SECTION 4

PROCESS INFORMATION

Attachment 4-3
Equipment Footprint Calculations

MIXED WASTE FACILITY
RCRA/TSCA PERMIT APPLICATION

PERMA-FIX NORTHWEST RICHLAND, INC.

RICHLAND, WASHINGTON

Equipment Footprint Calculations

Mounted Equipment Volumes

The volume of first 6 inches of equipment to subtract from available secondary containment volume
Volumes Displaced by Equipment Footprints

Mounted Equipment In Non-Thermal Area Volumes
The equipment volume displacement is based on the entire foot print of the equipment to be conservative

	Dimensions of unit (feet)				Effective	Volume	
	width	length	depth	# of units	Footprint	ft^3	Reference
TP-07 Super Compactor	18.12	27.54	0.5	1	1	285.24	DWG-STB-GA-TP07-001
(2 sections)	12.32	5.8	0.5	1	1		DWG-STB-GA-FAC-001A
TT-02 Low Capacity Mixer	8	20.5	0.5	1	1	82.00	DWG-STB-GA-TT02-001
Baghouse 1 & 2 in Room SB-04	5.07	3.62	0.5	2	1	18.35	DWG-STB-GA-FAC-001A
TP-01 Screening	7.3	13.3	0.5	1	1	112.25	DWG-STB-GA-TP01-001
(2 sections)	9.8	13	0.5	1	1		
Inspection Table in SB-05	3.62	18.84	0.5	1	1	48.53	DWG-STB-GA-FAC-001A
(2 sections)	3.62	7.97	0.5	1	1		
SUM						546	

Equipment Footprint Calculations

Mounted Equipment In Thermal Area Volumes
The equipment volume displacement is based on the entire foot print of the equipment to be conservative

	Dimensions of unit (feet)				Effective	Volume	
	width	length	depth	# of units	Footprint	ft^3	Reference
TT-08 Thermal Desorber	11.54	12.18	0.5	1	1	140.24	DWG-GVB-GA-FAC-001
(3 sections)	3.21	27.56	0.5	1	1		
	3.21	16.03	0.5	1	1		
TT-07 Plasma Furnace*	5.13	11.54	0.5	1	1	77.49	DWG-GVB-GA-FAC-001
(3 sections)	4.49	12.18	0.5	1	1		
	6.41	6.41	0.5	1	1		
TT-13 Vitrification*						1076.13	DWG-GVB-GA-FAC-001
melter area	3.62	5.07	0.5	1	1		9.18
melter area	21.15	16.67	0.5	1	1		176.29
off gas treatment	9.62	23.72	0.5	1	1		114.09
off gas treatment	12.82	17.31	0.5	1	1		110.96
off gas treatment	7.05	17.95	0.5	1	1		63.27
off gas treatment	10.9	20.51	0.5	1	1		111.78
and piping connect	3.21	7.05	0.5	1	1		11.32
	3.21	8.97	0.5	1	1		14.40
	13.46	21.15	0.5	1	1		142.34
	10.9	20.51	0.5	1	1		111.78
	1.92	42.31	0.5	1	1		40.62
	3.33	8.97	0.5	1	1		14.94
off gas treatment	9.62	23.72	0.5	1	1		114.09
off gas treatment	6.41	6.41	0.5	1	1		20.54
off gas treatment	6.41	6.41	0.5	1	1		20.54
SUM						1294	

*Although these units are not in use, the footprint displacement was included for conservative calculations.

	Dimentions of unit (feet)			Effective	Volume	
	diameter	depth	# of units	Footprint	ft^3	Reference
Tank-310 in MWT-04	5.5	0.5	1	1	11.9	field measure
Tote in MWT-04	3.43	0.5	1	1	4.6	
SUM					16.5	

Equipment Footprint Calculations

Portable Equipment Volumes
Assume all portable units are on some type of skid. To be most conservative, assume 6" high and 50% effective footprint of equipment

	Dimentions of unit (feet)				Effective	Volume	
	width	length	depth	# of units	Footprint	ft^3	Reference
TP-02 Cutting Tables	3.7	9.25	0.5	2	0.5	17.11	(typical) ATG dwg 31001-M-106
TP-03 Sorting Glove Box	4.33	14.17	0.5	1	0.5	15.34	(typical) MEC drawing M1112734001
TP-03 Sorting Tables	3.7	9.25	0.5	2	0.5	17.11	(typical) ATG dwg 31001-M-106
TP-04 Liquid Treatment Totes	4	6	0.5	4	0.5	24.00	General manufacturer info - based on dimensions of 550 gal tote
TP-07 In drum Compactor	3	3.3	0.5	1	0.5	2.48	DWG-MW-GA-009
TP-10 Extraction Mixer	4.7	7.9	0.5	2	0.5	18.57	Manufacturer dimensions
TT-01 High Capacity Mixer	8	20.5	0.5	1	0.5	41.00	DWG-STB-GA-TT01-001
TT-03 In-Container Mixer	6	16.25	0.5	1	0.5	24.38	DWG-STB-GA-TT03-001
TT-03 Drum Roller	3	6	0.5	1	0.5	4.50	General manufacturer info
TT-05 Abrasive blasting	5	20	0.5	1	0.5	25.00	DWG-STB-GA-TT05-001
TT-09 Hg Bench - glove box	2.5	3	0.5	1	0.5	1.88	General manufacturer info
TT-09 Hg Bulk - mixer + equipment	3	10	0.5	1	0.5	7.50	DWG-STB-GA-TT09-001
TT-10 Debris wash in container	10	6	0.5	1	0.5	15.00	DWG-STB-GA-TT10-001
TT-10 Debris wash in vat	3.8	13.58	0.5	1	0.5	12.90	DWG-STB-GA-TT10-001
SUM						227	