TABLE 1

FACILITY-WIDE (STATIONARY SOURCE) POTENTIAL TO EMIT POUNDS/HOUR AND TONS/YEAR

Pollutant	Potential to Emit (pounds/hour)	Potential to Emit (tons/year)
Total Particulate Matter (PM)	5.45	23.67
Particulates as PM_{10}	5.45	22.23
Sulfur Dioxide	0.42	0.24
Carbon Monoxide	25.51	82.68
Carbon Dioxide	1.13E+04	4.96E+04
Oxides of Nitrogen	7.57	193.10
Volatile Organic Compounds	22.57	96.91
Lead	7.27E-05	3.18E-04
Hazardous Air Pollutants (Specify Each Pollutant)	1.65	7.20
See Appendix 6 for detailed HAPs calculations from each of the emission source		
Other Regulated Pollutants (Specify)		
See Appendix 6 for detailed other regulated pollutants calculations from each of the emission source		

TABLE 2
INSIGNIFICANT ACTIVITIES
POTENTIAL TO EMIT
POUNDS/HOUR AND TONS/YEAR

Insignificant Activity	Pollutant	Potential to Emit (pounds/hour)	Potential to Emit (tons/year)
Back-Up Well Water Pump	PM	2.81E-02	1.23E-01
	PM_{10}	2.81E-02	1.23E-01
	SO_2	1.97E-03	8.62E-03
	NO_X	0.78	3.42
	CO	7.25E-01	3.18E+00
	Lead	-	-
	VOC	4.67E-01	2.04E+00
	HAPs	-	-
Warm-Up Boiler	PM	3.13E-02	1.37E-01
	PM_{10}	3.13E-02	1.37E-01
	SO_2	2.47E-03	1.08E-02
	NO_X	0.41	1.80
	CO	3.46E-01	1.51E+00
	Lead	2.06E-06	9.02E-06
	VOC	4.53E-02	1.98E-01
	HAPs	7.77E-03	3.40E-02

TABLE 2
INSIGNIFICANT ACTIVITIES
POTENTIAL TO EMIT
POUNDS/HOUR AND TONS/YEAR

South Building Heater	PM	5.59E-04	2.45E-03
	PM_{10}	5.59E-04	2.45E-03
	SO_2	4.41E-05	1.93E-04
	NO_X	7.35E-03	3.22E-02
	CO	6.18E-03	2.71E-02
	Lead	3.68E-08	1.61E-07
	VOC	8.09E-04	3.54E-03
	HAPs	1.39E-04	6.08E-04
Control Room E Heater	PM	1.12E-03	4.90E-03
	PM_{10}	1.12E-03	4.90E-03
	SO_2	8.82E-05	3.86E-04
	NO_X	1.47E-02	6.44E-02
	CO	1.24E-02	5.41E-02
	Lead	7.35E-08	3.22E-07
	VOC	1.62E-03	7.09E-03
	HAPs	2.78E-04	1.22E-03
West Half Building Heater	PM	7.45E-04	3.26E-03
	PM_{10}	7.45E-04	3.26E-03
	SO_2	5.88E-05	2.58E-04
	NO_X	9.80E-03	4.29E-02
	CO	8.24E-03	3.61E-02
	Lead	4.90E-08	2.15E-07
	VOC	1.08E-03	4.72E-03
	HAPs	1.85E-04	8.11E-04
North Building Heater	PM	5.59E-04	2.45E-03
	PM_{10}	5.59E-04	2.45E-03
	SO_2	4.41E-05	1.93E-04
	NO_X	7.35E-03	3.22E-02
	CO	6.18E-03	2.71E-02
	Lead	3.68E-08	1.61E-07
	VOC	8.09E-04	3.54E-03
	HAPs	1.39E-04	6.08E-04
Shop Heater	PM	7.82E-04	3.43E-03
	PM_{10}	7.82E-04	3.43E-03
	SO_2	6.18E-05	2.71E-04
	NO_X	1.03E-02	4.51E-02
	CO	8.65E-03	3.79E-02
	Lead	5.15E-08	2.25E-07
	VOC	1.13E-03	4.96E-03
	HAPs	1.94E-04	8.51E-04

TABLE 2
INSIGNIFICANT ACTIVITIES
POTENTIAL TO EMIT
POUNDS/HOUR AND TONS/YEAR

Warehouse Heater	PM	7.82E-04	3.43E-03
	PM_{10}	7.82E-04	3.43E-03
	SO_2	6.18E-05	2.71E-04
	NO_X	1.03E-02	4.51E-02
	CO	8.65E-03	3.79E-02
	Lead	5.15E-08	2.25E-07
	VOC	1.13E-03	4.96E-03
	HAPs	1.94E-04	8.51E-04
East MCC Building Heater	PM	1.01E-03	4.41E-03
	PM_{10}	1.01E-03	4.41E-03
	SO_2	7.94E-05	3.48E-04
	NO_X	1.32E-02	5.80E-02
	CO	1.11E-02	4.87E-02
	Lead	6.62E-08	2.90E-07
	VOC	1.46E-03	6.38E-03
	HAPs	2.50E-04	1.09E-03
Admin Building Extension Heater	PM	1.67E-03	7.31E-03
	PM_{10}	1.67E-03	7.31E-03
	SO_2	1.32E-04	5.77E-04
	NO_X	2.20E-02	9.62E-02
	CO	1.84E-02	8.08E-02
	Lead	1.10E-07	4.81E-07
	VOC	2.42E-03	1.06E-02
	HAPs	4.15E-04	1.82E-03
Warehouse II Heater 1	PM	1.12E-03	4.90E-03
	PM_{10}	1.12E-03	4.90E-03
	SO_2	8.82E-05	3.86E-04
	NO_X	1.47E-02	6.44E-02
	CO	1.24E-02	5.41E-02
	Lead	7.35E-08	3.22E-07
	VOC	1.62E-03	7.09E-03
	HAPs	2.78E-04	1.22E-03
Warehouse II Heater 2	PM	1.12E-03	4.90E-03
	PM_{10}	1.12E-03	4.90E-03
	SO_2	8.82E-05	3.86E-04
	NO_X	1.47E-02	6.44E-02
	CO	1.24E-02	5.41E-02
	Lead	7.35E-08	3.22E-07
	VOC	1.62E-03	7.09E-03
	HAPs	2.78E-04	1.22E-03

TABLE 2
INSIGNIFICANT ACTIVITIES
POTENTIAL TO EMIT
POUNDS/HOUR AND TONS/YEAR

Warehouse II Heater 3	PM	1.12E-03	4.90E-03
	PM_{10}	1.12E-03	4.90E-03
	SO_2	8.82E-05	3.86E-04
	NO_X	1.47E-02	6.44E-02
	CO	1.24E-02	5.41E-02
	Lead	7.35E-08	3.22E-07
	VOC	1.62E-03	7.09E-03
	HAPs	2.78E-04	1.22E-03
Warehouse II Heater 4	PM	1.12E-03	4.90E-03
	PM_{10}	1.12E-03	4.90E-03
	SO_2	8.82E-05	3.86E-04
	NO_X	1.47E-02	6.44E-02
	CO	1.24E-02	5.41E-02
	Lead	7.35E-08	3.22E-07
	VOC	1.62E-03	7.09E-03
	HAPs	2.78E-04	1.22E-03
Technical Service Welder	PM	2.61E-02	1.14E-01
	PM_{10}	2.61E-02	1.14E-01
	SO_2	2.14E-02	9.37E-02
	NO_X	3.98E-01	1.74E+00
	CO	2.52E-01	1.10E+00
	Lead	0.00E+00	0.00E+00
	VOC	5.61E-01	2.46E+00
	HAPs	0.00E+00	0.00E+00
Diesel Tank	VOC	1.98E-05	8.67E-05
Gasoline Tank	VOC	5.81E-02	2.54E-01
Cooling Tower 1	PM	4.12E-02	1.80E-01
	PM_{10}	4.12E-02	1.80E-01
Cooling Tower 2	PM	1.03E-01	4.51E-01
	PM_{10}	1.03E-01	4.51E-01

Site-Wide Emission Summary

Source	PM		$PM_{10}/PM_{2.5}$		SO_2		NO_X		CO		CO_2		Lead		VOC		Total HAPs	
Description	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Plant 1 (West) Thermal Oxidizer	2.30	10.07	2.30	10.07	2.60E-03	1.14E-02	-	92.00	10.83	38.00	6.13E+03	2.68E+04	2.75E-05	1.20E-04	9.95	43.58	0.79	3.45
Plant 2 (East) Thermal Oxidizer	2.50	10.95	2.50	10.95	2.88E-03	1.26E-02	-	92.00	11.97	38.00	5.19E+03	2.27E+04	4.24E-05	1.86E-04	11.00	48.18	0.85	3.70
Diesel Generator Plant 1	2.07E-01	5.16E-02	2.07E-01	5.16E-02	1.92E-01	4.81E-02	2.91	0.73	0.63	0.16			-	-	2.36E-01	5.90E-02	2.50E-03	6.26E-04
Diesel Generator Plant 2	2.07E-01	5.16E-02	2.07E-01	5.16E-02	1.92E-01	4.81E-02	2.91	0.73	0.63	0.16			-	-	2.36E-01	5.90E-02	2.50E-03	6.26E-04
Technical Service Welder	2.61E-02	1.14E-01	2.61E-02	1.14E-01	2.14E-02	9.37E-02	0.40	1.74	0.25	1.10			-	-	5.61E-01	2.46E+00	0.00E+00	0.00E+00
Back-Up Well Water Pump	2.81E-02	1.23E-01	2.81E-02	1.23E-01	1.97E-03	8.62E-03	0.78	3.42	0.73	3.18			-	-	4.67E-01	2.04E+00	-	-
Warm-up Boiler	3.13E-02	1.37E-01	3.13E-02	1.37E-01	2.47E-03	1.08E-02	4.12E-01	1.80E+00	3.46E-01	1.51E+00			2.06E-06	9.02E-06	4.53E-02	1.98E-01	7.77E-03	3.40E-02
South Building Heater	5.59E-04	2.45E-03	5.59E-04	2.45E-03	4.41E-05	1.93E-04	7.35E-03	3.22E-02	6.18E-03	2.71E-02			3.68E-08	1.61E-07	8.09E-04	3.54E-03	1.39E-04	6.08E-04
Control Center E Heater	1.12E-03	4.90E-03	1.12E-03	4.90E-03	8.82E-05	3.86E-04	1.47E-02	6.44E-02	1.24E-02	5.41E-02			7.35E-08	3.22E-07	1.62E-03	7.09E-03	2.78E-04	1.22E-03
West Half Building Heater	7.45E-04	3.26E-03	7.45E-04	3.26E-03	5.88E-05	2.58E-04	9.80E-03	4.29E-02	8.24E-03	3.61E-02			4.90E-08	2.15E-07	1.08E-03	4.72E-03	1.85E-04	8.11E-04
North Building Heater	5.59E-04	2.45E-03	5.59E-04	2.45E-03	4.41E-05	1.93E-04	7.35E-03	3.22E-02	6.18E-03	2.71E-02			3.68E-08	1.61E-07	8.09E-04	3.54E-03	1.39E-04	6.08E-04
Shop Heater	7.82E-04	3.43E-03	7.82E-04	3.43E-03	6.18E-05	2.71E-04	1.03E-02	4.51E-02	8.65E-03	3.79E-02			5.15E-08	2.25E-07	1.13E-03	4.96E-03	1.94E-04	8.51E-04
Warehouse Heater	7.82E-04	3.43E-03	7.82E-04	3.43E-03	6.18E-05	2.71E-04	1.03E-02	4.51E-02	8.65E-03	3.79E-02			5.15E-08	2.25E-07	1.13E-03	4.96E-03	1.94E-04	8.51E-04
East MCC Building Heater	1.01E-03	4.41E-03	1.01E-03	4.41E-03	7.94E-05	3.48E-04	1.32E-02	5.80E-02	1.11E-02	4.87E-02			6.62E-08	2.90E-07	1.46E-03	6.38E-03	2.50E-04	1.09E-03
Admin Building Extension Heater	1.67E-03	7.31E-03	1.67E-03	7.31E-03	1.32E-04	5.77E-04	2.20E-02	9.62E-02	1.84E-02	8.08E-02			1.10E-07	4.81E-07	2.42E-03	1.06E-02	4.15E-04	1.82E-03
Warehouse II Heater 1	1.12E-03	4.90E-03	1.12E-03	4.90E-03	8.82E-05	3.86E-04	1.47E-02	6.44E-02	1.24E-02	5.41E-02			7.35E-08	3.22E-07	1.62E-03	7.09E-03	2.78E-04	1.22E-03
Warehouse II Heater 2	1.12E-03	4.90E-03	1.12E-03	4.90E-03	8.82E-05	3.86E-04	1.47E-02	6.44E-02	1.24E-02	5.41E-02			7.35E-08	3.22E-07	1.62E-03	7.09E-03	2.78E-04	1.22E-03
Warehouse II Heater 3	1.12E-03	4.90E-03	1.12E-03	4.90E-03	8.82E-05	3.86E-04	1.47E-02	6.44E-02	1.24E-02	5.41E-02			7.35E-08	3.22E-07	1.62E-03	7.09E-03	2.78E-04	1.22E-03
Warehouse II Heater 4	1.12E-03	4.90E-03	1.12E-03	4.90E-03	8.82E-05	3.86E-04	1.47E-02	6.44E-02	1.24E-02	5.41E-02			7.35E-08	3.22E-07	1.62E-03	7.09E-03	2.78E-04	1.22E-03
Haul Roads	-	1.48	-	0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Surface Area Disturbance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diesel Tank	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.98E-05	8.67E-05	-	-
Gasoline Tank	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.81E-02	2.54E-01	-	-
Cooling Tower 1	4.12E-02	1.80E-01	4.12E-02	1.80E-01	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cooling Tower 2	1.03E-01	4.51E-01	1.03E-01	4.51E-01	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Emissions	**5.45**	**23.67**	**5.45**	**22.23**	**0.42**	**0.24**	**7.57**	**193.10**	**25.51**	**82.68**	**1.13E+04**	**4.96E+04**	**7.27E-05**	**3.18E-04**	**22.57**	**96.91**	**1.65**	**7.20**

Input Parameters

Combustion Sources Input Parameters [1]

Heating Value for Natual Gas = 1,020 Btu/scf

Source Description	Source ID	Annual Operating Hours (Hrs/yr)	Design Heat Input Capacity	Design Power Output	Emission Calculation Source Reference
West Plant (Plant 1) Thermal Oxidizer[2]	TO_1	8,760	56 MMBtu/hr		AP-42 Table 1.4-2 & Table 1.4-4 (7/98)
East Plant (Plant 2) Thermal Oxidizer[2]	TO_2	8,760	86.5 MMBtu/hr		AP-42 Table 1.4-2 & Table 1.4-4 (7/98)
Diesel Generator Plant 1	DSLGEN1	500		70 KW	AP-42 Section 3.3 Table 3.3-1 & Table 3.3-2
Diesel Generator Plant 2	DSLGEN2	500		70 KW	AP-42 Section 3.3 Table 3.3-1 & Table 3.3-2
Technical Service Welder	WELDER	8,760		27 KW	AP-42 Section 3.3 Table 3.3-1 & Table 3.3-2
Back Well Water Pump	BWWP	8,760		200 HP	AP-42 Section 3.2, Table 3.2-2, (07/00)
Warm-Up Boiler	WMUBOIL	8,760	1.26 MMBtu/hr		AP-42 Table 1.4-1, Table 1.4-2, Table 1.4-3, & Table 1.4-4 (7/98)
South Building Heater	SBHEATER	8,760	75,000 BTU/hr		AP-42 Table 1.4-1, Table 1.4-2, Table 1.4-3, & Table 1.4-4 (7/98)
Control Center E Heater	CCHEATER	8,760	150,000 BTU/hr		AP-42 Table 1.4-1, Table 1.4-2, Table 1.4-3, & Table 1.4-4 (7/98)
West Half Building Heater	WBHEATER	8,760	100,000 BTU/hr		AP-42 Table 1.4-1, Table 1.4-2, Table 1.4-3, & Table 1.4-4 (7/98)
North Building Heater	NBHEATER	8,760	75,000 BTU/hr		AP-42 Table 1.4-1, Table 1.4-2, Table 1.4-3, & Table 1.4-4 (7/98)
Shop Heater	SHHEATER	8,760	105,000 BTU/hr		AP-42 Table 1.4-1, Table 1.4-2, Table 1.4-3, & Table 1.4-4 (7/98)
Warehouse Heater	WHHEATER	8,760	105,000 BTU/hr		AP-42 Table 1.4-1, Table 1.4-2, Table 1.4-3, & Table 1.4-4 (7/98)
East MCC Building Heater	EBHEATER	8,760	135,000 BTU/hr		AP-42 Table 1.4-1, Table 1.4-2, Table 1.4-3, & Table 1.4-4 (7/98)
Admin Building Extension Heater	ADEXHEATER	8,760	224,000 BTU/hr		AP-42 Table 1.4-1, Table 1.4-2, Table 1.4-3, & Table 1.4-4 (7/98)
Warehouse II Heater 1	WH2HEATER1	8,760	150,000 BTU/hr		AP-42 Table 1.4-1, Table 1.4-2, Table 1.4-3, & Table 1.4-4 (7/98)
Warehouse II Heater 2	WH2HEATER2	8,760	150,000 BTU/hr		AP-42 Table 1.4-1, Table 1.4-2, Table 1.4-3, & Table 1.4-4 (7/98)
Warehouse II Heater 3	WH2HEATER3	8,760	150,000 BTU/hr		AP-42 Table 1.4-1, Table 1.4-2, Table 1.4-3, & Table 1.4-4 (7/98)
Warehouse II Heater 4	WH2HEATER4	8,760	150,000 BTU/hr		AP-42 Table 1.4-1, Table 1.4-2, Table 1.4-3, & Table 1.4-4 (7/98)

Haul Road Input Paramters [1]

vehicle miles traveled (VMT) =	0.29	VMT/hr
	2,500	VMT/year
Number of days with measurable precipitation (used for annual-average calculations only) [p] =	60	
Mean Vehicle Weight (tons) [W] =	60	
Control Efficiency (%) =	90	

Storage Tanks Input Paramters [1]

	Source ID	Length (ft)	Diameter (ft)	Annual Throughput (Gal)	Shell Color/ Shade
Diesel Tank	T-1	2.7	4	1,200	gray/light
Gasoline Tank	T-2	9.5	3	5,400	white/white

[1] Per 2006 permit renewal emission calculations.

