.3						1.3	
Total Volume	45,362						45,362	
Combined Volatile Constitutents								
Carbon	29,452			29,452	1.00	0.00	29,452	0
Chloride	0			0	0.00	1.00	0	0
Hydrogen	0			0	1.00	0.00	0	0
Oxygen	0			0	1.00	0.00	0	0
Nitrogen	34			34	1.00	0.00	34	0
Combined Combustible Constitutents								
Carbon	0			0	1.00	0.00	0	0
Chloride	0			0	0.00	1.00	0	0
Hydrogen	0			0	1.00	0.00	0	0
Oxygen	0			0	1.00	0.00	0	0
Nitrogen	0			0	1.00	0.00	0	0

List of assumptions:

Stabilize SCWO Water

Incoming Streams	ChemOx Water Mass (kgs)	Grout Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Stabilized BD Mass (kgs)	Evaporator Vent Mass (kgs)		
Component										
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.00%	
Water in steel etc.	0			0	0.00	1.00	0	0	0.00%	
Combustible Debris	0			0	1.00	0.00	0	0	0.00%	
Water in combustibles	0			0	0.00	1.00	0	0	0.00%	
Noncombustible Sludge	0			0	0.00	1.00	0	0	0.00%	
Water in noncombustible sludge	26,876			26,876	1.00	0.00	26,876	0	5.19%	45.00%
Oil & VOCs	79,237			79,237	1.00	0.00	79,237	0	15.29%	25.00%
Soil	0			0	0.00	1.00	0	0	0.00%	
Water in soil	2,369,606			2,369,606	0.00	1.00	0	2,369,606	0.00%	
Sodium in Caustic	50,307			50,307	1.00	0.00	50,307	0	9.71%	
Water in Caustic	201,229			201,229	1.03	-0.03	206,304	-5,075	39.81%	
Grout	0	155,453		155,453	1.00	0.00	155,453	0	30.00%	
	0								0.00%	
Total Mass	2,727,254	155,453	0	2,882,708			518,177	2,364,530	100.00%	
Average Density	1,000	1,510					1,600	0		
Total Volume	2,727	103					324	0		
Combined Volatile Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	75,086			75,086	1.00	0.00	75,086	0		
Hydrogen	3,686			3,686	0.00	1.00	0	3,686		
Oxygen	466			466	0.00	1.00	0	466		
Nitrogen	0			0	0.00	1.00	0	0		
Combined Combustible Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	1.00	0.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		

List of assumptions:

Percent water in stabilized scrub blowdown	45%
Percent grout in stabilized scrub blowdown	30%
Percent NaCl in stabilized scrub blowdown	25%
Percent Cl in stabilized scrub blowdown	15%

Repackage Stabilized Offgas Scrub Solution

Incoming Streams	Stabilized BD Mass (kgs)	Drum Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Repackage Mass (kgs)	Mass (kgs)
Component								
Steel non-combustible debris	0			0	0.00	1.00	0	0
Water in steel etc.	0			0	0.00	1.00	0	0
Combustible Debris	0			0	0.00	1.00	0	0
Water in combustibles	0			0	0.00	1.00	0	0
Noncombustible Sludge	0			0	1.00	0.00	0	0
Water in noncombustible sludge	26,876			26,876	1.00	0.00	26,876	0
Oil & VOCs	79,237			79,237	1.00	0.00	79,237	0
Soil	0			0	1.00	0.00	0	0
Water in soil	0			0	1.00	0.00	0	0
Scrub Solution	50,307			50,307	1.00	0.00	50,307	0
Watre	206,304			206,304	1.00	0.00	206,304	0
Grout	155,453			155,453	1.00	0.00	155,453	0
Drums		0		0	1.00	0.00	0	0
Total Mass	518,177	0	0	518,177			518,177	0
Average Density	1,600						1,600	0
Total Volume	324						324	0
Combined Volatile Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	75,086			75,086	1.00	0.00	75,086	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	0			0	0.00	1.00	0	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0

List of assumptions:

Volume increase caused by drums in repackaging for WIPP	20%
Weight increase caused by drums in repackaging for WIPP	20%

