

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)			depth	# of units	Effective Footprint	Volume ft ³	Reference
	width	length						
TP-07 Super Compactor (2 sections)	18.12	27.54		0.5	1	1	285.24	DWG-STB-GA-TP07-001
TT-02 Low Capacity Mixer	12.32	5.8		0.5	1	1		DWG-STB-GA-FAC-001A
Baghouse 1 & 2 in Room SB-04	8	20.5		0.5	1	1	82.00	DWG-STB-GA-TT02-001
TP-01 Screening	5.07	3.62		0.5	2	1	18.35	DWG-STB-GA-FAC-001A
(2 sections)	7.3	13.3		0.5	1	1	112.25	DWG-STB-GA-TP01-001
Inspection Table in SB-05	9.8	13		0.5	1	1		
(2 sections)	3.62	18.84		0.5	1	1	48.53	DWG-STB-GA-FAC-001A
	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)			depth	# of units	Effective Footprint	Volume ft ³	Reference
	width	length						
TT-08 Thermal Desorber (3 sections)	11.54	12.18		0.5	1	1	140.24	DWG-GVB-GA-FAC-001
	3.21	27.56		0.5	1	1		
	3.21	16.03		0.5	1	1		
TT-07 Plasma Furnace (3 sections)	5.13	11.54		0.5	1	1	77.49	DWG-GVB-GA-FAC-001
	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	

*Assumed new configuration would occupy same space since some equipment to be reused

	Dimensions of unit (feet)			depth	# of units	Effective Footprint	Volume ft ³	Reference
	diameter							
In Room MWT-01								
Feed Tank VT-01	6			0.5	1	1	14.1	Tank VT-01 and VT-02 drawing
Feed Tank VT-02	6			0.5	1	1	14.1	Tank VT-01 and VT-02 drawing
Feed Tank VT-03	3			0.5	1	1	3.5	Tank VT-03 drawing
SUM							31.8	

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

	Dimensions of unit (feet)			depth	# of units	Effective		Reference
	width	length	Volume			Footprint	ft ³	
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 M112734001	
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		

	Dimensions of unit (feet)			depth	# of units	Effective		Reference
	diameter		Volume			Footprint	ft ³	
<90 day tank in MWT-04	5.5		0.5	1	1	11.9	Reference	
<90 day tank in MWT-04	3.43		0.5	1	1	4.6	field measure	
SUM						16.5		