[2] Total Design Heat Input Capacity for Thermal Oxidizer = Natuaral Gas (10 MMBtu/hr) + Waste Gas (38 MMBtu/hr)

West Plant (Plant 1) Thermal Oxidizer Emission Calculations

Source ID=	**TO_1**	
Design Heat Input Capacity =	56	MMBtu/hr
Heating Value of Natural Gas =	1,020	Btu/scf
Natural Gas Consumption =	54,902	ft^3/ hr
Annual Operating Hours =	8,760	hrs/yr
Maximum Annual Heat Input =	490,560	MMBtu/yr (equivalent to 8,760 hr/yr at max rate)

		Emission Factor [1]			Estimated Potential Emissions	
Ref.	**Pollutant**	**(lb/MMscf)**	**(lb/MMBtu)**	**Source**	**(lb/hr)**	**(tpy)**
	NO_x		Same as exiting permit limit		-	92.00
	CO		Same as exiting permit limit		10.83	38.00
	CO_2				6.13E+03	2.68E+04
	SO_2		Same as previous		2.60E-03	1.14E-02
	$PM/PM_{10}/PM_{2.5}$		Same as exiting permit limit		2.30	10.07
	VOC		Same as exiting permit limit		9.95	43.58
	Lead (Pb)	5.00E-04	4.90E-07	AP-42 Section 1.4, Table 1.4-2 (7/98)	2.75E-05	1.20E-04
[2]	Hydrogen Cyanide (HCN)		Same as existing permit limit		0.68	3.00
[2]	Mercury (Hg)	2.60E-04	2.55E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.43E-05	6.25E-05
[2]	Benzene	2.10E-03	2.06E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.15E-04	5.05E-04
[2]	Dichlorobenzene	1.20E-03	1.18E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	6.59E-05	2.89E-04
[2]	Formaldehyde	7.50E-02	7.35E-05	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.12E-03	1.80E-02
[2]	Hexane	1.80E+00	1.76E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	9.88E-02	4.33E-01
[2]	Naphthalene	6.10E-04	5.98E-07	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.35E-05	1.47E-04
[2]	Toluene	3.40E-03	3.33E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.87E-04	8.18E-04
[2]	Arsenic	2.00E-04	1.96E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.10E-05	4.81E-05
[2]	Beryllium	1.20E-05	1.18E-08	AP-42 Section 1.4, Table 1.4-4 (7/98)	6.59E-07	2.89E-06
[2]	Cadmium	1.10E-03	1.08E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	6.04E-05	2.65E-04
[2]	Chromium	1.40E-03	1.37E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	7.69E-05	3.37E-04
[2]	Cobalt	8.40E-05	8.24E-08	AP-42 Section 1.4, Table 1.4-4 (7/98)	4.61E-06	2.02E-05
[2]	Manganese	3.80E-04	3.73E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	2.09E-05	9.14E-05
[2]	Nickel	2.10E-03	2.06E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.15E-04	5.05E-04
[2, 3]	Total POM	8.82E-05	8.65E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.84E-06	2.12E-05
[2, 3]	2-Methylnaphthalene	2.40E-05	2.35E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.32E-06	5.77E-06
[2, 3]	3-Methylchloranthrene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	9.88E-08	4.33E-07
[2, 3]	7,12-Dimethylbenz(a)anthracene	1.60E-05	1.57E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	8.78E-07	3.85E-06
[2, 3]	Acenaphthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	9.88E-08	4.33E-07
[2, 3]	Acenaphthylene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	9.88E-08	4.33E-07
[2, 3]	Anthracene	2.40E-06	2.35E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.32E-07	5.77E-07
[2, 3]	Benz(a)anthracene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	9.88E-08	4.33E-07
[2, 3]	Benzo(a)pyrene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	6.59E-08	2.89E-07
[2, 3]	Benzo(b)fluoranthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	9.88E-08	4.33E-07
[2, 3]	Benzo(g,h,i)perylene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	6.59E-08	2.89E-07
[2, 3]	Benzo(k)fluoranthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	9.88E-08	4.33E-07
[2, 3]	Chrysene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	9.88E-08	4.33E-07
[2, 3]	Dibenzo(a,h)anthracene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	6.59E-08	2.89E-07
[2, 3]	Fluoranthene	3.00E-06	2.94E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.65E-07	7.21E-07
[2, 3]	Fluorene	2.80E-06	2.75E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.54E-07	6.73E-07
[2, 3]	Indeno(1,2,3-cd)pyrene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	9.88E-08	4.33E-07
[2, 3]	Phenanthrene	1.70E-05	1.67E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	9.33E-07	4.09E-06
[2, 3]	Pyrene	5.00E-06	4.90E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.75E-07	1.20E-06
	Butane	2.10E+00	2.06E-03	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.15E-01	5.05E-01
	Ethane	3.10E+00	3.04E-03	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.70E-01	7.45E-01
	Selenium	2.40E-05	2.35E-08	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.32E-06	5.77E-06
	Vanadium	2.30E-03	2.25E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.26E-04	5.53E-04
	Zinc	2.90E-02	2.84E-05	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.59E-03	6.97E-03
	Copper	8.50E-04	8.33E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	4.67E-05	2.04E-04
	Molybdenum	1.10E-03	1.08E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	6.04E-05	2.65E-04
	Barium	4.40E-03	4.31E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	2.42E-04	1.06E-03
	Pentane	2.60E+00	2.55E-03	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.43E-01	6.25E-01
	Propane	1.60E+00	1.57E-03	AP-42 Section 1.4, Table 1.4-4 (7/98)	8.78E-02	3.85E-01
				NO_x	-	92.00
				CO	10.83	38.00
				SO_2	2.60E-03	1.14E-02
	Total Emissions from Plant 1 Incinerator			$PM/PM_{10}/PM_{2.5}$	2.30	10.07
				VOC	9.95	43.58
				Lead (Pb)	2.75E-05	1.20E-04
				HAPs	7.89E-01	3.45E+00

[1] Emission factors are proposed to remain same as the existing limits, as applicable, and/or from AP-42 Section 1.4 (7/98).

[2] Hazardous Air Pollutant (HAP) as defined by Section 112(b) of the Clean Air Act.

[3] HAP because it is Polycyclic Organic Matter (POM). POM is a HAP as defined by Section 112(b) of the Clean Air Act.

East Plant (Plant 2) Thermal Oxidizer Emission Calculations

Source ID=	**P2INCIN**	
Design Heat Input Capacity =	86.5	MMBtu/hr
Heating Value of Natural Gas =	1,020	Btu/scf
Natural Gas Consumption =	84,804	ft^3/ hr
Annual Operating Hours =	8,760	hrs/yr
Maximum Annual Heat Input =	757,740	MMBtu/yr (equivalent to 8,760 hr/yr at max rate)

		Emission Factor [1]			Estimated Potential Emissions	
Ref.	**Pollutant**	**(lb/MMscf)**	**(lb/MMBtu)**	**Source**	**(lb/hr)**	**(tpy)**
	NO_x		Same as exiting permit limit		-	92.00
	CO		Same as exiting permit limit		11.97	38.00
	CO_2				5,192.00	22,739
	SO_2		Same as previous		2.88E-03	1.26E-02
	$PM/PM_{10}/PM_{2.5}$		Same as exiting permit limit		2.50	10.95
	VOC		Same as exiting permit limit		11.00	48.18
	Lead (Pb)	5.00E-04	4.90E-07	AP-42 Section 1.4, Table 1.4-2 (7/98)	4.24E-05	1.86E-04
[2]	Hydrogen Cyanide (HCN)		Same as exiting permit limit		0.68	3.00
[2]	Mercury (Hg)	2.60E-04	2.55E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	2.20E-05	9.66E-05
[2]	Benzene	2.10E-03	2.06E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.78E-04	7.80E-04
[2]	Dichlorobenzene	1.20E-03	1.18E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.02E-04	4.46E-04
[2]	Formaldehyde	7.50E-02	7.35E-05	AP-42 Section 1.4, Table 1.4-3 (7/98)	6.36E-03	2.79E-02
[2]	Hexane	1.80E+00	1.76E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.53E-01	6.69E-01
[2]	Naphthalene	6.10E-04	5.98E-07	AP-42 Section 1.4, Table 1.4-3 (7/98)	5.17E-05	2.27E-04
[2]	Toluene	3.40E-03	3.33E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.88E-04	1.26E-03
[2]	Arsenic	2.00E-04	1.96E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.70E-05	7.43E-05
[2]	Beryllium	1.20E-05	1.18E-08	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.02E-06	4.46E-06
[2]	Cadmium	1.10E-03	1.08E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	9.33E-05	4.09E-04
[2]	Chromium	1.40E-03	1.37E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.19E-04	5.20E-04
[2]	Cobalt	8.40E-05	8.24E-08	AP-42 Section 1.4, Table 1.4-4 (7/98)	7.12E-06	3.12E-05
[2]	Manganese	3.80E-04	3.73E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	3.22E-05	1.41E-04
[2]	Nickel	2.10E-03	2.06E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.78E-04	7.80E-04
[2, 3]	Total POM	8.82E-05	8.65E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	7.48E-06	3.28E-05
[2, 3]	2-Methylnaphthalene	2.40E-05	2.35E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.04E-06	8.91E-06
[2, 3]	3-Methylchloranthrene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.53E-07	6.69E-07
[2, 3]	7,12-Dimethylbenz(a)anthracene	1.60E-05	1.57E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.36E-06	5.94E-06
[2, 3]	Acenaphthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.53E-07	6.69E-07
[2, 3]	Acenaphthylene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.53E-07	6.69E-07
[2, 3]	Anthracene	2.40E-06	2.35E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.04E-07	8.91E-07
[2, 3]	Benz(a)anthracene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.53E-07	6.69E-07
[2, 3]	Benzo(a)pyrene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.02E-07	4.46E-07
[2, 3]	Benzo(b)fluoranthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.53E-07	6.69E-07
[2, 3]	Benzo(g,h,i)perylene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.02E-07	4.46E-07
[2, 3]	Benzo(k)fluoranthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.53E-07	6.69E-07
[2, 3]	Chrysene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.53E-07	6.69E-07
[2, 3]	Dibenzo(a,h)anthracene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.02E-07	4.46E-07
[2, 3]	Fluoranthene	3.00E-06	2.94E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.54E-07	1.11E-06
[2, 3]	Fluorene	2.80E-06	2.75E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.37E-07	1.04E-06
[2, 3]	Indeno(1,2,3-cd)pyrene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.53E-07	6.69E-07
[2, 3]	Phenanthrene	1.70E-05	1.67E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.44E-06	6.31E-06
[2, 3]	Pyrene	5.00E-06	4.90E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.24E-07	1.86E-06
	Butane	2.10E+00	2.06E-03	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.78E-01	7.80E-01
	Ethane	3.10E+00	3.04E-03	AP-42 Section 1.4, Table 1.4-4 (7/98)	2.63E-01	1.15E+00
	Selenium	2.40E-05	2.35E-08	AP-42 Section 1.4, Table 1.4-4 (7/98)	2.04E-06	8.91E-06
	Vanadium	2.30E-03	2.25E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.95E-04	8.54E-04
	Zinc	2.90E-02	2.84E-05	AP-42 Section 1.4, Table 1.4-4 (7/98)	2.46E-03	1.08E-02
	Copper	8.50E-04	8.33E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	7.21E-05	3.16E-04
	Molybdenum	1.10E-03	1.08E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	9.33E-05	4.09E-04
	Barium	4.40E-03	4.31E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	3.73E-04	1.63E-03
	Pentane	2.60E+00	2.55E-03	AP-42 Section 1.4, Table 1.4-4 (7/98)	2.20E-01	9.66E-01
	Propane	1.60E+00	1.57E-03	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.36E-01	5.94E-01
	Total Emissions from Plant 2 Incinerator			NO_x	-	92.00
				CO	11.97	38.00
				SO_2	2.88E-03	1.26E-02
				$PM/PM_{10}/PM_{2.5}$	2.50	10.95
				VOC	11.00	48.18
				Lead (Pb)	4.24E-05	1.86E-04
				HAPs	8.45E-01	3.70E+00

[1] Emission factors are proposed to remain same as the existing limits, as applicable, and/or from AP-42 Section 1.4 (7/98).

[2] Hazardous Air Pollutant (HAP) as defined by Section 112(b) of the Clean Air Act.

[3] HAP because it is Polycyclic Organic Matter (POM). POM is a HAP as defined by Section 112(b) of the Clean Air Act.

Plant 1 Diesel Generator Emission Calculations

Source ID=	**DSLGEN1**				
Design Power Ouput =	70	KW	=	93.87	HP
Estimated Maximum Heat Input =	0.66	MMBtu/hr [1]			
Maximum Annual Power Onput =	35	MWh			
Annual Operating Hours =	500	hrs/yr			
Estimated Maximum Annual Heat Input =	330	MMBtu/yr			
Diesel Consumption =	4.7	gal/hr			

Pollutant	Emission Factor		Estimated Potential Emissions (lb/hr)	Estimated Potential Emissions (tpy)
NO_X	0.031	lb/hp-hr [2]	2.91	0.73
CO	6.68E-03	lb/hp-hr [2]	0.63	0.16
[6] SO_2	2.05E-03	lb/hp-hr [2]	0.19	0.05
$PM/PM_{10}/PM_{2.5}$	2.20E-03	lb/hp-hr [2, 3]	0.21	0.05
VOC	2.51E-03	lb/hp-hr [2, 3, 5]	0.24	0.06
[4] Benzene	9.33E-04	lb/MMBtu [2]	6.16E-04	1.54E-04
[4] Toluene	4.09E-04	lb/MMBtu [2]	2.70E-04	6.75E-05
[4] Xylene	2.85E-04	lb/MMBtu [2]	1.88E-04	4.71E-05
[4] 1,3-Butadiene	3.91E-05	lb/MMBtu [2]	2.58E-05	6.46E-06
[4] Formaldehyde	1.18E-03	lb/MMBtu [2]	7.79E-04	1.95E-04
[4] Acetaldehyde	7.67E-04	lb/MMBtu [2]	5.07E-04	1.27E-04
[4] Acrolein	9.25E-05	lb/MMBtu [2]	6.11E-05	1.53E-05
PAH (POM)	1.68E-04	lb/MMBtu [2]	1.11E-04	2.77E-05
[4] Naphthalene	8.48E-05	lb/MMBtu [2]	5.60E-05	1.40E-05
Propylene	2.58E-03	lb/MMBtu [2]	1.70E-03	4.26E-04
Total Emissions from Plant 1 Diesel Generator		NO_x	2.91	0.73
		CO	0.63	0.16
		SO_2	0.19	0.05
		$PM/PM_{10}/PM_{2.5}$	0.21	0.05
		VOC	0.24	0.06
		HAPs	2.50E-03	6.26E-04

[1] Assumes an engine efficiency of 36.2 percent (back-calculated from parallel input- and output-based emission factors published in AP-42 Section 3.3, Gasoline And Diesel Industrial Engines, [10/96]).