Leach/Recovery

Incoming Streams Component	TD Bottoms Mass (kgs)	Leachant Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Clean Mass (kgs)	Leachate Mass (kgs)		
Steel non-combustible debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in steel etc.	0			0	0.00	1.00	0	0	0.0%	0.0%
Combustible Debris	0			0	0.00	1.00	0	0	0.0%	0.0%
Water in combustibles	0			0	0.00	1.00	0	0	0.0%	0.0%
Noncombustible Sludge	76,492			76,492	0.90	0.10	68,842	7,649	0.4%	0.2%
Water in noncombustible sludge	0			0	0.00	1.00	0	0	0.0%	0.0%
Oil & VOCs	0			0	0.00	1.00	0	0	0.0%	0.0%
Soil	6,828,182			6,828,182	0.90	0.10	6,145,364	682,818	39.6%	19.8%
Water in soil	0			0	0.00	1.00	0	0	0.0%	0.0%
Leach chemicals		7,767,758		7,767,758	0.80	0.20	6,214,206	1,553,552	40.0%	45.0%
Water in leachant		4,315,421		4,315,421	0.72	0.28	3,107,103	1,208,318	20.0%	35.0%
Total Mass	6,904,674	12,083,179	0	18,987,852			15,535,515	3,452,337	100.0%	100.0%
Average Density	913	1,150					1,712	903		
Total Volume	7,564	10,507					9,077	3,825		
Combined Volatile Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		
Combined Combustible Constitutents										
Carbon	0			0	0.00	1.00	0	0		
Chloride	0			0	0.00	1.00	0	0		
Hydrogen	0			0	0.00	1.00	0	0		
Oxygen	0			0	0.00	1.00	0	0		
Nitrogen	0			0	0.00	1.00	0	0		

List of assumptions/multipliers:

1. Fraction of soil and sludge carried from leach/recovery with the leachate	10%
2. Fraction of inlet soil and sludge returned to Pit 9	90%
3. Fraction of leach chemical in leachate from leach/recovery	45%
4. Fraction of water in leachate leach/recovery	35%
leachate leach/recovery	20%
6. Fraction of leach chemical in soil/sludge returned to Pit 9	40%
7. Fraction of water in soil/sludge returned to Pit 9	20%
8. Fraction of solids in soil/sludge returned to Pit 9	40%
9. Percent weight increase of clean soil and sludge back to Pit 9	10%
10. Volume increase of leachate plus soil and sludge leach/recovery	30%
9. Volume increase of leachate plus soil and sludge to Recovery	0%

Stabilize Clean Soil

Incoming Streams Component	Clean Soil Mass (kgs)	Grout Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Stabilized Soil Mass (kgs)	Mass (kgs)
Steel non-combustible debris	0			0	1.00	0.00	0	0
Water in steel etc.	0			0	1.00	0.00	0	0
Combustible Debris	0			0	1.00	0.00	0	0
Water in combustibles	0			0	1.00	0.00	0	0
Noncombustible Sludge	68,842			68,842	1.00	0.00	68,842	0
Water in noncombustible sludge	0			0	0.00	1.00	0	0
Oil & VOCs	0			0	0.00	1.00	0	0
Soil	6,145,364			6,145,364	1.00	0.00	6,145,364	0
Water in soil	0			0	0.00	1.00	0	0
Leach chemical	6,214,206			6,214,206	1.00	0.00	6,214,206	0
Water in leachant	3,107,103			3,107,103	1.00	0.00	3,107,103	0
Grout	0	3,107,103		3,107,103	1.00	0.00	3,107,103	0
	0							
Total Mass	15,535,515	3,107,103	0	18,642,618			18,642,618	0
Average Density	1,712	1,510					1,600	0
Total Volume	9,077	2,058					11,652	0
Combined Volatile Constitutents								
Carbon	0		0	0	0.00	1.00	0	0
Chloride	0		0	0	0.00	1.00	0	0
Hydrogen	0		0	0	0.00	1.00	0	0
Oxygen	0		0	0	0.00	1.00	0	0
Nitrogen	0		0	0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	0		9,527	9,527	1.00	0.00	9,527	0
Chloride	0		34	34	1.00	0.00	34	0
Hydrogen	0		1,194	1,194	1.00	0.00	1,194	0
Oxygen	0		7,907	7,907	1.00	0.00	7,907	0
Nitrogen	0		243	243	1.00	0.00	243	0

List of assumptions:

Stabilize Leachate from Soil Leach and Debris Decon

incoming Streams	Leach	Grout	Decon	Composite Feed	Conversion Factors	Conversion Factors	Stabilized Leach	
	Mass	Mass	Mass	Mass	Mass	Mass	Mass	Mass
Component	(kgs)	(kgs)	(kgs)	(kgs)	(kgs)	(kgs)	(kgs)	(kgs)
Steel non-combustible debris	0		46,442	46,442	1.00	0.00	46,442	0
Water in steel etc.	0		11,610	11,610	1.00	0.00	11,610	0
Combustible Debris	0		18,906	18,906	1.00	0.00	18,906	0
Water in combustibles	0		4,726	4,726	1.00	0.00	4,726	0
Noncombustible Sludge	7,649		0	7,649	1.00	0.00	7,649	0
Water in noncombustible sludge	0		0	0	0.00	1.00	0	0
Oil & VOCs	0		0	0	0.00	1.00	0	0
Soil	682,818		0	682,818	1.00	0.00	682,818	0
Water in soil	0		0	0	0.00	1.00	0	0
Leach chemical	1,553,552		65,347	1,618,899	1.00	0.00	1,618,899	0
Water in leachant	1,208,318		114,358	1,322,676	1.00	0.00	1,322,676	0
Grout		742,745		742,745	1.00	0.00	742,745	0
Total Mass	3,452,337	742,745	261,389	4,456,471			4,456,471	0
Average Density	903	1,510	1,150				1,600	0
Total Volume	3,825	492	227				2,785	0
Combined Volatile Constitutents								
Carbon	0		0	0	0.00	1.00	0	0
Chloride	0		0	0	0.00	1.00	0	0
Hydrogen	0		0	0	0.00	1.00	0	0
Oxygen	0		0	0	0.00	1.00	0	0
Nitrogen	0		0	0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	0		9,527	9,527	1.00	0.00	9,527	0
Chloride	0		34	34	1.00	0.00	34	0
Hydrogen	0		1,194	1,194	1.00	0.00	1,194	0
Oxygen	0		7,907	7,907	1.00	0.00	7,907	0
Nitrogen	0		243	243	1.00	0.00	243	0

List of assumptions:

Repackage

Incoming Streams Component	Stabilized Leachate Mass (kgs)	Drum Mass (kgs)	Mass (kgs)	Composite Feed Mass (kgs)	Conversion Factors Mass (kgs)	Conversion Factors Mass (kgs)	Repackaged Leachate Mass (kgs)	Mass (kgs)
Steel noncombustible debris	46,442			46,442	1.00	0.00	46,442	0
Water in steel etc.	11,610			11,610	1.00	0.00	11,610	0
Combustible Debris	18,906			18,906	1.00	0.00	18,906	0
Water in combustibles	4,726			4,726	1.00	0.00	4,726	0
Noncombustible Sludge	7,649			7,649	1.00	0.00	7,649	0
Water in noncombustible sludge	0			0	1.00	0.00	0	0
Oil & VOCs	0			0	1.00	0.00	0	0
Soil	682,818			682,818	1.00	0.00	682,818	0
Water in soil	0			0	1.00	0.00	0	0
Leach chemical	1,618,899			1,618,899	1.00	0.00	1,618,899	0
Water in leachant	1,322,676			1,322,676	1.00	0.00	1,322,676	0
Grout	742,745			742,745	1.00	0.00	742,745	0
Drums		891,294		891,294	1.00	0.00	891,294	0
Total Mass	4,456,471	891,294		5,347,766			5,347,766	0
Average Density	1,600						1,600	
Total Volume	2,785						3,342	
Combined Volatile Constitutents								
Carbon	0			0	0.00	1.00	0	0
Chloride	0			0	0.00	1.00	0	0
Hydrogen	0			0	0.00	1.00	0	0
Oxygen	0			0	0.00	1.00	0	0
Nitrogen	0			0	0.00	1.00	0	0
Combined Combustible Constitutents								
Carbon	9,527			9,527	1.00	0.00	9,527	0
Chloride	34			34	1.00	0.00	34	0
Hydrogen	1,194			1,194	1.00	0.00	1,194	0
Oxygen	7,907			7,907	1.00	0.00	7,907	0
Nitrogen	243			243	1.00	0.00	243	0

List of assumptions:

Summary of Disposal

	Disposal at WIPP		Return to Pit 9	
	Weight, kg	Volume, m^3	Weight, kg	Volume, m^3
Assay			9,983,924	9,442
Stabilized Leach and Decon Leachate	5,347,766	3,342		
Leached Soil/sludge			18,642,618	11,652
Stabilized ChemOx Solution			518,177	324
			925,754	1,590
Total	5,347,766	3,342	30,070,474	23,007

1. Total volume to WPP	3,342
2. Total volume to Pit 9	23,007
3. Increase in volume returned to Pit 9	122%
4. Volume of secondary waste	0