[2] From AP-42 Section 3.3, Gasoline And Diesel Industrial Engines, (10/96), Table 3.3-1 and Table 3.3-2.

[3] PM-10 = particulate matter less than or equal to 10 µm aerodynamic diameter. All particulate is assumed to be ≤ 1 µm in size.

[4] Hazardous Air Pollutant (HAP) as defined by Section 112(b) of the Clean Air Act.

[5] Conservatively assumed equal to total organic compounds (TOC) emission factors.

[6] Conservatively assumed equal to total sulfur oxide (SOx) emission factors.

Plant 2 Diesel Generator Emission Calculations

Source ID=	**DSLGEN2**				
Design Power Ouput =	70	KW	=	93.87	HP
Estimated Maximum Heat Input =	0.66	MMBtu/hr [1]			
Maximum Annual Power Onput =	35	MWh			
Annual Operating Hours =	500	hrs/yr			
Estimated Maximum Annual Heat Input =	330	MMBtu/yr			
Diesel Consumption =	4.7	gal/hr			

Pollutant	**Emission Factor**		**Estimated Potential Emissions (lb/hr)**	**(tpy)**
NO_X	0.031	lb/hp-hr [2]	2.91	0.73
CO	6.68E-03	lb/hp-hr [2]	0.63	0.16
[6] SO_2	2.05E-03	lb/hp-hr [2]	0.19	0.05
$PM/PM_{10}/PM_{2.5}$	2.20E-03	lb/hp-hr [2, 3]	0.21	0.05
VOC	2.51E-03	lb/hp-hr [2, 3, 5]	0.24	0.06
[4] Benzene	9.33E-04	lb/MMBtu [2]	6.16E-04	1.54E-04
[4] Toluene	4.09E-04	lb/MMBtu [2]	2.70E-04	6.75E-05
[4] Xylene	2.85E-04	lb/MMBtu [2]	1.88E-04	4.71E-05
[4] 1,3-Butadiene	3.91E-05	lb/MMBtu [2]	2.58E-05	6.46E-06
[4] Formaldehyde	1.18E-03	lb/MMBtu [2]	7.79E-04	1.95E-04
[4] Acetaldehyde	7.67E-04	lb/MMBtu [2]	5.07E-04	1.27E-04
[4] Acrolein	9.25E-05	lb/MMBtu [2]	6.11E-05	1.53E-05
PAH (POM)	1.68E-04	lb/MMBtu [2]	1.11E-04	2.77E-05
[4] Naphthalene	8.48E-05	lb/MMBtu [2]	5.60E-05	1.40E-05
Propylene	2.58E-03	lb/MMBtu [2]	1.70E-03	4.26E-04
		NO_x	2.91	0.73
		CO	0.63	0.16
		SO_2	0.19	0.05
Total Emissions from Plant 2 Diesel Generator		$PM/PM_{10}/PM_{2.5}$	0.21	0.05
		VOC	0.24	0.06
		HAPs	2.50E-03	6.26E-04

[1] Assumes an engine efficiency of 36.2 percent (back-calculated from parallel input- and output-based emission factors published in AP-42 Section 3.3, Gasoline And Diesel Industrial Engines, [10/96]).

[2] From AP-42 Section 3.3, Gasoline And Diesel Industrial Engines, (10/96), Table 3.3-1 and Table 3.3-2.

[3] PM-10 = particulate matter less than or equal to 10 µm aerodynamic diameter. All particulate is assumed to be≤ 1 µm in size.

[4] Hazardous Air Pollutant (HAP) as defined by Section 112(b) of the Clean Air Act.

[5] Conservatively assumed equal to total organic compounds (TOC) emission factors.

[6] Conservatively assumed equal to total sulfur oxide (SOx) emission factors.

Technical Service Welder Emission Calculations

Source ID=	**TECH SERVICE WELDER**				
Design Power Ouput =	27	KW	=	36.21	HP
Estimated Maximum Heat Input =	0.25	MMBtu/hr [1]			
Maximum Annual Power Onput =	237	MWh			
Annual Operating Hours =	8,760	hrs/yr			
Estimated Maximum Annual Heat Input =	2,231	MMBtu/yr			
Diesel Consumption =	1.8	gal/hr			

Pollutant	**Emission Factor**		**Estimated Potential Emissions (lb/hr)**	**(tpy)**
NO_X	0.011	lb/hp-hr [2]	0.40	1.74
CO	7.0E-03	lb/hp-hr [2]	0.25	1.10
[6] SO_2	5.91E-04	lb/hp-hr [2]	0.02	0.09
$PM/PM_{10}/PM_{2.5}$	7.21E-04	lb/hp-hr [2, 3]	0.03	0.11
VOC	1.55E-02	lb/hp-hr [2, 3, 5]	0.56	2.46
[4] Benzene		lb/MMBtu [2]	0.00E+00	0.00E+00
[4] Toluene		lb/MMBtu [2]	0.00E+00	0.00E+00
[4] Xylene		lb/MMBtu [2]	0.00E+00	0.00E+00
[4] 1,3-Butadiene		lb/MMBtu [2]	0.00E+00	0.00E+00
[4] Formaldehyde		lb/MMBtu [2]	0.00E+00	0.00E+00
[4] Acetaldehyde		lb/MMBtu [2]	0.00E+00	0.00E+00
[4] Acrolein		lb/MMBtu [2]	0.00E+00	0.00E+00
PAH (POM)		lb/MMBtu [2]	0.00E+00	0.00E+00
[4] Naphthalene		lb/MMBtu [2]	0.00E+00	0.00E+00
Propylene		lb/MMBtu [2]	0.00E+00	0.00E+00
		NO_x	0.40	1.74
		CO	0.25	1.10
		SO_2	0.02	0.09
Total Emissions from Welding		$PM/PM_{10}/PM_{2.5}$	0.03	0.11
		VOC	0.56	2.46
		HAPs	0.00E+00	0.00E+00

[1] Assumes an engine efficiency of 36.2 percent (back-calculated from parallel input- and output-based emission factors published in AP-42 Section 3.3, Gasoline And Diesel Industrial Engines, [10/96]).

[2] From AP-42 Section 3.3, Gasoline And Diesel Industrial Engines, (10/96), Table 3.3-1 and Table 3.3-2.

[3] PM-10 = particulate matter less than or equal to 10 µm aerodynamic diameter. All particulate is assumed to be ≤ 1 µm in size.

[4] Hazardous Air Pollutant (HAP) as defined by Section 112(b) of the Clean Air Act.

[5] Conservatively assumed equal to total organic compounds (TOC) emission factors.

[6] Conservatively assumed equal to total sulfur oxide (SOx) emission factors.

Back-up Well Engine Emission Calculations

Inputs are shaded gray throughout

Reference for Emission Factors	Fuel	Units	CO	NO_x	$PM/PM_{10}/PM_{2.5}$ [A]	SO_x	VOC	Pb
General Instruction Book for the AQMD 2006-2007 Annual Emissions Reporting Program, Table 2, pg 21of 74	Propane	$lb/10^3$ gal	129.00	139.00	5.00	0.35	83.00	N/A
		lb/MMBtu [B]	1.4254	1.5359	0.0552	0.0039	0.9171	N/A

[A] *All particulate matter from gasoline combustion is assumed to be less than 2.5 µm, therefore the emission factor and the calculated emissions are the same for PM, PM10, and PM2.5.*

[B] *SCAQMD emission factors are converted to lb/MMBtu by dividing by the heating value for propane (90.5 MMBtu/1000 gal - Per AP-42, Sec. 1.5.1, 10/96).*

Source Description	Source ID	Fuel	Power	Actual Operation	CO		NO_x		$PM/PM_{10}/PM_{2.5}$ [A]		SO_x		VOC		Pb		
			(MMBTU/hr)	(hrs/yr)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(lb/yr)	(tpy)
Back Well Water Pump	BWWP	Propane	0.51	8,760	0.73	3.18	0.78	3.42	0.03	1.23E-01	0.002	8.62E-03	0.47	2.04	N/A	N/A	N/A
			TOTAL EMISSIONS			**3.18**		**3.42**		**0.12**		**8.62E-03**		**2.04**		**N/A**	**N/A**

Warm-up Emission Calculations

Source ID=	**WMUBOIL**	
Design Heat Input Capacity =	4.20	MMBtu/hr
Heating Value of Natural Gas =	1,020	Btu/scf
Annual Operating Hours =	8,760	hrs/yr
Maximum Annual Heat Input =	36,792	MMBtu/yr (equivalent to 8,760 hr/yr at max rate)

		Emission Factor [1]			Estimated Potential Emissions	
Ref.	**Pollutant**	**(lb/MMscf)**	**(lb/MMBtu)**	**Source**	**(lb/hr)**	**(tpy)**
	NO_x	100	9.80E-02	AP-42 Section 1.4, Table 1.4-1 (7/98)	0.41	1.80
	CO	84	8.24E-02	AP-42 Section 1.4, Table 1.4-1 (7/98)	0.35	1.51
	SO_2	0.6	5.88E-04	AP-42 Section 1.4, Table 1.4-2 (7/98)	0.002	0.011
	$PM/PM_{10}/PM_{2.5}$	7.6	7.45E-03	AP-42 Section 1.4, Table 1.4-2 (7/98)	0.03	0.137
[4]	VOC	11	1.08E-02	AP-42 Section 1.4, Table 1.4-2 (7/98)	0.05	0.20
	Lead (Pb)	5.00E-04	4.90E-07	AP-42 Section 1.4, Table 1.4-2 (7/98)	2.06E-06	9.02E-06
[2]	Mercury (Hg)	2.60E-04	2.55E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.07E-06	4.69E-06
[2]	Benzene	2.10E-03	2.06E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	8.65E-06	3.79E-05
[2]	Dichlorobenzene	1.20E-03	1.18E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.94E-06	2.16E-05
[2]	Formaldehyde	7.50E-02	7.35E-05	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.09E-04	1.35E-03
[2]	Hexane	1.80E+00	1.76E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	7.41E-03	3.25E-02
[2]	Naphthalene	6.10E-04	5.98E-07	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.51E-06	1.10E-05
[2]	Toluene	3.40E-03	3.33E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.40E-05	6.13E-05
[2]	Arsenic	2.00E-04	1.96E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	8.24E-07	3.61E-06
[2]	Beryllium	1.20E-05	1.18E-08	AP-42 Section 1.4, Table 1.4-4 (7/98)	4.94E-08	2.16E-07
[2]	Cadmium	1.10E-03	1.08E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	4.53E-06	1.98E-05
[2]	Chromium	1.40E-03	1.37E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	5.76E-06	2.52E-05
[2]	Cobalt	8.40E-05	8.24E-08	AP-42 Section 1.4, Table 1.4-4 (7/98)	3.46E-07	1.51E-06
[2]	Manganese	3.80E-04	3.73E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.56E-06	6.85E-06
[2]	Nickel	2.10E-03	2.06E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	8.65E-06	3.79E-05
[2, 3]	Total POM	8.82E-05	8.65E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.63E-07	1.59E-06
[2, 3]	2-Methylnaphthalene	2.40E-05	2.35E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	9.88E-08	4.33E-07
[2, 3]	3-Methylchloranthrene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	7.41E-09	3.25E-08
[2, 3]	7,12-Dimethylbenz(a)anthracene	1.60E-05	1.57E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	6.59E-08	2.89E-07
[2, 3]	Acenaphthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	7.41E-09	3.25E-08
[2, 3]	Acenaphthylene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	7.41E-09	3.25E-08
[2, 3]	Anthracene	2.40E-06	2.35E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	9.88E-09	4.33E-08
[2, 3]	Benz(a)anthracene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	7.41E-09	3.25E-08
[2, 3]	Benzo(a)pyrene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.94E-09	2.16E-08
[2, 3]	Benzo(b)fluoranthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	7.41E-09	3.25E-08
[2, 3]	Benzo(g,h,i)perylene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.94E-09	2.16E-08
[2, 3]	Benzo(k)fluoranthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	7.41E-09	3.25E-08
[2, 3]	Chrysene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	7.41E-09	3.25E-08
[2, 3]	Dibenzo(a,h)anthracene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.94E-09	2.16E-08
[2, 3]	Fluoranthene	3.00E-06	2.94E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.24E-08	5.41E-08
[2, 3]	Fluorene	2.80E-06	2.75E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.15E-08	5.05E-08
[2, 3]	Indeno(1,2,3-cd)pyrene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	7.41E-09	3.25E-08
[2, 3]	Phenanthrene	1.70E-05	1.67E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	7.00E-08	3.07E-07
[2, 3]	Pyrene	5.00E-06	4.90E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.06E-08	9.02E-08
	Butane	2.10E+00	2.06E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	8.65E-03	3.79E-02
	Ethane	3.10E+00	3.04E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.28E-02	5.59E-02
	Selenium	2.40E-05	2.35E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	9.88E-08	4.33E-07
	Vanadium	2.30E-03	2.25E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	9.47E-06	4.15E-05
	Zinc	2.90E-02	2.84E-05	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.19E-04	5.23E-04
	Copper	8.50E-04	8.33E-07	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.50E-06	1.53E-05
	Molybdenum	1.10E-03	1.08E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.53E-06	1.98E-05
	Barium	4.40E-03	4.31E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.81E-05	7.94E-05
	Pentane	2.60E+00	2.55E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.07E-02	4.69E-02
	Propane	1.60E+00	1.57E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	6.59E-03	2.89E-02
				NO_x	0.41	1.80
				CO	0.35	1.51
				SO_2	0.002	0.011
	Total Emissions from Warm-up Boiler			$PM/PM_{10}/PM_{2.5}$	0.03	0.14
				VOC	0.05	0.20
				Lead (Pb)	2.06E-06	9.02E-06
				HAPs	0.008	0.03

[1] Emission factors are from AP-42 Section 1.4 (7/98).

[2] Hazardous Air Pollutant (HAP) as defined by Section 112(b) of the Clean Air Act.

[3] HAP because it is Polycyclic Organic Matter (POM). POM is a HAP as defined by Section 112(b) of the Clean Air Act.

[4] Conservatively TOC emission factor are used to estimate the VOC emissions.

Heaters Emission Calculations

Source Description =	**South Building Heater**
Source ID=	**SBHEATER**
Design Heat Input Capacity (MMBTU/hr)=	75,000 Btu/hr
Design Heat Input Capacity (MMBTU/hr)=	0.075 MMBtu/hr
Annual Operating Hours (hrs/yr)=	8,760 hrs/yr
Heating Value of Natural Gas =	1,020 Btu/scf
Maximum Annual Heat Input (equivalent to 8,760 hr/yr at max rate) =	657.00 MMBtu/yr

		Emission Factor [1]			Estimated Potential Emissions	
Ref.	**Pollutant**	**(lb/MMscf)**	**(lb/MMBtu)**	**Source**	**(lb/hr)**	**(tpy)**
	NO_x	100	9.80E-02	AP-42 Section 1.4, Table 1.4-1 (7/98)	7.35E-03	3.22E-02
	CO	84	8.24E-02	AP-42 Section 1.4, Table 1.4-1 (7/98)	6.18E-03	2.71E-02
	SO_2	0.6	5.88E-04	AP-42 Section 1.4, Table 1.4-2 (7/98)	4.41E-05	1.93E-04
	$PM/PM_{10}/PM_{2.5}$	7.6	7.45E-03	AP-42 Section 1.4, Table 1.4-2 (7/98)	5.59E-04	2.45E-03
[4]	VOC	11	1.08E-02	AP-42 Section 1.4, Table 1.4-2 (7/98)	8.09E-04	3.54E-03
	Lead (Pb)	5.00E-04	4.90E-07	AP-42 Section 1.4, Table 1.4-2 (7/98)	3.68E-08	1.61E-07
[2]	Mercury (Hg)	2.60E-04	2.55E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.91E-08	8.37E-08
[2]	Benzene	2.10E-03	2.06E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.54E-07	6.76E-07
[2]	Dichlorobenzene	1.20E-03	1.18E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	8.82E-08	3.86E-07
[2]	Formaldehyde	7.50E-02	7.35E-05	AP-42 Section 1.4, Table 1.4-3 (7/98)	5.51E-06	2.42E-05
[2]	Hexane	1.80E+00	1.76E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.32E-04	5.80E-04
[2]	Naphthalene	6.10E-04	5.98E-07	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.49E-08	1.96E-07
[2]	Toluene	3.40E-03	3.33E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.50E-07	1.10E-06
[2]	Arsenic	2.00E-04	1.96E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.47E-08	6.44E-08
[2]	Beryllium	1.20E-05	1.18E-08	AP-42 Section 1.4, Table 1.4-4 (7/98)	8.82E-10	3.86E-09
[2]	Cadmium	1.10E-03	1.08E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	8.09E-08	3.54E-07
[2]	Chromium	1.40E-03	1.37E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.03E-07	4.51E-07
[2]	Cobalt	8.40E-05	8.24E-08	AP-42 Section 1.4, Table 1.4-4 (7/98)	6.18E-09	2.71E-08
[2]	Manganese	3.80E-04	3.73E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	2.79E-08	1.22E-07
[2]	Nickel	2.10E-03	2.06E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.54E-07	6.76E-07
[2, 3]	Total POM	8.82E-05	8.65E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	6.49E-09	2.84E-08
[2, 3]	2-Methylnaphthalene	2.40E-05	2.35E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-09	7.73E-09
[2, 3]	3-Methylchloranthrene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.32E-10	5.80E-10
[2, 3]	7,12-Dimethylbenz(a)anthracene	1.60E-05	1.57E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.18E-09	5.15E-09
[2, 3]	Acenaphthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.32E-10	5.80E-10
[2, 3]	Acenaphthylene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.32E-10	5.80E-10
[2, 3]	Anthracene	2.40E-06	2.35E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-10	7.73E-10
[2, 3]	Benz(a)anthracene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.32E-10	5.80E-10
[2, 3]	Benzo(a)pyrene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	8.82E-11	3.86E-10
[2, 3]	Benzo(b)fluoranthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.32E-10	5.80E-10
[2, 3]	Benzo(g,h,i)perylene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	8.82E-11	3.86E-10
[2, 3]	Benzo(k)fluoranthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.32E-10	5.80E-10
[2, 3]	Chrysene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.32E-10	5.80E-10
[2, 3]	Dibenzo(a,h)anthracene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	8.82E-11	3.86E-10
[2, 3]	Fluoranthene	3.00E-06	2.94E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.21E-10	9.66E-10
[2, 3]	Fluorene	2.80E-06	2.75E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.06E-10	9.02E-10
[2, 3]	Indeno(1,2,3-cd)pyrene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.32E-10	5.80E-10
[2, 3]	Phenanthrene	1.70E-05	1.67E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.25E-09	5.48E-09
[2, 3]	Pyrene	5.00E-06	4.90E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.68E-10	1.61E-09
	Butane	2.10E+00	2.06E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.54E-04	6.76E-04
	Ethane	3.10E+00	3.04E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.28E-04	9.98E-04
	Selenium	2.40E-05	2.35E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-09	7.73E-09
	Vanadium	2.30E-03	2.25E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.69E-07	7.41E-07
	Zinc	2.90E-02	2.84E-05	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.13E-06	9.34E-06
	Copper	8.50E-04	8.33E-07	AP-42 Section 1.4, Table 1.4-3 (7/98)	6.25E-08	2.74E-07
	Molybdenum	1.10E-03	1.08E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	8.09E-08	3.54E-07
	Barium	4.40E-03	4.31E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.24E-07	1.42E-06
	Pentane	2.60E+00	2.55E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.91E-04	8.37E-04
	Propane	1.60E+00	1.57E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.18E-04	5.15E-04
				NO_x	7.35E-03	3.22E-02
				CO	6.18E-03	2.71E-02
				SO_2	4.41E-05	1.93E-04
	Total Emissions			$PM/PM_{10}/PM_{2.5}$	5.59E-04	2.45E-03
				VOC	8.09E-04	3.54E-03
				Lead (Pb)	3.68E-08	1.61E-07
				HAPs	1.39E-04	6.08E-04

[1] Emission factors are from AP-42 Section 1.4 (7/98).

[2] Hazardous Air Pollutant (HAP) as defined by Section 112(b) of the Clean Air Act.

[3] HAP because it is Polycyclic Organic Matter (POM). POM is a HAP as defined by Section 112(b) of the Clean Air Act.

[4] Conservatively TOC emission factor are used to estimate the VOC emissions.

Heaters Emission Calculations

Source Description =	**Control Center E Heater**
Source ID=	**CCHEATER**
Design Heat Input Capacity (MMBTU/hr)=	150,000 Btu/hr
Design Heat Input Capacity (MMBTU/hr)=	0.15 MMBtu/hr
Annual Operating Hours (hrs/yr)=	8,760 hrs/yr
Heating Value of Natural Gas =	1,020 Btu/scf
Maximum Annual Heat Input (equivalent to 8,760 hr/yr at max rate) =	1314.00 MMBtu/yr

		Emission Factor [1]			Estimated Potential Emissions	
Ref.	**Pollutant**	**(lb/MMscf)**	**(lb/MMBtu)**	**Source**	**(lb/hr)**	**(tpy)**
	NO_x	100	9.80E-02	AP-42 Section 1.4, Table 1.4-1 (7/98)	1.47E-02	6.44E-02
	CO	84	8.24E-02	AP-42 Section 1.4, Table 1.4-1 (7/98)	1.24E-02	5.41E-02
	SO_2	0.6	5.88E-04	AP-42 Section 1.4, Table 1.4-2 (7/98)	8.82E-05	3.86E-04
	$PM/PM_{10}/PM_{2.5}$	7.6	7.45E-03	AP-42 Section 1.4, Table 1.4-2 (7/98)	1.12E-03	4.90E-03
[4]	VOC	11	1.08E-02	AP-42 Section 1.4, Table 1.4-2 (7/98)	1.62E-03	7.09E-03
	Lead (Pb)	5.00E-04	4.90E-07	AP-42 Section 1.4, Table 1.4-2 (7/98)	7.35E-08	3.22E-07
[2]	Mercury (Hg)	2.60E-04	2.55E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	3.82E-08	1.67E-07
[2]	Benzene	2.10E-03	2.06E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.09E-07	1.35E-06
[2]	Dichlorobenzene	1.20E-03	1.18E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-07	7.73E-07
[2]	Formaldehyde	7.50E-02	7.35E-05	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.10E-05	4.83E-05
[2]	Hexane	1.80E+00	1.76E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-04	1.16E-03
[2]	Naphthalene	6.10E-04	5.98E-07	AP-42 Section 1.4, Table 1.4-3 (7/98)	8.97E-08	3.93E-07
[2]	Toluene	3.40E-03	3.33E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	5.00E-07	2.19E-06
[2]	Arsenic	2.00E-04	1.96E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	2.94E-08	1.29E-07
[2]	Beryllium	1.20E-05	1.18E-08	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.76E-09	7.73E-09
[2]	Cadmium	1.10E-03	1.08E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.62E-07	7.09E-07
[2]	Chromium	1.40E-03	1.37E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	2.06E-07	9.02E-07
[2]	Cobalt	8.40E-05	8.24E-08	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.24E-08	5.41E-08
[2]	Manganese	3.80E-04	3.73E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	5.59E-08	2.45E-07
[2]	Nickel	2.10E-03	2.06E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	3.09E-07	1.35E-06
[2, 3]	Total POM	8.82E-05	8.65E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.30E-08	5.68E-08
[2, 3]	2-Methylnaphthalene	2.40E-05	2.35E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.53E-09	1.55E-08
[2, 3]	3-Methylchloranthrene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	7,12-Dimethylbenz(a)anthracene	1.60E-05	1.57E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.35E-09	1.03E-08
[2, 3]	Acenaphthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Acenaphthylene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Anthracene	2.40E-06	2.35E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.53E-10	1.55E-09
[2, 3]	Benz(a)anthracene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Benzo(a)pyrene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-10	7.73E-10
[2, 3]	Benzo(b)fluoranthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Benzo(g,h,i)perylene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-10	7.73E-10
[2, 3]	Benzo(k)fluoranthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Chrysene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Dibenzo(a,h)anthracene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-10	7.73E-10
[2, 3]	Fluoranthene	3.00E-06	2.94E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.41E-10	1.93E-09
[2, 3]	Fluorene	2.80E-06	2.75E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.12E-10	1.80E-09
[2, 3]	Indeno(1,2,3-cd)pyrene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Phenanthrene	1.70E-05	1.67E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.50E-09	1.10E-08
[2, 3]	Pyrene	5.00E-06	4.90E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	7.35E-10	3.22E-09
	Butane	2.10E+00	2.06E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.09E-04	1.35E-03
	Ethane	3.10E+00	3.04E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.56E-04	2.00E-03
	Selenium	2.40E-05	2.35E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.53E-09	1.55E-08
	Vanadium	2.30E-03	2.25E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.38E-07	1.48E-06
	Zinc	2.90E-02	2.84E-05	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.26E-06	1.87E-05
	Copper	8.50E-04	8.33E-07	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.25E-07	5.48E-07
	Molybdenum	1.10E-03	1.08E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.62E-07	7.09E-07
	Barium	4.40E-03	4.31E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	6.47E-07	2.83E-06
	Pentane	2.60E+00	2.55E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.82E-04	1.67E-03
	Propane	1.60E+00	1.57E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.35E-04	1.03E-03
				NO_x	1.47E-02	6.44E-02
				CO	1.24E-02	5.41E-02
				SO_2	8.82E-05	3.86E-04
	Total Emissions			$PM/PM_{10}/PM_{2.5}$	1.12E-03	4.90E-03
				VOC	1.62E-03	7.09E-03
				Lead (Pb)	7.35E-08	3.22E-07
				HAPs	2.78E-04	1.22E-03

[1] Emission factors are from AP-42 Section 1.4 (7/98).

[2] Hazardous Air Pollutant (HAP) as defined by Section 112(b) of the Clean Air Act.

[3] HAP because it is Polycyclic Organic Matter (POM). POM is a HAP as defined by Section 112(b) of the Clean Air Act.

[4] Conservatively TOC emission factor are used to estimate the VOC emissions.

Heaters Emission Calculations

Source Description =	**West Half Building Heater**
Source ID=	**WBHEATER**
Design Heat Input Capacity (MMBTU/hr)=	100,000 Btu/hr
Design Heat Input Capacity (MMBTU/hr)=	0.10 MMBtu/hr
Annual Operating Hours (hrs/yr)=	8,760 hrs/yr
Heating Value of Natural Gas =	1,020 Btu/scf
Maximum Annual Heat Input (equivalent to 8,760 hr/yr at max rate) =	876.00 MMBtu/yr

		Emission Factor [1]			Estimated Potential Emissions	
Ref.	**Pollutant**	**(lb/MMscf)**	**(lb/MMBtu)**	**Source**	**(lb/hr)**	**(tpy)**
	NO_x	100	9.80E-02	AP-42 Section 1.4, Table 1.4-1 (7/98)	9.80E-03	4.29E-02
	CO	84	8.24E-02	AP-42 Section 1.4, Table 1.4-1 (7/98)	8.24E-03	3.61E-02
	SO_2	0.6	5.88E-04	AP-42 Section 1.4, Table 1.4-2 (7/98)	5.88E-05	2.58E-04
	$PM/PM_{10}/PM_{2.5}$	7.6	7.45E-03	AP-42 Section 1.4, Table 1.4-2 (7/98)	7.45E-04	3.26E-03
[4]	VOC	11	1.08E-02	AP-42 Section 1.4, Table 1.4-2 (7/98)	1.08E-03	4.72E-03
	Lead (Pb)	5.00E-04	4.90E-07	AP-42 Section 1.4, Table 1.4-2 (7/98)	4.90E-08	2.15E-07
[2]	Mercury (Hg)	2.60E-04	2.55E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	2.55E-08	1.12E-07
[2]	Benzene	2.10E-03	2.06E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.06E-07	9.02E-07
[2]	Dichlorobenzene	1.20E-03	1.18E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.18E-07	5.15E-07
[2]	Formaldehyde	7.50E-02	7.35E-05	AP-42 Section 1.4, Table 1.4-3 (7/98)	7.35E-06	3.22E-05
[2]	Hexane	1.80E+00	1.76E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-04	7.73E-04
[2]	Naphthalene	6.10E-04	5.98E-07	AP-42 Section 1.4, Table 1.4-3 (7/98)	5.98E-08	2.62E-07
[2]	Toluene	3.40E-03	3.33E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.33E-07	1.46E-06
[2]	Arsenic	2.00E-04	1.96E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.96E-08	8.59E-08
[2]	Beryllium	1.20E-05	1.18E-08	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.18E-09	5.15E-09
[2]	Cadmium	1.10E-03	1.08E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.08E-07	4.72E-07
[2]	Chromium	1.40E-03	1.37E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.37E-07	6.01E-07
[2]	Cobalt	8.40E-05	8.24E-08	AP-42 Section 1.4, Table 1.4-4 (7/98)	8.24E-09	3.61E-08
[2]	Manganese	3.80E-04	3.73E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	3.73E-08	1.63E-07
[2]	Nickel	2.10E-03	2.06E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	2.06E-07	9.02E-07
[2, 3]	Total POM	8.82E-05	8.65E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	8.65E-09	3.79E-08
[2, 3]	2-Methylnaphthalene	2.40E-05	2.35E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.35E-09	1.03E-08
[2, 3]	3-Methylchloranthrene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-10	7.73E-10
[2, 3]	7,12-Dimethylbenz(a)anthracene	1.60E-05	1.57E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.57E-09	6.87E-09
[2, 3]	Acenaphthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-10	7.73E-10
[2, 3]	Acenaphthylene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-10	7.73E-10
[2, 3]	Anthracene	2.40E-06	2.35E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.35E-10	1.03E-09
[2, 3]	Benz(a)anthracene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-10	7.73E-10
[2, 3]	Benzo(a)pyrene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.18E-10	5.15E-10
[2, 3]	Benzo(b)fluoranthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-10	7.73E-10
[2, 3]	Benzo(g,h,i)perylene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.18E-10	5.15E-10
[2, 3]	Benzo(k)fluoranthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-10	7.73E-10
[2, 3]	Chrysene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-10	7.73E-10
[2, 3]	Dibenzo(a,h)anthracene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.18E-10	5.15E-10
[2, 3]	Fluoranthene	3.00E-06	2.94E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.94E-10	1.29E-09
[2, 3]	Fluorene	2.80E-06	2.75E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.75E-10	1.20E-09
[2, 3]	Indeno(1,2,3-cd)pyrene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-10	7.73E-10
[2, 3]	Phenanthrene	1.70E-05	1.67E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.67E-09	7.30E-09
[2, 3]	Pyrene	5.00E-06	4.90E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.90E-10	2.15E-09
	Butane	2.10E+00	2.06E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.06E-04	9.02E-04
	Ethane	3.10E+00	3.04E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.04E-04	1.33E-03
	Selenium	2.40E-05	2.35E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.35E-09	1.03E-08
	Vanadium	2.30E-03	2.25E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.25E-07	9.88E-07
	Zinc	2.90E-02	2.84E-05	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.84E-06	1.25E-05
	Copper	8.50E-04	8.33E-07	AP-42 Section 1.4, Table 1.4-3 (7/98)	8.33E-08	3.65E-07
	Molybdenum	1.10E-03	1.08E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.08E-07	4.72E-07
	Barium	4.40E-03	4.31E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.31E-07	1.89E-06
	Pentane	2.60E+00	2.55E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.55E-04	1.12E-03
	Propane	1.60E+00	1.57E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.57E-04	6.87E-04
				NO_x	9.80E-03	4.29E-02
				CO	8.24E-03	3.61E-02
				SO_2	5.88E-05	2.58E-04
	Total Emissions			$PM/PM_{10}/PM_{2.5}$	7.45E-04	3.26E-03
				VOC	1.08E-03	4.72E-03
				Lead (Pb)	4.90E-08	2.15E-07
				HAPs	1.85E-04	8.11E-04

[1] Emission factors are from AP-42 Section 1.4 (7/98).

[2] Hazardous Air Pollutant (HAP) as defined by Section 112(b) of the Clean Air Act.

[3] HAP because it is Polycyclic Organic Matter (POM). POM is a HAP as defined by Section 112(b) of the Clean Air Act.