PIT 9 BASIS.XLS

Basis for Pit 9 Treatment Alternatives

Feed Component	kgs	Assumed fraction >100 nCi/g
Steel & Non-combustible debris (Dry basis)	619,224	0.5
Water in steel etc.	154,806	0.5
Combustible Debris (Dry basis)	252,074	0.5
Water in combustibles	63,016	0.5
Noncombustible Sludge (Dry basis)	152,982	0.5
Water in noncombustible sludge	53,751	0.5
Oil & VOCs	217,445	0.5
Dry Soil	13,656,364	0.5
Water in soil	4,798,182	0.5
Total Mass	19,953,315	0.5
Water Subtotal	5,066,851	
Total Volume m3	18,866	
Average Density kg/m3	1,057	
Total Volume as Buried, kg/m3	13,912	
Combined Volatile Constitutent Breakdown		
Carbon	58,904	0.5
Chloride	150,171	0.5
Hydrogen	7,371	0.5
Oxygen	932	0.5
Nitrogen	67	0.5
Combined Nonvolatile Combustible Constitutents		
Carbon	127,027	0.5
Chloride	452	0.5
Hydrogen	15,925	0.5
Oxygen	105,427	0.5
Nitrogen	3,243	0.5

Average density of moist loose debris as dug	291 kg/m3
Average density of moist loose soil as dug and fluffed	1,248 kg/m3
Volume of soil and sludges as dug and fluffed	15,128 m3
Volume of debris as dug	3,742 m3

Segregation	
Fraction of debris that gets shredded (including associated water)	100%
Fraction of sludge, oil/VOC, and soil that does not get shredded (including associated water)	100%
Shredding	
Percent volume decrease shredded debris	50%
Percent of shredded debris that goes to Repackage	100%
Density of shredded debris, kg/m3	582
Thermal Treatment	
Density of thermal treatment ash, kg/m3	1600
Repackaging	
Volume increase caused by drums in repackaging for WIPP	20%
Weight increase caused by drums in repackaging for WIPP	20%
Volume increase caused by drums in repackaging for return to Pit **9**	0%
Weight increase caused by drums in repackaging for return to Pit **9**	0%
Blowdown	
Percent NaCl in scrub blowdown assuming 25% NaCl in final stabilized waste	36%
Percent water in stabilized scrub blowdown	45%
Percent grout in stabilized scrub blowdown	30%
Percent NaCl in stabilized scrub blowdown	25%
Percent Cl in stabilized scrub blowdown	15%
Thermal Desorption/Solvent Extraction	
Percent of incoming dry soil/sludge that passes through to leaching	100%
Fraction of incoming water and organics that passes to the condensor	100%
Condenser/Decanter	
Fraction of the incoming organics that partition to the water condensate	10%
Fraction of the incoming organics sent to an offsite vendor	**90%**
GAC	
Fraction of organics in condensate adsorbed by the GAC	90%
Fraction of organics in condensate sent to the pond	10%
Adsorption capacity of organic on GAC, kg org/kg C	0.20
Adsorption capacity of water on GAC kg H2O/kg C	0.20
Leach/Recovery	
1. Fraction of soil and sludge carried from leach/recovery with the leachate	10%
2. Fraction of inlet soil and sludge returned to Pit 9	**90%**
3. Fraction of leach chemical in leachate from leachlrecovery	**45%**
4. Fraction of water in leachate leach/recovery	35%
5. Fraction of soil/sludge in leachate leach/recovery	20%
6. Fraction of leach chemical in soil/sludge returned to Pit **9**	40%
7. Fraction of water in soillsludge returned to Pit **9**	20%
8. Fraction of solids in soil/sludge returned to Pit 9	40%
9. Percent volume increase of clean soil and sludge back to Pit **9**	**10%**

10. Volume increase of leachate plus soil and sludge leachlrecovery	30%
Decon/Recovery	
1. Fraction of soil and sludge carried from deconlrecovery with the decon leachate	15%
2. Fraction of inlet debris returned to Pit **9**	**85%**
3. Fraction of leach chemical in decon leachate from deconlrecovery	25%
4. Fraction of water in leachate from deconlrecovery	50%
5. Fraction of debris in leachate from deconlrecovery	25%
6. Fraction of leach chemical in debris returned to Pit 9	10%
7. Fraction of water in debris returned to Pit 9	50%
8. Fraction of solids in debris returned to Pit **9**	**40%**
9. Percent weight increase of clean debris back to Pit **9**	10%
10. Volume increase of leachate plus debris to Recovery	30%
Stabilization	
Percent increase in soillsludge weight due to grout stabilization	20%
Grouted soil/sludge/blowdown waste density, kg/m3	1600
Compaction	
Percent volume decrease for shredded debris in compaction	50%
Weight increase for debris in compaction due to drums	10%
Percent volume decrease for sludge/soil/grout/glass in compaction	0%
Weight increase for sludgelsoillgroutlglass in compaction due to drums	0%
Density of compacted, homogenized soil and shredded debris, kg/m3	1600
Melting	
Maximum glass/slag density per TRUPACT II including drum, kg/m3	2128
Offgas	
Density of offgas, kg/m3	1.3
SCWO	
Fraction of carbon that exits with offgas as C02,	1.00
Fraction of chloride that remains in solution as HCI	1.00
Fraction of hydrogen that remains in solution	1.00
Fraction of water in offgas	0.50
Concentration of Caustic	20%
sort	
Fraction of inlet waste that exits sorting	100%