[4] Conservatively TOC emission factor are used to estimate the VOC emissions.

Heaters Emission Calculations

Source Description =	**North Building Heater**
Source ID=	**NBHEATER**
Design Heat Input Capacity (MMBTU/hr)=	75,000 Btu/hr
Design Heat Input Capacity (MMBTU/hr)=	0.075 MMBtu/hr
Annual Operating Hours (hrs/yr)=	8,760 hrs/yr
Heating Value of Natural Gas =	1,020 Btu/scf
Maximum Annual Heat Input (equivalent to 8,760 hr/yr at max rate) =	657.00 MMBtu/yr

		Emission Factor [1]			Estimated Potential Emissions	
Ref.	**Pollutant**	**(lb/MMscf)**	**(lb/MMBtu)**	**Source**	**(lb/hr)**	**(tpy)**
	NO_x	100	9.80E-02	AP-42 Section 1.4, Table 1.4-1 (7/98)	7.35E-03	3.22E-02
	CO	84	8.24E-02	AP-42 Section 1.4, Table 1.4-1 (7/98)	6.18E-03	2.71E-02
	SO_2	0.6	5.88E-04	AP-42 Section 1.4, Table 1.4-2 (7/98)	4.41E-05	1.93E-04
	$PM/PM_{10}/PM_{2.5}$	7.6	7.45E-03	AP-42 Section 1.4, Table 1.4-2 (7/98)	5.59E-04	2.45E-03
[4]	VOC	11	1.08E-02	AP-42 Section 1.4, Table 1.4-2 (7/98)	8.09E-04	3.54E-03
	Lead (Pb)	5.00E-04	4.90E-07	AP-42 Section 1.4, Table 1.4-2 (7/98)	3.68E-08	1.61E-07
[2]	Mercury (Hg)	2.60E-04	2.55E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.91E-08	8.37E-08
[2]	Benzene	2.10E-03	2.06E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.54E-07	6.76E-07
[2]	Dichlorobenzene	1.20E-03	1.18E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	8.82E-08	3.86E-07
[2]	Formaldehyde	7.50E-02	7.35E-05	AP-42 Section 1.4, Table 1.4-3 (7/98)	5.51E-06	2.42E-05
[2]	Hexane	1.80E+00	1.76E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.32E-04	5.80E-04
[2]	Naphthalene	6.10E-04	5.98E-07	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.49E-08	1.96E-07
[2]	Toluene	3.40E-03	3.33E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.50E-07	1.10E-06
[2]	Arsenic	2.00E-04	1.96E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.47E-08	6.44E-08
[2]	Beryllium	1.20E-05	1.18E-08	AP-42 Section 1.4, Table 1.4-4 (7/98)	8.82E-10	3.86E-09
[2]	Cadmium	1.10E-03	1.08E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	8.09E-08	3.54E-07
[2]	Chromium	1.40E-03	1.37E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.03E-07	4.51E-07
[2]	Cobalt	8.40E-05	8.24E-08	AP-42 Section 1.4, Table 1.4-4 (7/98)	6.18E-09	2.71E-08
[2]	Manganese	3.80E-04	3.73E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	2.79E-08	1.22E-07
[2]	Nickel	2.10E-03	2.06E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.54E-07	6.76E-07
[2, 3]	Total POM	8.82E-05	8.65E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	6.49E-09	2.84E-08
[2, 3]	2-Methylnaphthalene	2.40E-05	2.35E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-09	7.73E-09
[2, 3]	3-Methylchloranthrene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.32E-10	5.80E-10
[2, 3]	7,12-Dimethylbenz(a)anthracene	1.60E-05	1.57E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.18E-09	5.15E-09
[2, 3]	Acenaphthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.32E-10	5.80E-10
[2, 3]	Acenaphthylene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.32E-10	5.80E-10
[2, 3]	Anthracene	2.40E-06	2.35E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-10	7.73E-10
[2, 3]	Benz(a)anthracene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.32E-10	5.80E-10
[2, 3]	Benzo(a)pyrene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	8.82E-11	3.86E-10
[2, 3]	Benzo(b)fluoranthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.32E-10	5.80E-10
[2, 3]	Benzo(g,h,i)perylene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	8.82E-11	3.86E-10
[2, 3]	Benzo(k)fluoranthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.32E-10	5.80E-10
[2, 3]	Chrysene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.32E-10	5.80E-10
[2, 3]	Dibenzo(a,h)anthracene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	8.82E-11	3.86E-10
[2, 3]	Fluoranthene	3.00E-06	2.94E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.21E-10	9.66E-10
[2, 3]	Fluorene	2.80E-06	2.75E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.06E-10	9.02E-10
[2, 3]	Indeno(1,2,3-cd)pyrene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.32E-10	5.80E-10
[2, 3]	Phenanthrene	1.70E-05	1.67E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.25E-09	5.48E-09
[2, 3]	Pyrene	5.00E-06	4.90E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.68E-10	1.61E-09
	Butane	2.10E+00	2.06E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.54E-04	6.76E-04
	Ethane	3.10E+00	3.04E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.28E-04	9.98E-04
	Selenium	2.40E-05	2.35E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-09	7.73E-09
	Vanadium	2.30E-03	2.25E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.69E-07	7.41E-07
	Zinc	2.90E-02	2.84E-05	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.13E-06	9.34E-06
	Copper	8.50E-04	8.33E-07	AP-42 Section 1.4, Table 1.4-3 (7/98)	6.25E-08	2.74E-07
	Molybdenum	1.10E-03	1.08E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	8.09E-08	3.54E-07
	Barium	4.40E-03	4.31E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.24E-07	1.42E-06
	Pentane	2.60E+00	2.55E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.91E-04	8.37E-04
	Propane	1.60E+00	1.57E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.18E-04	5.15E-04
				NO_x	7.35E-03	3.22E-02
				CO	6.18E-03	2.71E-02
				SO_2	4.41E-05	1.93E-04
	Total Emissions			$PM/PM_{10}/PM_{2.5}$	5.59E-04	2.45E-03
				VOC	8.09E-04	3.54E-03
				Lead (Pb)	3.68E-08	1.61E-07
				HAPs	1.39E-04	6.08E-04

[1] Emission factors are from AP-42 Section 1.4 (7/98).

[2] Hazardous Air Pollutant (HAP) as defined by Section 112(b) of the Clean Air Act.

[3] HAP because it is Polycyclic Organic Matter (POM). POM is a HAP as defined by Section 112(b) of the Clean Air Act.

[4] Conservatively TOC emission factor are used to estimate the VOC emissions.

Heaters Emission Calculations

Source Description =	**Shop Heater**
Source ID=	**SHHEATER**
Design Heat Input Capacity (MMBTU/hr)=	105,000 Btu/hr
Design Heat Input Capacity (MMBTU/hr)=	0.105 MMBtu/hr
Annual Operating Hours (hrs/yr)=	8,760 hrs/yr
Heating Value of Natural Gas =	1,020 Btu/scf
Maximum Annual Heat Input (equivalent to 8,760 hr/yr at max rate) =	919.80 MMBtu/yr

		Emission Factor [1]			Estimated Potential Emissions	
Ref.	**Pollutant**	**(lb/MMscf)**	**(lb/MMBtu)**	**Source**	**(lb/hr)**	**(tpy)**
	NO_x	100	9.80E-02	AP-42 Section 1.4, Table 1.4-1 (7/98)	1.03E-02	4.51E-02
	CO	84	8.24E-02	AP-42 Section 1.4, Table 1.4-1 (7/98)	8.65E-03	3.79E-02
	SO_2	0.6	5.88E-04	AP-42 Section 1.4, Table 1.4-2 (7/98)	6.18E-05	2.71E-04
	$PM/PM_{10}/PM_{2.5}$	7.6	7.45E-03	AP-42 Section 1.4, Table 1.4-2 (7/98)	7.82E-04	3.43E-03
[4]	VOC	11	1.08E-02	AP-42 Section 1.4, Table 1.4-2 (7/98)	1.13E-03	4.96E-03
	Lead (Pb)	5.00E-04	4.90E-07	AP-42 Section 1.4, Table 1.4-2 (7/98)	5.15E-08	2.25E-07
[2]	Mercury (Hg)	2.60E-04	2.55E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	2.68E-08	1.17E-07
[2]	Benzene	2.10E-03	2.06E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.16E-07	9.47E-07
[2]	Dichlorobenzene	1.20E-03	1.18E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.24E-07	5.41E-07
[2]	Formaldehyde	7.50E-02	7.35E-05	AP-42 Section 1.4, Table 1.4-3 (7/98)	7.72E-06	3.38E-05
[2]	Hexane	1.80E+00	1.76E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.85E-04	8.12E-04
[2]	Naphthalene	6.10E-04	5.98E-07	AP-42 Section 1.4, Table 1.4-3 (7/98)	6.28E-08	2.75E-07
[2]	Toluene	3.40E-03	3.33E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.50E-07	1.53E-06
[2]	Arsenic	2.00E-04	1.96E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	2.06E-08	9.02E-08
[2]	Beryllium	1.20E-05	1.18E-08	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.24E-09	5.41E-09
[2]	Cadmium	1.10E-03	1.08E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.13E-07	4.96E-07
[2]	Chromium	1.40E-03	1.37E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.44E-07	6.31E-07
[2]	Cobalt	8.40E-05	8.24E-08	AP-42 Section 1.4, Table 1.4-4 (7/98)	8.65E-09	3.79E-08
[2]	Manganese	3.80E-04	3.73E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	3.91E-08	1.71E-07
[2]	Nickel	2.10E-03	2.06E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	2.16E-07	9.47E-07
[2, 3]	Total POM	8.82E-05	8.65E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	9.08E-09	3.98E-08
[2, 3]	2-Methylnaphthalene	2.40E-05	2.35E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.47E-09	1.08E-08
[2, 3]	3-Methylchloranthrene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.85E-10	8.12E-10
[2, 3]	7,12-Dimethylbenz(a)anthracene	1.60E-05	1.57E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.65E-09	7.21E-09
[2, 3]	Acenaphthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.85E-10	8.12E-10
[2, 3]	Acenaphthylene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.85E-10	8.12E-10
[2, 3]	Anthracene	2.40E-06	2.35E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.47E-10	1.08E-09
[2, 3]	Benz(a)anthracene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.85E-10	8.12E-10
[2, 3]	Benzo(a)pyrene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.24E-10	5.41E-10
[2, 3]	Benzo(b)fluoranthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.85E-10	8.12E-10
[2, 3]	Benzo(g,h,i)perylene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.24E-10	5.41E-10
[2, 3]	Benzo(k)fluoranthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.85E-10	8.12E-10
[2, 3]	Chrysene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.85E-10	8.12E-10
[2, 3]	Dibenzo(a,h)anthracene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.24E-10	5.41E-10
[2, 3]	Fluoranthene	3.00E-06	2.94E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.09E-10	1.35E-09
[2, 3]	Fluorene	2.80E-06	2.75E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.88E-10	1.26E-09
[2, 3]	Indeno(1,2,3-cd)pyrene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.85E-10	8.12E-10
[2, 3]	Phenanthrene	1.70E-05	1.67E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.75E-09	7.67E-09
[2, 3]	Pyrene	5.00E-06	4.90E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	5.15E-10	2.25E-09
	Butane	2.10E+00	2.06E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.16E-04	9.47E-04
	Ethane	3.10E+00	3.04E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.19E-04	1.40E-03
	Selenium	2.40E-05	2.35E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.47E-09	1.08E-08
	Vanadium	2.30E-03	2.25E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.37E-07	1.04E-06
	Zinc	2.90E-02	2.84E-05	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.99E-06	1.31E-05
	Copper	8.50E-04	8.33E-07	AP-42 Section 1.4, Table 1.4-3 (7/98)	8.75E-08	3.83E-07
	Molybdenum	1.10E-03	1.08E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.13E-07	4.96E-07
	Barium	4.40E-03	4.31E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.53E-07	1.98E-06
	Pentane	2.60E+00	2.55E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.68E-04	1.17E-03
	Propane	1.60E+00	1.57E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.65E-04	7.21E-04
				NO_x	1.03E-02	4.51E-02
				CO	8.65E-03	3.79E-02
				SO_2	6.18E-05	2.71E-04
	Total Emissions			$PM/PM_{10}/PM_{2.5}$	7.82E-04	3.43E-03
				VOC	1.13E-03	4.96E-03
				Lead (Pb)	5.15E-08	2.25E-07
				HAPs	1.94E-04	8.51E-04

[1] Emission factors are from AP-42 Section 1.4 (7/98).

[2] Hazardous Air Pollutant (HAP) as defined by Section 112(b) of the Clean Air Act.

[3] HAP because it is Polycyclic Organic Matter (POM). POM is a HAP as defined by Section 112(b) of the Clean Air Act.

[4] Conservatively TOC emission factor are used to estimate the VOC emissions.

Heaters Emission Calculations

Source Description =	**Warehouse Heater**
Source ID=	**WHHEATER**
Design Heat Input Capacity (MMBTU/hr)=	105,000 Btu/hr
Design Heat Input Capacity (MMBTU/hr)=	0.105 MMBtu/hr
Annual Operating Hours (hrs/yr)=	8,760 hrs/yr
Heating Value of Natural Gas =	1,020 Btu/scf
Maximum Annual Heat Input (equivalent to 8,760 hr/yr at max rate) =	919.80 MMBtu/yr

		Emission Factor [1]			Estimated Potential Emissions	
Ref.	**Pollutant**	**(lb/MMscf)**	**(lb/MMBtu)**	**Source**	**(lb/hr)**	**(tpy)**
	NO_x	100	9.80E-02	AP-42 Section 1.4, Table 1.4-1 (7/98)	1.03E-02	4.51E-02
	CO	84	8.24E-02	AP-42 Section 1.4, Table 1.4-1 (7/98)	8.65E-03	3.79E-02
	SO_2	0.6	5.88E-04	AP-42 Section 1.4, Table 1.4-2 (7/98)	6.18E-05	2.71E-04
	$PM/PM_{10}/PM_{2.5}$	7.6	7.45E-03	AP-42 Section 1.4, Table 1.4-2 (7/98)	7.82E-04	3.43E-03
[4]	VOC	11	1.08E-02	AP-42 Section 1.4, Table 1.4-2 (7/98)	1.13E-03	4.96E-03
	Lead (Pb)	5.00E-04	4.90E-07	AP-42 Section 1.4, Table 1.4-2 (7/98)	5.15E-08	2.25E-07
[2]	Mercury (Hg)	2.60E-04	2.55E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	2.68E-08	1.17E-07
[2]	Benzene	2.10E-03	2.06E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.16E-07	9.47E-07
[2]	Dichlorobenzene	1.20E-03	1.18E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.24E-07	5.41E-07
[2]	Formaldehyde	7.50E-02	7.35E-05	AP-42 Section 1.4, Table 1.4-3 (7/98)	7.72E-06	3.38E-05
[2]	Hexane	1.80E+00	1.76E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.85E-04	8.12E-04
[2]	Naphthalene	6.10E-04	5.98E-07	AP-42 Section 1.4, Table 1.4-3 (7/98)	6.28E-08	2.75E-07
[2]	Toluene	3.40E-03	3.33E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.50E-07	1.53E-06
[2]	Arsenic	2.00E-04	1.96E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	2.06E-08	9.02E-08
[2]	Beryllium	1.20E-05	1.18E-08	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.24E-09	5.41E-09
[2]	Cadmium	1.10E-03	1.08E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.13E-07	4.96E-07
[2]	Chromium	1.40E-03	1.37E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.44E-07	6.31E-07
[2]	Cobalt	8.40E-05	8.24E-08	AP-42 Section 1.4, Table 1.4-4 (7/98)	8.65E-09	3.79E-08
[2]	Manganese	3.80E-04	3.73E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	3.91E-08	1.71E-07
[2]	Nickel	2.10E-03	2.06E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	2.16E-07	9.47E-07
[2, 3]	Total POM	8.82E-05	8.65E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	9.08E-09	3.98E-08
[2, 3]	2-Methylnaphthalene	2.40E-05	2.35E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.47E-09	1.08E-08
[2, 3]	3-Methylchloranthrene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.85E-10	8.12E-10
[2, 3]	7,12-Dimethylbenz(a)anthracene	1.60E-05	1.57E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.65E-09	7.21E-09
[2, 3]	Acenaphthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.85E-10	8.12E-10
[2, 3]	Acenaphthylene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.85E-10	8.12E-10
[2, 3]	Anthracene	2.40E-06	2.35E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.47E-10	1.08E-09
[2, 3]	Benz(a)anthracene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.85E-10	8.12E-10
[2, 3]	Benzo(a)pyrene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.24E-10	5.41E-10
[2, 3]	Benzo(b)fluoranthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.85E-10	8.12E-10
[2, 3]	Benzo(g,h,i)perylene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.24E-10	5.41E-10
[2, 3]	Benzo(k)fluoranthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.85E-10	8.12E-10
[2, 3]	Chrysene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.85E-10	8.12E-10
[2, 3]	Dibenzo(a,h)anthracene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.24E-10	5.41E-10
[2, 3]	Fluoranthene	3.00E-06	2.94E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.09E-10	1.35E-09
[2, 3]	Fluorene	2.80E-06	2.75E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.88E-10	1.26E-09
[2, 3]	Indeno(1,2,3-cd)pyrene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.85E-10	8.12E-10
[2, 3]	Phenanthrene	1.70E-05	1.67E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.75E-09	7.67E-09
[2, 3]	Pyrene	5.00E-06	4.90E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	5.15E-10	2.25E-09
	Butane	2.10E+00	2.06E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.16E-04	9.47E-04
	Ethane	3.10E+00	3.04E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.19E-04	1.40E-03
	Selenium	2.40E-05	2.35E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.47E-09	1.08E-08
	Vanadium	2.30E-03	2.25E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.37E-07	1.04E-06
	Zinc	2.90E-02	2.84E-05	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.99E-06	1.31E-05
	Copper	8.50E-04	8.33E-07	AP-42 Section 1.4, Table 1.4-3 (7/98)	8.75E-08	3.83E-07
	Molybdenum	1.10E-03	1.08E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.13E-07	4.96E-07
	Barium	4.40E-03	4.31E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.53E-07	1.98E-06
	Pentane	2.60E+00	2.55E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.68E-04	1.17E-03
	Propane	1.60E+00	1.57E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.65E-04	7.21E-04
				NO_x	1.03E-02	4.51E-02
				CO	8.65E-03	3.79E-02
				SO_2	6.18E-05	2.71E-04
	Total Emissions			$PM/PM_{10}/PM_{2.5}$	7.82E-04	3.43E-03
				VOC	1.13E-03	4.96E-03
				Lead (Pb)	5.15E-08	2.25E-07
				HAPs	1.94E-04	8.51E-04

[1] Emission factors are from AP-42 Section 1.4 (7/98).

[2] Hazardous Air Pollutant (HAP) as defined by Section 112(b) of the Clean Air Act.

[3] HAP because it is Polycyclic Organic Matter (POM). POM is a HAP as defined by Section 112(b) of the Clean Air Act.

[4] Conservatively TOC emission factor are used to estimate the VOC emissions.

Heaters Emission Calculations

Source Description =	**East MCC Building Heater**
Source ID=	**EBHEATER**
Design Heat Input Capacity (MMBTU/hr)=	135,000 Btu/hr
Design Heat Input Capacity (MMBTU/hr)=	0.135 MMBtu/hr
Annual Operating Hours (hrs/yr)=	8,760 hrs/yr
Heating Value of Natural Gas =	1,020 Btu/scf
Maximum Annual Heat Input (equivalent to 8,760 hr/yr at max rate) =	1,182.60 MMBtu/yr

		Emission Factor [1]			Estimated Potential Emissions	
Ref.	**Pollutant**	**(lb/MMscf)**	**(lb/MMBtu)**	**Source**	**(lb/hr)**	**(tpy)**
	NO_x	100	9.80E-02	AP-42 Section 1.4, Table 1.4-1 (7/98)	1.32E-02	5.80E-02
	CO	84	8.24E-02	AP-42 Section 1.4, Table 1.4-1 (7/98)	1.11E-02	4.87E-02
	SO_2	0.6	5.88E-04	AP-42 Section 1.4, Table 1.4-2 (7/98)	7.94E-05	3.48E-04
	$PM/PM_{10}/PM_{2.5}$	7.6	7.45E-03	AP-42 Section 1.4, Table 1.4-2 (7/98)	1.01E-03	4.41E-03
[4]	VOC	11	1.08E-02	AP-42 Section 1.4, Table 1.4-2 (7/98)	1.46E-03	6.38E-03
	Lead (Pb)	5.00E-04	4.90E-07	AP-42 Section 1.4, Table 1.4-2 (7/98)	6.62E-08	2.90E-07
[2]	Mercury (Hg)	2.60E-04	2.55E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	3.44E-08	1.51E-07
[2]	Benzene	2.10E-03	2.06E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.78E-07	1.22E-06
[2]	Dichlorobenzene	1.20E-03	1.18E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.59E-07	6.96E-07
[2]	Formaldehyde	7.50E-02	7.35E-05	AP-42 Section 1.4, Table 1.4-3 (7/98)	9.93E-06	4.35E-05
[2]	Hexane	1.80E+00	1.76E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.38E-04	1.04E-03
[2]	Naphthalene	6.10E-04	5.98E-07	AP-42 Section 1.4, Table 1.4-3 (7/98)	8.07E-08	3.54E-07
[2]	Toluene	3.40E-03	3.33E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.50E-07	1.97E-06
[2]	Arsenic	2.00E-04	1.96E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	2.65E-08	1.16E-07
[2]	Beryllium	1.20E-05	1.18E-08	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.59E-09	6.96E-09
[2]	Cadmium	1.10E-03	1.08E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.46E-07	6.38E-07
[2]	Chromium	1.40E-03	1.37E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.85E-07	8.12E-07
[2]	Cobalt	8.40E-05	8.24E-08	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.11E-08	4.87E-08
[2]	Manganese	3.80E-04	3.73E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	5.03E-08	2.20E-07
[2]	Nickel	2.10E-03	2.06E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	2.78E-07	1.22E-06
[2, 3]	Total POM	8.82E-05	8.65E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.17E-08	5.11E-08
[2, 3]	2-Methylnaphthalene	2.40E-05	2.35E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.18E-09	1.39E-08
[2, 3]	3-Methylchloranthrene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.38E-10	1.04E-09
[2, 3]	7,12-Dimethylbenz(a)anthracene	1.60E-05	1.57E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.12E-09	9.28E-09
[2, 3]	Acenaphthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.38E-10	1.04E-09
[2, 3]	Acenaphthylene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.38E-10	1.04E-09
[2, 3]	Anthracene	2.40E-06	2.35E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.18E-10	1.39E-09
[2, 3]	Benz(a)anthracene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.38E-10	1.04E-09
[2, 3]	Benzo(a)pyrene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.59E-10	6.96E-10
[2, 3]	Benzo(b)fluoranthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.38E-10	1.04E-09
[2, 3]	Benzo(g,h,i)perylene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.59E-10	6.96E-10
[2, 3]	Benzo(k)fluoranthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.38E-10	1.04E-09
[2, 3]	Chrysene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.38E-10	1.04E-09
[2, 3]	Dibenzo(a,h)anthracene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.59E-10	6.96E-10
[2, 3]	Fluoranthene	3.00E-06	2.94E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.97E-10	1.74E-09
[2, 3]	Fluorene	2.80E-06	2.75E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.71E-10	1.62E-09
[2, 3]	Indeno(1,2,3-cd)pyrene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.38E-10	1.04E-09
[2, 3]	Phenanthrene	1.70E-05	1.67E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.25E-09	9.86E-09
[2, 3]	Pyrene	5.00E-06	4.90E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	6.62E-10	2.90E-09
	Butane	2.10E+00	2.06E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.78E-04	1.22E-03
	Ethane	3.10E+00	3.04E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.10E-04	1.80E-03
	Selenium	2.40E-05	2.35E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.18E-09	1.39E-08
	Vanadium	2.30E-03	2.25E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.04E-07	1.33E-06
	Zinc	2.90E-02	2.84E-05	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.84E-06	1.68E-05
	Copper	8.50E-04	8.33E-07	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.13E-07	4.93E-07
	Molybdenum	1.10E-03	1.08E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.46E-07	6.38E-07
	Barium	4.40E-03	4.31E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	5.82E-07	2.55E-06
	Pentane	2.60E+00	2.55E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.44E-04	1.51E-03
	Propane	1.60E+00	1.57E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.12E-04	9.28E-04
				NO_x	1.32E-02	5.80E-02
				CO	1.11E-02	4.87E-02
				SO_2	7.94E-05	3.48E-04
	Total Emissions			$PM/PM_{10}/PM_{2.5}$	1.01E-03	4.41E-03
				VOC	1.46E-03	6.38E-03
				Lead (Pb)	6.62E-08	2.90E-07
				HAPs	2.50E-04	1.09E-03

[1] Emission factors are from AP-42 Section 1.4 (7/98).

[2] Hazardous Air Pollutant (HAP) as defined by Section 112(b) of the Clean Air Act.

[3] HAP because it is Polycyclic Organic Matter (POM). POM is a HAP as defined by Section 112(b) of the Clean Air Act.

[4] Conservatively TOC emission factor are used to estimate the VOC emissions.

Heaters Emission Calculations

Source Description =	**Admin Building Extension Heater**
Source ID=	**ADEXHEATER**
Design Heat Input Capacity (MMBTU/hr)=	224,000 Btu/hr
Design Heat Input Capacity (MMBTU/hr)=	0.224 MMBtu/hr
Annual Operating Hours (hrs/yr)=	8,760 hrs/yr
Heating Value of Natural Gas =	1,020 Btu/scf
Maximum Annual Heat Input (equivalent to 8,760 hr/yr at max rate) =	1,962.24 MMBtu/yr

		Emission Factor [1]			Estimated Potential Emissions	
Ref.	**Pollutant**	**(lb/MMscf)**	**(lb/MMBtu)**	**Source**	**(lb/hr)**	**(tpy)**
	NO_x	100	9.80E-02	AP-42 Section 1.4, Table 1.4-1 (7/98)	2.20E-02	9.62E-02
	CO	84	8.24E-02	AP-42 Section 1.4, Table 1.4-1 (7/98)	1.84E-02	8.08E-02
	SO_2	0.6	5.88E-04	AP-42 Section 1.4, Table 1.4-2 (7/98)	1.32E-04	5.77E-04
	$PM/PM_{10}/PM_{2.5}$	7.6	7.45E-03	AP-42 Section 1.4, Table 1.4-2 (7/98)	1.67E-03	7.31E-03
[4]	VOC	11	1.08E-02	AP-42 Section 1.4, Table 1.4-2 (7/98)	2.42E-03	1.06E-02
	Lead (Pb)	5.00E-04	4.90E-07	AP-42 Section 1.4, Table 1.4-2 (7/98)	1.10E-07	4.81E-07
[2]	Mercury (Hg)	2.60E-04	2.55E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	5.71E-08	2.50E-07
[2]	Benzene	2.10E-03	2.06E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.61E-07	2.02E-06
[2]	Dichlorobenzene	1.20E-03	1.18E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.64E-07	1.15E-06
[2]	Formaldehyde	7.50E-02	7.35E-05	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.65E-05	7.21E-05
[2]	Hexane	1.80E+00	1.76E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.95E-04	1.73E-03
[2]	Naphthalene	6.10E-04	5.98E-07	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.34E-07	5.87E-07
[2]	Toluene	3.40E-03	3.33E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	7.47E-07	3.27E-06
[2]	Arsenic	2.00E-04	1.96E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	4.39E-08	1.92E-07
[2]	Beryllium	1.20E-05	1.18E-08	AP-42 Section 1.4, Table 1.4-4 (7/98)	2.64E-09	1.15E-08
[2]	Cadmium	1.10E-03	1.08E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	2.42E-07	1.06E-06
[2]	Chromium	1.40E-03	1.37E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	3.07E-07	1.35E-06
[2]	Cobalt	8.40E-05	8.24E-08	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.84E-08	8.08E-08
[2]	Manganese	3.80E-04	3.73E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	8.35E-08	3.66E-07
[2]	Nickel	2.10E-03	2.06E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	4.61E-07	2.02E-06
[2, 3]	Total POM	8.82E-05	8.65E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.94E-08	8.48E-08
[2, 3]	2-Methylnaphthalene	2.40E-05	2.35E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	5.27E-09	2.31E-08
[2, 3]	3-Methylchloranthrene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.95E-10	1.73E-09
[2, 3]	7,12-Dimethylbenz(a)anthracene	1.60E-05	1.57E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.51E-09	1.54E-08
[2, 3]	Acenaphthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.95E-10	1.73E-09
[2, 3]	Acenaphthylene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.95E-10	1.73E-09
[2, 3]	Anthracene	2.40E-06	2.35E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	5.27E-10	2.31E-09
[2, 3]	Benz(a)anthracene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.95E-10	1.73E-09
[2, 3]	Benzo(a)pyrene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.64E-10	1.15E-09
[2, 3]	Benzo(b)fluoranthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.95E-10	1.73E-09
[2, 3]	Benzo(g,h,i)perylene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.64E-10	1.15E-09
[2, 3]	Benzo(k)fluoranthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.95E-10	1.73E-09
[2, 3]	Chrysene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.95E-10	1.73E-09
[2, 3]	Dibenzo(a,h)anthracene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.64E-10	1.15E-09
[2, 3]	Fluoranthene	3.00E-06	2.94E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	6.59E-10	2.89E-09
[2, 3]	Fluorene	2.80E-06	2.75E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	6.15E-10	2.69E-09
[2, 3]	Indeno(1,2,3-cd)pyrene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.95E-10	1.73E-09
[2, 3]	Phenanthrene	1.70E-05	1.67E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.73E-09	1.64E-08
[2, 3]	Pyrene	5.00E-06	4.90E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.10E-09	4.81E-09
	Butane	2.10E+00	2.06E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.61E-04	2.02E-03
	Ethane	3.10E+00	3.04E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	6.81E-04	2.98E-03
	Selenium	2.40E-05	2.35E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	5.27E-09	2.31E-08
	Vanadium	2.30E-03	2.25E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	5.05E-07	2.21E-06
	Zinc	2.90E-02	2.84E-05	AP-42 Section 1.4, Table 1.4-3 (7/98)	6.37E-06	2.79E-05
	Copper	8.50E-04	8.33E-07	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.87E-07	8.18E-07
	Molybdenum	1.10E-03	1.08E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.42E-07	1.06E-06
	Barium	4.40E-03	4.31E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	9.66E-07	4.23E-06
	Pentane	2.60E+00	2.55E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	5.71E-04	2.50E-03
	Propane	1.60E+00	1.57E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.51E-04	1.54E-03
				NO_x	2.20E-02	9.62E-02
				CO	1.84E-02	8.08E-02
				SO_2	1.32E-04	5.77E-04
	Total Emissions			$PM/PM_{10}/PM_{2.5}$	1.67E-03	7.31E-03
				VOC	2.42E-03	1.06E-02
				Lead (Pb)	1.10E-07	4.81E-07
				HAPs	4.15E-04	1.82E-03

[1] Emission factors are from AP-42 Section 1.4 (7/98).

[2] Hazardous Air Pollutant (HAP) as defined by Section 112(b) of the Clean Air Act.

[3] HAP because it is Polycyclic Organic Matter (POM). POM is a HAP as defined by Section 112(b) of the Clean Air Act.

[4] Conservatively TOC emission factor are used to estimate the VOC emissions.