Waste as buried:

9,739	m3	350,000 ft3	soil
4,174	rn3	150,000 ft3	wastes (debris and sludges)
13,913	m3	500,000 ft3	total as buried

Retrieved wastes are 20wt% water in debris, 26wt% water in soil and sludges

Recalculate volumes as retrieved

Soil	13,656,364	Volume of soil =	9,739		
Sorbents	152,983	Volume of sludges =	346	(80% of 2077 drums)	
organics	217,445	Total volume m3 =	10,085		
water	4,851,933	Assume 33% void =	15,128		
Total	18,878,725	Nominal density =	1,248	kg/m3	76 lb/ft3
Debris	1,089,123 kg	Volume of debris =	3,742	m3	
		Nominal density =	291	kg/m3	18 lb/ft3

Total volume of dug soil and debris	18,869
Total average density	1,058
Total compacted volume	16,375
Average compacted density	1,219

PIT 9 SUMMARY DISPOSAL.XLS

Summary of Disposal Volumes for Pit 9 Treatment Alternatives

Total Volume Removed from Pit 9	13,913
Original Volume >100 nCi/g	6,957

	Ship to WIPP	% Volume Reduction to WIPP	Return to Pit 9	Pit 9 Return Ratio	Secondary Waste to Offsite Treatment	Process
Alternative 1	7,522	-8%	9,442	0.68	0	Compact everything
Alternative 2a	5,411	22%	9,756	0.70	0	Shred and thermally treat all waste
Alternative 2b	3,390	51%	9,616	0.69	0	Shred and melt all waste
Alternative 3a	3,465	50%	21,093	1.52	204	Segregate debris, thermally desorb and leach soil, shred and compact debris, condense and treat organics offsite
Alternative 3b	3,465	50%	21,093	1.52	204	Segregate debris, solvent extract and leach soil, shred and compact debris, condense and treat organics offsite
Alternative 4a	750	89%	21,408	1.54	0	Segregate debris, thermally desorb and leach soil, shred and thermally treat debris and condensed organics
Alternative 4b	564	92%	21,408	1.54	0	Segregate debris, thermally desorb and leach soil, shred and melt debris and condensed organics
Alternative 4c	750	89%	21,408	1.54	0	Segregate debris, solvent extract and leach soil, shred and thermally treat debris and condensed organics
Alternative 4d	564	92%	21,408	1.54	0	Segregate debris, solvent extract and leach soil, shred and melt debris and condensed organics
Alternative 5a	3,342	52%	22,683	1.63	204	Segregate debris, thermally desorb and leach soil, shred and decon debris, treat condensed organics offsite
Alternative 5b	3,342	52%	23,232	1.67	0	Segregate debris, thermally desorb and leach soil, shred and decon debris, thermally treat condensed organics onsite
Alternative 5c	3,342	52%	23,007	1.65	0	Segregate debris, thermally desorb and leach soil, shred and decon debris, SCWO condensed organics onsite
Alternative 5d	3,342	52%	23,007	1.65	0	Segregate debris, thermally desorb and leach soil, shred and decon debris, ChemOx condensed organics onsite

Ship to WIPP - Total volume of waste that is shipped to WIPP following treatment
% Volume Reduction to WIPP - Ratio of the volume sent to WIPP to the total volume >100 nCi/g excavated from Pit 9
Return to Pit 9 - Total volume of waste that is returned to the pit, including that which is assayed at <100 nCi/g, but without treatment
Pit 9 Return Ratio - Ratio of volume of waste returned to Pit 9 (including that which is <100 nCi/g) , to the total excavated waste
Secondary Waste to Offsite Treatment - Includes spent activated carbon and recovered volatile organics

	Ship to WIPP	% Volume Reduction to WIPP	Return to Pit 9	Pit 9 Return Ratio	Secondary Waste to Offsite Treatment
Alternative 2ap	nla	nla	5.059		0
Alternative 3ap	nla	nla	8,499		204
Alternative 3bp	n/a	nla	8,499		204