Heaters Emission Calculations

Source Description =	**Warehouse II Heater 1**
Source ID=	**WH2HEATER1**
Design Heat Input Capacity (MMBTU/hr)=	150,000 Btu/hr
Design Heat Input Capacity (MMBTU/hr)=	0.150 MMBtu/hr
Annual Operating Hours (hrs/yr)=	8,760 hrs/yr
Heating Value of Natural Gas =	1,020 Btu/scf
Maximum Annual Heat Input (equivalent to 8,760 hr/yr at max rate) =	1,314.00 MMBtu/yr

		Emission Factor [1]			Estimated Potential Emissions	
Ref.	**Pollutant**	**(lb/MMscf)**	**(lb/MMBtu)**	**Source**	**(lb/hr)**	**(tpy)**
	NO_x	100	9.80E-02	AP-42 Section 1.4, Table 1.4-1 (7/98)	1.47E-02	6.44E-02
	CO	84	8.24E-02	AP-42 Section 1.4, Table 1.4-1 (7/98)	1.24E-02	5.41E-02
	SO_2	0.6	5.88E-04	AP-42 Section 1.4, Table 1.4-2 (7/98)	8.82E-05	3.86E-04
	$PM/PM_{10}/PM_{2.5}$	7.6	7.45E-03	AP-42 Section 1.4, Table 1.4-2 (7/98)	1.12E-03	4.90E-03
[4]	VOC	11	1.08E-02	AP-42 Section 1.4, Table 1.4-2 (7/98)	1.62E-03	7.09E-03
	Lead (Pb)	5.00E-04	4.90E-07	AP-42 Section 1.4, Table 1.4-2 (7/98)	7.35E-08	3.22E-07
[2]	Mercury (Hg)	2.60E-04	2.55E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	3.82E-08	1.67E-07
[2]	Benzene	2.10E-03	2.06E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.09E-07	1.35E-06
[2]	Dichlorobenzene	1.20E-03	1.18E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-07	7.73E-07
[2]	Formaldehyde	7.50E-02	7.35E-05	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.10E-05	4.83E-05
[2]	Hexane	1.80E+00	1.76E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-04	1.16E-03
[2]	Naphthalene	6.10E-04	5.98E-07	AP-42 Section 1.4, Table 1.4-3 (7/98)	8.97E-08	3.93E-07
[2]	Toluene	3.40E-03	3.33E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	5.00E-07	2.19E-06
[2]	Arsenic	2.00E-04	1.96E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	2.94E-08	1.29E-07
[2]	Beryllium	1.20E-05	1.18E-08	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.76E-09	7.73E-09
[2]	Cadmium	1.10E-03	1.08E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.62E-07	7.09E-07
[2]	Chromium	1.40E-03	1.37E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	2.06E-07	9.02E-07
[2]	Cobalt	8.40E-05	8.24E-08	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.24E-08	5.41E-08
[2]	Manganese	3.80E-04	3.73E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	5.59E-08	2.45E-07
[2]	Nickel	2.10E-03	2.06E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	3.09E-07	1.35E-06
[2, 3]	Total POM	8.82E-05	8.65E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.30E-08	5.68E-08
[2, 3]	2-Methylnaphthalene	2.40E-05	2.35E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.53E-09	1.55E-08
[2, 3]	3-Methylchloranthrene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	7,12-Dimethylbenz(a)anthracene	1.60E-05	1.57E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.35E-09	1.03E-08
[2, 3]	Acenaphthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Acenaphthylene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Anthracene	2.40E-06	2.35E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.53E-10	1.55E-09
[2, 3]	Benz(a)anthracene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Benzo(a)pyrene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-10	7.73E-10
[2, 3]	Benzo(b)fluoranthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Benzo(g,h,i)perylene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-10	7.73E-10
[2, 3]	Benzo(k)fluoranthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Chrysene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Dibenzo(a,h)anthracene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-10	7.73E-10
[2, 3]	Fluoranthene	3.00E-06	2.94E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.41E-10	1.93E-09
[2, 3]	Fluorene	2.80E-06	2.75E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.12E-10	1.80E-09
[2, 3]	Indeno(1,2,3-cd)pyrene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Phenanthrene	1.70E-05	1.67E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.50E-09	1.10E-08
[2, 3]	Pyrene	5.00E-06	4.90E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	7.35E-10	3.22E-09
	Butane	2.10E+00	2.06E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.09E-04	1.35E-03
	Ethane	3.10E+00	3.04E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.56E-04	2.00E-03
	Selenium	2.40E-05	2.35E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.53E-09	1.55E-08
	Vanadium	2.30E-03	2.25E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.38E-07	1.48E-06
	Zinc	2.90E-02	2.84E-05	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.26E-06	1.87E-05
	Copper	8.50E-04	8.33E-07	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.25E-07	5.48E-07
	Molybdenum	1.10E-03	1.08E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.62E-07	7.09E-07
	Barium	4.40E-03	4.31E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	6.47E-07	2.83E-06
	Pentane	2.60E+00	2.55E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.82E-04	1.67E-03
	Propane	1.60E+00	1.57E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.35E-04	1.03E-03
				NO_x	1.47E-02	6.44E-02
				CO	1.24E-02	5.41E-02
				SO_2	8.82E-05	3.86E-04
	Total Emissions			$PM/PM_{10}/PM_{2.5}$	1.12E-03	4.90E-03
				VOC	1.62E-03	7.09E-03
				Lead (Pb)	7.35E-08	3.22E-07
				HAPs	2.78E-04	1.22E-03

[1] Emission factors are from AP-42 Section 1.4 (7/98).

[2] Hazardous Air Pollutant (HAP) as defined by Section 112(b) of the Clean Air Act.

[3] HAP because it is Polycyclic Organic Matter (POM). POM is a HAP as defined by Section 112(b) of the Clean Air Act.

[4] Conservatively TOC emission factor are used to estimate the VOC emissions.

Heaters Emission Calculations

Source Description =	**Warehouse II Heater 2**
Source ID=	**WH2HEATER2**
Design Heat Input Capacity (MMBTU/hr)=	150,000 Btu/hr
Design Heat Input Capacity (MMBTU/hr)=	0.150 MMBtu/hr
Annual Operating Hours (hrs/yr)=	8,760 hrs/yr
Heating Value of Natural Gas =	1,020 Btu/scf
Maximum Annual Heat Input (equivalent to 8,760 hr/yr at max rate) =	1,314.00 MMBtu/yr

		Emission Factor [1]			Estimated Potential Emissions	
Ref.	**Pollutant**	**(lb/MMscf)**	**(lb/MMBtu)**	**Source**	**(lb/hr)**	**(tpy)**
	NO_x	100	9.80E-02	AP-42 Section 1.4, Table 1.4-1 (7/98)	1.47E-02	6.44E-02
	CO	84	8.24E-02	AP-42 Section 1.4, Table 1.4-1 (7/98)	1.24E-02	5.41E-02
	SO_2	0.6	5.88E-04	AP-42 Section 1.4, Table 1.4-2 (7/98)	8.82E-05	3.86E-04
	$PM/PM_{10}/PM_{2.5}$	7.6	7.45E-03	AP-42 Section 1.4, Table 1.4-2 (7/98)	1.12E-03	4.90E-03
[4]	VOC	11	1.08E-02	AP-42 Section 1.4, Table 1.4-2 (7/98)	1.62E-03	7.09E-03
	Lead (Pb)	5.00E-04	4.90E-07	AP-42 Section 1.4, Table 1.4-2 (7/98)	7.35E-08	3.22E-07
[2]	Mercury (Hg)	2.60E-04	2.55E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	3.82E-08	1.67E-07
[2]	Benzene	2.10E-03	2.06E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.09E-07	1.35E-06
[2]	Dichlorobenzene	1.20E-03	1.18E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-07	7.73E-07
[2]	Formaldehyde	7.50E-02	7.35E-05	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.10E-05	4.83E-05
[2]	Hexane	1.80E+00	1.76E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-04	1.16E-03
[2]	Naphthalene	6.10E-04	5.98E-07	AP-42 Section 1.4, Table 1.4-3 (7/98)	8.97E-08	3.93E-07
[2]	Toluene	3.40E-03	3.33E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	5.00E-07	2.19E-06
[2]	Arsenic	2.00E-04	1.96E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	2.94E-08	1.29E-07
[2]	Beryllium	1.20E-05	1.18E-08	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.76E-09	7.73E-09
[2]	Cadmium	1.10E-03	1.08E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.62E-07	7.09E-07
[2]	Chromium	1.40E-03	1.37E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	2.06E-07	9.02E-07
[2]	Cobalt	8.40E-05	8.24E-08	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.24E-08	5.41E-08
[2]	Manganese	3.80E-04	3.73E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	5.59E-08	2.45E-07
[2]	Nickel	2.10E-03	2.06E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	3.09E-07	1.35E-06
[2, 3]	Total POM	8.82E-05	8.65E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.30E-08	5.68E-08
[2, 3]	2-Methylnaphthalene	2.40E-05	2.35E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.53E-09	1.55E-08
[2, 3]	3-Methylchloranthrene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	7,12-Dimethylbenz(a)anthracene	1.60E-05	1.57E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.35E-09	1.03E-08
[2, 3]	Acenaphthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Acenaphthylene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Anthracene	2.40E-06	2.35E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.53E-10	1.55E-09
[2, 3]	Benz(a)anthracene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Benzo(a)pyrene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-10	7.73E-10
[2, 3]	Benzo(b)fluoranthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Benzo(g,h,i)perylene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-10	7.73E-10
[2, 3]	Benzo(k)fluoranthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Chrysene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Dibenzo(a,h)anthracene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-10	7.73E-10
[2, 3]	Fluoranthene	3.00E-06	2.94E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.41E-10	1.93E-09
[2, 3]	Fluorene	2.80E-06	2.75E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.12E-10	1.80E-09
[2, 3]	Indeno(1,2,3-cd)pyrene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Phenanthrene	1.70E-05	1.67E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.50E-09	1.10E-08
[2, 3]	Pyrene	5.00E-06	4.90E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	7.35E-10	3.22E-09
	Butane	2.10E+00	2.06E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.09E-04	1.35E-03
	Ethane	3.10E+00	3.04E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.56E-04	2.00E-03
	Selenium	2.40E-05	2.35E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.53E-09	1.55E-08
	Vanadium	2.30E-03	2.25E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.38E-07	1.48E-06
	Zinc	2.90E-02	2.84E-05	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.26E-06	1.87E-05
	Copper	8.50E-04	8.33E-07	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.25E-07	5.48E-07
	Molybdenum	1.10E-03	1.08E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.62E-07	7.09E-07
	Barium	4.40E-03	4.31E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	6.47E-07	2.83E-06
	Pentane	2.60E+00	2.55E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.82E-04	1.67E-03
	Propane	1.60E+00	1.57E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.35E-04	1.03E-03
				NO_x	1.47E-02	6.44E-02
				CO	1.24E-02	5.41E-02
				SO_2	8.82E-05	3.86E-04
	Total Emissions			$PM/PM_{10}/PM_{2.5}$	1.12E-03	4.90E-03
				VOC	1.62E-03	7.09E-03
				Lead (Pb)	7.35E-08	3.22E-07
				HAPs	2.78E-04	1.22E-03

[1] Emission factors are from AP-42 Section 1.4 (7/98).

[2] Hazardous Air Pollutant (HAP) as defined by Section 112(b) of the Clean Air Act.

[3] HAP because it is Polycyclic Organic Matter (POM). POM is a HAP as defined by Section 112(b) of the Clean Air Act.

[4] Conservatively TOC emission factor are used to estimate the VOC emissions.

Heaters Emission Calculations

Source Description =	**Warehouse II Heater 3**
Source ID=	**WH2HEATER3**
Design Heat Input Capacity (MMBTU/hr)=	150,000 Btu/hr
Design Heat Input Capacity (MMBTU/hr)=	0.150 MMBtu/hr
Annual Operating Hours (hrs/yr)=	8,760 hrs/yr
Heating Value of Natural Gas =	1,020 Btu/scf
Maximum Annual Heat Input (equivalent to 8,760 hr/yr at max rate) =	1,314.00 MMBtu/yr

		Emission Factor [1]			Estimated Potential Emissions	
Ref.	**Pollutant**	**(lb/MMscf)**	**(lb/MMBtu)**	**Source**	**(lb/hr)**	**(tpy)**
	NO_x	100	9.80E-02	AP-42 Section 1.4, Table 1.4-1 (7/98)	1.47E-02	6.44E-02
	CO	84	8.24E-02	AP-42 Section 1.4, Table 1.4-1 (7/98)	1.24E-02	5.41E-02
	SO_2	0.6	5.88E-04	AP-42 Section 1.4, Table 1.4-2 (7/98)	8.82E-05	3.86E-04
	$PM/PM_{10}/PM_{2.5}$	7.6	7.45E-03	AP-42 Section 1.4, Table 1.4-2 (7/98)	1.12E-03	4.90E-03
[4]	VOC	11	1.08E-02	AP-42 Section 1.4, Table 1.4-2 (7/98)	1.62E-03	7.09E-03
	Lead (Pb)	5.00E-04	4.90E-07	AP-42 Section 1.4, Table 1.4-2 (7/98)	7.35E-08	3.22E-07
[2]	Mercury (Hg)	2.60E-04	2.55E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	3.82E-08	1.67E-07
[2]	Benzene	2.10E-03	2.06E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.09E-07	1.35E-06
[2]	Dichlorobenzene	1.20E-03	1.18E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-07	7.73E-07
[2]	Formaldehyde	7.50E-02	7.35E-05	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.10E-05	4.83E-05
[2]	Hexane	1.80E+00	1.76E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-04	1.16E-03
[2]	Naphthalene	6.10E-04	5.98E-07	AP-42 Section 1.4, Table 1.4-3 (7/98)	8.97E-08	3.93E-07
[2]	Toluene	3.40E-03	3.33E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	5.00E-07	2.19E-06
[2]	Arsenic	2.00E-04	1.96E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	2.94E-08	1.29E-07
[2]	Beryllium	1.20E-05	1.18E-08	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.76E-09	7.73E-09
[2]	Cadmium	1.10E-03	1.08E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.62E-07	7.09E-07
[2]	Chromium	1.40E-03	1.37E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	2.06E-07	9.02E-07
[2]	Cobalt	8.40E-05	8.24E-08	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.24E-08	5.41E-08
[2]	Manganese	3.80E-04	3.73E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	5.59E-08	2.45E-07
[2]	Nickel	2.10E-03	2.06E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	3.09E-07	1.35E-06
[2, 3]	Total POM	8.82E-05	8.65E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.30E-08	5.68E-08
[2, 3]	2-Methylnaphthalene	2.40E-05	2.35E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.53E-09	1.55E-08
[2, 3]	3-Methylchloranthrene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	7,12-Dimethylbenz(a)anthracene	1.60E-05	1.57E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.35E-09	1.03E-08
[2, 3]	Acenaphthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Acenaphthylene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Anthracene	2.40E-06	2.35E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.53E-10	1.55E-09
[2, 3]	Benz(a)anthracene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Benzo(a)pyrene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-10	7.73E-10
[2, 3]	Benzo(b)fluoranthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Benzo(g,h,i)perylene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-10	7.73E-10
[2, 3]	Benzo(k)fluoranthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Chrysene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Dibenzo(a,h)anthracene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-10	7.73E-10
[2, 3]	Fluoranthene	3.00E-06	2.94E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.41E-10	1.93E-09
[2, 3]	Fluorene	2.80E-06	2.75E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.12E-10	1.80E-09
[2, 3]	Indeno(1,2,3-cd)pyrene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Phenanthrene	1.70E-05	1.67E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.50E-09	1.10E-08
[2, 3]	Pyrene	5.00E-06	4.90E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	7.35E-10	3.22E-09
	Butane	2.10E+00	2.06E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.09E-04	1.35E-03
	Ethane	3.10E+00	3.04E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.56E-04	2.00E-03
	Selenium	2.40E-05	2.35E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.53E-09	1.55E-08
	Vanadium	2.30E-03	2.25E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.38E-07	1.48E-06
	Zinc	2.90E-02	2.84E-05	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.26E-06	1.87E-05
	Copper	8.50E-04	8.33E-07	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.25E-07	5.48E-07
	Molybdenum	1.10E-03	1.08E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.62E-07	7.09E-07
	Barium	4.40E-03	4.31E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	6.47E-07	2.83E-06
	Pentane	2.60E+00	2.55E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.82E-04	1.67E-03
	Propane	1.60E+00	1.57E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.35E-04	1.03E-03
				NO_x	1.47E-02	6.44E-02
				CO	1.24E-02	5.41E-02
				SO_2	8.82E-05	3.86E-04
	Total Emissions			$PM/PM_{10}/PM_{2.5}$	1.12E-03	4.90E-03
				VOC	1.62E-03	7.09E-03
				Lead (Pb)	7.35E-08	3.22E-07
				HAPs	2.78E-04	1.22E-03

[1] Emission factors are from AP-42 Section 1.4 (7/98).

[2] Hazardous Air Pollutant (HAP) as defined by Section 112(b) of the Clean Air Act.

[3] HAP because it is Polycyclic Organic Matter (POM). POM is a HAP as defined by Section 112(b) of the Clean Air Act.

[4] Conservatively TOC emission factor are used to estimate the VOC emissions.