PIT 9 TREATMENT FEED BASIS.XLS

Operating Data	Input
Years	2
Days/Year	200
Hours/Operating Day	24
Operating Hours	9600

Feed Rates	
Total to Melter	1,040 kg/hr
	24,960 kg/day
Total to Incinerator	
Total to Leach (dry)	719 kg/hr
	17,262 kg/day

	kgs	mass%	m3	Vol%
Combustibles	1.58E+05	2%	5.41E+02	6%
Non-comb Debris	3.87E+05	4%	1.33E+03	14%
Soil+ inert sludge	9.33E+06	93%	7.48E+03	79%
VOCs and Oil	1.09E+05	1%	8.71E+01	1%
Total	9.98E+06		9.43E+03	

	kgs	wt%
Water	2.53E+06	25%
Comb, VOCs & Oil	2.35E+05	2%
Chlorine	75311.356	1%
Metals	3.10E+05	3%
Soil & Sorbents	6.90E+06	69%
Total	9.98E+06	100%

Pit 9 Retrieved Volumes and Masses
Planning Basis

	Total kg	
Steel (Cs and SS) including drums	5.4E+05	
Rocky Flats Sludges (minus drums)	4.5E+05	
Miscellaneous Inorganic debris	7.5E+04	
Combustibles (plastic. wood. RBT)	2.5E+05	
Water in debris as disposed	6.5E+04	This is not used in feed basis. water is estimated In equilibrium with 26wt% water in soil
Total Waste Mass as buried =	1.4E+06	
Plutonium	2.9E+01	
Total Soil @ 350,000 ft3, 116#/ft3	1.8E+07	

Total Drums	3548
Total 74 Series Sludge Drums	2077

Nominal Sludge Data (Composition in kgs)

Type	741	742	743	744	745
#Drums	431	198	1140	42	266
Cement	20	20		120	
Microcel			45		
Bentonite			7		
Magnesia				23	
NaNO3					73
KNO3					36
Water	110	118		50	21
Water Treatment Sludges	70	79			
Texam Regal Oil			39		
CCl4			83		
TCA			19		
TCE			22		
Freon 113			1		
PERC			24		
Ethanol				17	
EDTA				17	
Ascorbic Acid				17	
Misc Organic Combustibles					12
Total Mass Sludge per drum	2.00E+02	2.17E+02	2.41E+02	2.43E+02	1.43E+02
Drum Mass	2.27E+01	2.27E+01	2.27E+01	2.27E+01	2.27E+01
Total Mass	2.23E+02	2.40E+02	2.64E+02	2.66E+02	1.65E+02
Check vs. Ciements 1982 in lbs:	4.90E+02	5.28E+02	5.80E+02	5.85E+02	3.64E+02

Breakdown

Incoming Streams

Component	kgs
Steel & Non-combustible debris (Dry basis)	6.19E+05
Water in steel etc.	1.55E+05
Combustible Debris (Dry basis)	2.52E+05
Water in combustibles	6.30E+04
Noncombustible Sludge (Dry basis)	1.53E+05
Water in noncombustible sludge	5.38E+04
Oil & VOCs	2.17E+05
Dry Soil	1.37E+07
Water in soil	4.80E+06
Total Mass	19,967,847
Water Subtotal	5.07E+06
Total Volume m3	1.89E+04
Average Density kg/m3	1.06E+03
Combined Volatile Constitutent Breakdown	
Carbon	5.89E+04
Chloride	1.50E+05
Hydrogen	7.37E+03
Oxygen	9.32E+02
Nitrogen	6.71E+01
Combined Nonvolatile Combustible Constitutents	
Carbon	1.27E+05
Chloride	4.52E+02
Hydrogen	1.59E+04
Oxygen	1.05E+05
Nitrogen	3.24E+03

Waste as buried

9739 m3	350000 ft3	soil
4174	150000 ft3	wastes

Retnevedwastes are assumed 20wt% water in debris. 26wt% water in soil and sludges
Assume retnevedsoils are Ruffed to 33% void fraction
Assume debns volume is as buned
Assume all sludges are loose and become mixed with soil 14609

Recalculate volumes as retneved

Soil dry mass	14E+07	Volume of sludges =	347E+02 (80% of 2077 drums)	
Sorbents	1.5E+05	Vol or soil + sludge =	1.01E+04 (80% of 2077 drums)	
VOCs & Oil	2.2E+05			
Water	4.9E+06	Assume 33% void =	1.51E+04 m3	
Total	1.9E+07	Nominal density =	1.25E+03 kg/m3	76 lb/ft3
Debns	11E+06 kg	Volume of debns (substracbng sludge drums) =	3.74E+03 m3	
		Nominal density =	2.91E+02 kg/m3	18 lb/ft3
		Average density of	1.06E+03 kg/m3	65 lb/ft3
		Check vs volume weighted a erage	1.06E+03 kg/m3	65 lb/ft3

Mass fraction of soil: 92%
Volume fraction soil: 77%

Assumptions
26% water in all debris as retrieved (debris gains water from soil in equilibrating)
26% water in soils and sludges as retrieved (sludges lose water to soil in equilibrating)
No reduction in leachable or deco nposable materials

Mass Balance in LBS

component	741	742	743	744	745	MT-Drums	Drum/Box Waste	Soil	Stainless Steel	Other Stuff	TOTAL	
			SLUDGES									
# drums (E61Report)	431	198	1140	42	266	1471	360					
Total Mass lbs (Clements #/dr)	211 190	104,544	661,200	24570	96824	73,550	711,000	40,600,000	477,400	679,556	43,639,834	
Steel Fe (50#/dr)	21 550	9900	57000	2100	13300	73,550	18,000		353.276	524,000	1,072,676	
Sludge Mass without drum	189,640	94,644	604,200	22470	83524						994,478	
Added Cement/rock -Subtotal	19,398	8,910	0	11,134	0		9,936			67,500		
Cement/rock - CaO	12,607	5,792		7,237			497			7,088	33,219	
Cement/rock - SiO2	4073	1,871		2 338			5.962			33,818	48,061	
Cement/rock Al2O3	1 164	535		668			2981			16,605	21,952	
Cement/rock Fe2O3	582	267		334						203	1,386	
Cement/rock MgO	388	178		223						135	924	
Cement/rock Na2O	194	89		111			497			2.758	3.659	
Cement/rock SO3	388	178		223						135	924	
MicroCel CaO			55,034								55,054	
MicroCel SiO2			58 966								58 966	
Oil Dry - (bentonite) Subtotal			16,440									
Bentonite SiO2			10636								10,636	
Bentonite Al2O3			3 781								3 781	
Bentonite -Na2O			493								495	
Bentonite MgO			E58								658	
Bentonite - H2O			822								822	
MgO				2,100							2100	
NaNO3					42.597						42 597	
KNO3					21 299						21,299	
Water	103,849	51,440		4,618	12529		135600	10, 556000		6,750	10,870,787	
Organic Liquids/Combustibles Subtotal			473,760	4,618	7,100							
Organic C			121 523	2,066	3905		275 555				409,049	
Organic - H			15,861	355	426		34 609				51.251	41,916 Net H2 - H inHCl
Organic - Cl/F			330.376	0	994						331,370	340704 3 HClconverted to HCl
Organic - O				2050	1,420		230 520				233,990	
Organic N				148	355		6,780				7.283	
Wet ppt sludge - Subtotal	170,245	85,734										
PPT Solids - SiO2	25537	16289						16.470 121			16,511,947	
PPT Solids - Al2O3	5,107	1,715						6405 381			6,412,203	
PPT Solids - Fe2O3	5,107	1,715						958 404			965,226	
PPT Solids - MgO	3,405	3.429						483 708			490.543	
PPT Solids - CaO	3,405	8,573						513 752			525,731	
PPT Solids - K2O	3,405	857						675 990			630.252	
PPT Solids - Na2O	20,429	1,715						204 299			226,443	
PPT Solids - Ca											0	
PPT Solids - Ce											0	
PPT Solids - Al											0	
PPT Solids - Fe											0	
PPT Solids - K											0	
PPT Solids - Mg											0	
PPT Solids - Na											0	
											0	
Soil - hydrate H20								727.065			727,065	
Soil - CaCO3								3,605,280			3,605,280	
											0	
SS - Cr									85,932		85.932	
SS - Ni									38,192		38,192	
RF&INEEL uranium - oxides?										25,576	25.576	
Other - Pb										6,600	6,600	
Other - Al										5.060	5.060	
Other - Zr										33,000	33,000	
Other - Asbestos (SiO2)										383	383	
Other - Asbestos (MgO)										383	383	
Other - Asbestos (H20)										114	114	
Other - Sand (SiO2)										16,940	16,940	
Other - Masonary										See note	0	
											44,634,312	
Total	211,190	104,544	661,200	24,570	96,824	73,550	71 1,000	40,600,000	477,400	679,556	43,639,834	93%
Diff Check ==========>	0	0	0	0	0	0	0	0	0	0	0	

Subtotals		
Sludges	1,098,326 lbs	498,249 kg
Balance	1,941,508 lbs	882,503 kg
Total Waste	3,039,834 lbs	1,381,243 kg
Soil	40,600,000 lbs	18,454,545 kg
Total Waste + Soil	43,639,834 lbs	19,835,788 kg

Combustibles in 745 sludge mixed plastic/cellulostic estimated at 55%C, 6%H, 14%Cl, 20%O, 5%N
Estimate for 745 sludge is 15% water, balance is 60% NaNO3, 30%KNO3, 10% cellulose above
Mortar/masonary (150lb/ft3) in waste distributed as 10% cement constituents, 10% water, 80% rock
Rock estimated as 60%SiO2, 30%Al2O3, 5%CaO, 5%Na/K2O
Asphalt is assumed to be pavement, 8% petroleum CnH2n, 92% rock aggregate
Wooden boxes 253,000 lbs, 20%H2O, 40%C, 5%H, 34%O, 1%N
Wood scraps, 1/3 void fraction, SpG= 51, rounded to 425,000 lb, wood composition as above
Oil at 56lb/ft3, rounded to 4200 lb
Steel in Other Stuff is from 4a Specification, total CS less reactor parts and drums

Based on 5080 hours of CTS Operation
Assume 50% of waste is treated

Soil basis

Nominal Composition

Compound	wt%
Si02	0.41
A1203	0.16
Fe2O3	0.02
MgO	0.01
CaO	0.01
K20	0.02
Na20	0.01
CaCO3	0.09
H20 Hydrate	0.02
H20 Interstitial	0.26

Maximum Soil Volume	350000 ft3	ROD
Packed Mud Density	116 lb/ft3	Perry's Handbook
Maximum Soil Mass	1.85E+07 kg	

Pit 9 size	calc ft3	ROD ft3
127x379x17.5	842328	750000

		Soil	Waste	Delta %
Waste Zone				
8 ft thick	385064	181534.5	150000	14%
Overburden 6ft	288798	250000		13%
Underburden 3.5ft	168466	168465.5		mute

Void Fraction

Drums		Particles*
Minimum for Hexagonal Close Packed Drums		20.00%
[(sqrt3*D^2)/4)-.5*pi*D^2/4]/(sqrt3*D^2)/4) =	**9%**	
Simple Cubic Array		
[(D^2-pi*D^2)/4]/D^2=	21%	48%
Random (interpolate from particle data)	16%	
		35%

*From Moghissi

Actual % Soil in Waste Zone > 47%

Q.E.D. Calculated void fraction is moot.

Organic Sludge Composition using Einerson and Thomas

Organics Sludges, kg	743 Sludge **gallons**	744 Sludge **gallons**	Density **kg/gal**	C **kg**	Cl **kg**	H **kg**	O **kg**	F **kg**	N **kg**	Total **kg**		**MW**
Organic Liquids	37	26.4										
Regal + Hydraulic oil	11		3.41	33		6				39	C30H62	422
Carbon Tetrachloride	14		6.04	6	77					83	CCl4	154
Trichloroethane (mixture)	3.7		5.26	3	16	0				19	C2Cl3H3	133.5
Trichloroethylene	4.0		5.54	4	18	0				22	CHClCCl2	131.5
Freon 113	0.1		5.98	0	0			0		1	CCl3CF3	187.5
Tetrachloroethylene	4.0		6.14	**4**	21					24	CCl2CCl2	166
Ethanol		4	3.79	9		2	6			17	CH3CH2OH	46
Versenes (EDTA)		4	3.79	7		1	7		2	17	C1OH16N2O8	292
Ascorbic Acid		4	3.79	7		1	9			17	C6H8O6	176
Water		13	3.79			6	**44**			50	H20	18
743 Sludge Subtotal				51	132	6	0	0	0	189		
744 Sludge Subtotal - water				22	0	9	67	0	2	100		
Subtotal												

Average Drum Weight	264	266	
MicroCel Calcium Silicate	45		
Oil-Dri (Bentonite)	7		22470
Cement		120	11134
Magnesia		23	2100
Drum Weight (steel)	23	23	2100
Organic liquids	189	100	9236
Check vs Composition Total	264	266	

Note: 43% of miscellaneous organics in 743 sludge, 25%CCl4, 25%TCE, 25% PCE, 0.3%Freon-113, 24.7% oil per E&T

Note: Complexing Chemicals in 744 sludge = 33%1 each of Ethanol, EDTA, Ascobic E&T, but dissolved in H20 to make a 50%solution per Gornbe