Heaters Emission Calculations

Source Description =	**Warehouse II Heater 4**
Source ID=	**WH2HEATER4**
Design Heat Input Capacity (MMBTU/hr)=	150,000 Btu/hr
Design Heat Input Capacity (MMBTU/hr)=	0.150 MMBtu/hr
Annual Operating Hours (hrs/yr)=	8,760 hrs/yr
Heating Value of Natural Gas =	1,020 Btu/scf
Maximum Annual Heat Input (equivalent to 8,760 hr/yr at max rate) =	1,314.00 MMBtu/yr

		Emission Factor [1]			Estimated Potential Emissions	
Ref.	**Pollutant**	**(lb/MMscf)**	**(lb/MMBtu)**	**Source**	**(lb/hr)**	**(tpy)**
	NO_x	100	9.80E-02	AP-42 Section 1.4, Table 1.4-1 (7/98)	1.47E-02	6.44E-02
	CO	84	8.24E-02	AP-42 Section 1.4, Table 1.4-1 (7/98)	1.24E-02	5.41E-02
	SO_2	0.6	5.88E-04	AP-42 Section 1.4, Table 1.4-2 (7/98)	8.82E-05	3.86E-04
	$PM/PM_{10}/PM_{2.5}$	7.6	7.45E-03	AP-42 Section 1.4, Table 1.4-2 (7/98)	1.12E-03	4.90E-03
[4]	VOC	11	1.08E-02	AP-42 Section 1.4, Table 1.4-2 (7/98)	1.62E-03	7.09E-03
	Lead (Pb)	5.00E-04	4.90E-07	AP-42 Section 1.4, Table 1.4-2 (7/98)	7.35E-08	3.22E-07
[2]	Mercury (Hg)	2.60E-04	2.55E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	3.82E-08	1.67E-07
[2]	Benzene	2.10E-03	2.06E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.09E-07	1.35E-06
[2]	Dichlorobenzene	1.20E-03	1.18E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-07	7.73E-07
[2]	Formaldehyde	7.50E-02	7.35E-05	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.10E-05	4.83E-05
[2]	Hexane	1.80E+00	1.76E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-04	1.16E-03
[2]	Naphthalene	6.10E-04	5.98E-07	AP-42 Section 1.4, Table 1.4-3 (7/98)	8.97E-08	3.93E-07
[2]	Toluene	3.40E-03	3.33E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	5.00E-07	2.19E-06
[2]	Arsenic	2.00E-04	1.96E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	2.94E-08	1.29E-07
[2]	Beryllium	1.20E-05	1.18E-08	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.76E-09	7.73E-09
[2]	Cadmium	1.10E-03	1.08E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.62E-07	7.09E-07
[2]	Chromium	1.40E-03	1.37E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	2.06E-07	9.02E-07
[2]	Cobalt	8.40E-05	8.24E-08	AP-42 Section 1.4, Table 1.4-4 (7/98)	1.24E-08	5.41E-08
[2]	Manganese	3.80E-04	3.73E-07	AP-42 Section 1.4, Table 1.4-4 (7/98)	5.59E-08	2.45E-07
[2]	Nickel	2.10E-03	2.06E-06	AP-42 Section 1.4, Table 1.4-4 (7/98)	3.09E-07	1.35E-06
[2, 3]	Total POM	8.82E-05	8.65E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.30E-08	5.68E-08
[2, 3]	2-Methylnaphthalene	2.40E-05	2.35E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.53E-09	1.55E-08
[2, 3]	3-Methylchloranthrene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	7,12-Dimethylbenz(a)anthracene	1.60E-05	1.57E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.35E-09	1.03E-08
[2, 3]	Acenaphthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Acenaphthylene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Anthracene	2.40E-06	2.35E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.53E-10	1.55E-09
[2, 3]	Benz(a)anthracene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Benzo(a)pyrene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-10	7.73E-10
[2, 3]	Benzo(b)fluoranthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Benzo(g,h,i)perylene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-10	7.73E-10
[2, 3]	Benzo(k)fluoranthene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Chrysene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Dibenzo(a,h)anthracene	1.20E-06	1.18E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.76E-10	7.73E-10
[2, 3]	Fluoranthene	3.00E-06	2.94E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.41E-10	1.93E-09
[2, 3]	Fluorene	2.80E-06	2.75E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.12E-10	1.80E-09
[2, 3]	Indeno(1,2,3-cd)pyrene	1.80E-06	1.76E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.65E-10	1.16E-09
[2, 3]	Phenanthrene	1.70E-05	1.67E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.50E-09	1.10E-08
[2, 3]	Pyrene	5.00E-06	4.90E-09	AP-42 Section 1.4, Table 1.4-3 (7/98)	7.35E-10	3.22E-09
	Butane	2.10E+00	2.06E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.09E-04	1.35E-03
	Ethane	3.10E+00	3.04E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.56E-04	2.00E-03
	Selenium	2.40E-05	2.35E-08	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.53E-09	1.55E-08
	Vanadium	2.30E-03	2.25E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.38E-07	1.48E-06
	Zinc	2.90E-02	2.84E-05	AP-42 Section 1.4, Table 1.4-3 (7/98)	4.26E-06	1.87E-05
	Copper	8.50E-04	8.33E-07	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.25E-07	5.48E-07
	Molybdenum	1.10E-03	1.08E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	1.62E-07	7.09E-07
	Barium	4.40E-03	4.31E-06	AP-42 Section 1.4, Table 1.4-3 (7/98)	6.47E-07	2.83E-06
	Pentane	2.60E+00	2.55E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	3.82E-04	1.67E-03
	Propane	1.60E+00	1.57E-03	AP-42 Section 1.4, Table 1.4-3 (7/98)	2.35E-04	1.03E-03
				NO_x	1.47E-02	6.44E-02
				CO	1.24E-02	5.41E-02
				SO_2	8.82E-05	3.86E-04
	Total Emissions			$PM/PM_{10}/PM_{2.5}$	1.12E-03	4.90E-03
				VOC	1.62E-03	7.09E-03
				Lead (Pb)	7.35E-08	3.22E-07
				HAPs	2.78E-04	1.22E-03

[1] Emission factors are from AP-42 Section 1.4 (7/98).

[2] Hazardous Air Pollutant (HAP) as defined by Section 112(b) of the Clean Air Act.

[3] HAP because it is Polycyclic Organic Matter (POM). POM is a HAP as defined by Section 112(b) of the Clean Air Act.

[4] Conservatively TOC emission factor are used to estimate the VOC emissions.

Haul Road Emission Calculations

Source ID= HAULRDS
Source Description = Houl Roads

Emission Factor Equation for Haul Roads

$$\text{Emission Factor}\left(\frac{\text{lb}}{\text{VMT}}\right) = k \times (s/12)^a \times (W/3)^b \times \left(\frac{365-p}{365}\right)$$

where: VMT = vehicle miles traveled

0.29 VMT/hr (Per 2006 permit renewal emission calculations)

2,500 VMT/year (Per 2006 permit renewal emission calculations)

The AP-42 empirical constants are[1]

	for PM	for PM_{10}	for $PM_{2.5}$	
k:	4.9	1.5	0.15	(unpaved industrial roads)
a:	0.7	0.9	0.9	(unpaved industrial roads)
b:	0.45	0.45	0.45	(unpaved industrial roads)

s = silt content of unpaved road surface material (%)

8.0 % (mean value taken for Stone Quarrying and Processing- Haul road to/from pit) (AP-42 Table 13.2.2-1)

p = number of days with measurable precipitation (used for annual-average calculations only)

60 days (number of days of 0.1 inch rain, per old emission calculations)

W = mean vehicle weight (tons)

60.0 tons (Per 2006 permit renewal emission calculations)

N = 365 (number of days in averaging period)

Fugitive road dust emissions will be minimized through best management practices, e.g., watering/chemical dust suppression. The following control efficiency (based on Equation 3-2 of EPA's Control of Open Fugitive Dust Sources) is applied to account for this program.

Control Efficiency = 90 %

Road Type	Hourly Maximum Emission Factor			Annual Average Emission Factor			Hourly Emission Rates			Potential Annual Emission Rates		
	PM (lb/VMT)	PM_{10} (lb/VMT)	$PM_{2.5}$ (lb/VMT)	PM (lb/VMT)	PM_{10} (lb/VMT)	$PM_{2.5}$ (lb/VMT)	PM (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	PM (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Haul Road	1.42	0.40	0.04	1.19	0.034	0.034	0.41	0.12	0.01	1.48	0.04	0.04
						Total	**0.41**	**0.12**	**0.01**	**1.48**	**0.04**	**0.04**

[1] Per U.S. EPA, AP-42, Table 13.2.2-2, November 2006.

Diesel Tank Emission Calculations

Diesel Tank Input Data

	Symbol	Value	Units
Tank length	Hs	2.66	ft
Diameter	D	4.00	ft
Tank volume	V	250	gallons
Turnovers	n	4.80	
Net throughput	Q	1,200	gallons/yr
Shell Color/ Shade		gray/light	
Tank ID		T-1	
Material stored		Diesel	

Diesel Tank Output Data

	Symbol	Value	Units
Breathing/ Standing Losses	L_S	0.13	lb/yr
Working Storage Losses	L_W	0.04	lb/yr
Total Losses	L_T	0.17	lb/yr
Total Hourly Losses		1.98E-05	lb/hr
Total Annual Losses		0.0001	tpy

Diesel Tank Emission Calculations

Diesel Tank Emission Calculations [1]

	Symbol	Value	Units	Equation No. [1]
Standing Losses Calculation:	L_S	0.13		1-4
Vapor Space Volume	V_V	15.39	ft^3	1-3
Vapor Density	W_V	0.0003	lb/ft^3	1-21
Vapor Space Expansion Factor	K_E	0.0890		1-5
Vented Vapor Saturation Factor	K_S	0.9991		1-20
Vapor Space Volume	$\mathbf{V_V}$	**15.39**	$\mathbf{ft^3}$	1-3
Effective Diameter	D_E	3.68	ft	1-13
Vapor Space Outage	H_{VO}	1.45	ft	1-15
Tank effective height	H_E	2.89	ft	1-14
Vapor Density	$\mathbf{W_V}$	**0.0003**	$\mathbf{lb/ft^3}$	1-21
Vapor Molecular Weight	M_V	130.00	lb/lb-mole	
Vapor Pressure at Daily Average Liquid Surface Temperature	P_{VA}	0.0116	psia	
Daily Average Liquid Surface Temperature	T_{LA}	538.41	°R	
Ideal Gas Constant	R	10.73	psia cuft /	
Vapor Space Expansion Factor	$\mathbf{K_E}$	**0.0890**		1-5
Daily Vapor Temperature Range		61.5951	°R	
Daily Vapor Pressure Range		3.5266	psia	
Breather Vent Press. Setting Range		0.06	psia	
Vapor Pressure at Daily Average Liquid Surface Temperature		0.0077	psia	
Vapor Pressure at Daily Minimum Liquid Surface Temperature		0.004	psia	
Vapor Pressure at Daily Maximum Liquid Surface Temperature		0.0112	psia	
Daily Avg. Liquid Surface Temperature		521.6835	°R	
Daily Min. Liquid Surface Temperature		506.2847	°R	
Daily Max. Liquid Surface Temperature		537.0823	°R	
Daily Ambient Temperature Range		33.8417	°R	
Tank Paint Solar Absorptance (Shell)		0.60		
Daily Total Solar Insulation Factor		1493.95	Btu/ft^2-day	
Vented Vapor Saturation Factor	$\mathbf{K_S}$	**0.9991**		1-20
Vapor Pressure at Daily Average Liquid Surface Temperature	P_{VA}	0.0116	psia	
Vapor Space Outage	H_{VO}	1.45	ft	1-15
Working Losses Calculation:	L_W	0.0431	lb/yr	1-29
Vapor Molecular Weight	M_V	130.00	lb/lb-mole	
Vapor Pressure at Daily Average Liquid Surface Temperature	P_{VA}	0.0116	psia	
Annual Net Throughput	Q	29	bbl/yr	
Annual Turnovers	n	4.80		
Turnover Factor	K_N	1		
Tank Diameter (ft)	D	4.00	ft	
Working Loss Product Factor	K_P	1		

[1] These emission calculations are based on AP-42, Section 7.1.3.1 (November 2006) for Fixed Rood Tanks.

[2] In lieu of providing extensive sample calculations, the AP-42 equation numbers are provided in this column.

Gasoline Tank Emission Calculations

Gasoline Tank Input Data

	Symbol	Value	Units
Tank length	Hs	9.50	ft
Diameter	D	3.00	ft
Tank volume	V	502	gallons
Turnovers	n	10.75	
Net throughput	Q	5,400	gallons/yr
Shell Color/ Shade		white/white	
Tank EPN		T-2	
Material stored		Gasoline	

Gasoline Tank Output Data

	Symbol	Value	Units
Breathing/ Standing Losses	L_S	464.61	lb/yr
Working Storage Losses	L_W	44.03	lb/yr
Total Losses	L_T	508.64	lb/yr
Total Hourly Losses	L_T	0.0581	lb/hr
Total Annual Losses		0.2543	tpy

Gasoline Tank Emission Calculations

Gasoline Tank Emission Calculations [1]

	Symbol	Value	Units	Equation No. [1]
Standing Losses Calculation:	L_S	464.61		1-4
Vapor Space Volume	V_V	67.42	ft^3	1-3
Vapor Density	W_V	0.0593	lb/ft^3	1-21
Vapor Space Expansion Factor	K_E	0.5196		1-7
Vented Vapor Saturation Factor	K_S	0.6129		1-20
Vapor Space Volume	$\mathbf{V_V}$	**67.42**	$\mathbf{ft^3}$	1-3
Effective Diameter	D_E	6.02	ft	1-13
Vapor Space Outage	H_{VO}	2.37	ft	1-15
Tank effective height	H_E	4.73	ft	1-14
Vapor Density	$\mathbf{W_V}$	**0.0593**	$\mathbf{lb/ft^3}$	1-21
Vapor Molecular Weight	M_V	68.00	lb/lb-mole	
Vapor Pressure at Daily Average Liquid Surface Temperature	P_{VA}	5.0366	psia	
Daily Average Liquid Surface Temperature	T_{LA}	538.41	°R	
Ideal Gas Constant	R	10.73	psia cuft /	
Vapor Space Expansion Factor	$\mathbf{K_E}$	**0.5196**		1-7
Daily Vapor Temperature Range		61.5951	°R	
Daily Vapor Pressure Range		3.5266	psia	
Breather Vent Press. Setting Range		0.06	psia	
Vapor Pressure at Daily Average Liquid Surface Temperature		5.9925	psia	
Vapor Pressure at Daily Minimum Liquid Surface Temperature		4.4339	psia	
Vapor Pressure at Daily Maximum Liquid Surface Temperature		7.9604	psia	
Daily Avg. Liquid Surface Temperature		521.6835	°R	
Daily Min. Liquid Surface Temperature		506.2847	°R	
Daily Max. Liquid Surface Temperature		537.0823	°R	
Daily Ambient Temperature Range		33.8417	°R	
Tank Paint Solar Absorptance (Shell)		0.17		
Daily Total Solar Insulation Factor		1493.95	Btu/ft^2-day	
Vented Vapor Saturation Factor	$\mathbf{K_S}$	**0.6129**		1-20
Vapor Pressure at Daily Average Liquid Surface Temperature	P_{VA}	5.0366	psia	
Vapor Space Outage	H_{VO}	2.37	ft	1-15
Working Losses Calculation:	L_W	44.0343	lb/yr	1-29
Vapor Molecular Weight	M_V	68.00	lb/lb-mole	
Vapor Pressure at Daily Average Liquid Surface Temperature	P_{VA}	5.0366	psia	
Annual Net Throughput	Q	129	bbl/yr	
Annual Turnovers	n	10.75		
Turnover Factor	K_N	1		
Tank Diameter (ft)	D	3.00	ft	
Working Loss Product Factor	K_P	1		

[1] These emission calculations are based on AP-42, Section 7.1.3.1 (November 2006) for Fixed Rood Tanks.

[2] In lieu of providing extensive sample calculations, the AP-42 equation numbers are provided in this column.

Cooling Tower 1 Emission Calculation

Cooling Tower Emission Calculations

Marley Cooling Tower Model #NC9161G

Design Circulation Rate:	1600	gpm
Cooling Capacity:	1000	tons/hr
Marley Drift Guarantee:	0.002%	of circulation rate lost to drift (max)

Month	g/L TDS ($CaCO_3$) [a]
Oct-08	0.153
Nov-08	0.183
Dec-08	0.242
Jan-09	0.268
Feb-09	0.302
Mar-09	0.215
Apr-09	0.478
May-09	0.384
Jun-09	0.276
Jul-09	0.295
Aug-09	0.374
Sep-09	0.515
Average	***0.307***
Maximum	***0.515***
Maximum in ppm	***515***
Conservative Factor	***5***
Cons. Max (in ppm) [b]	***2,575***

[a] Source-specific Total Dissolved Solids (TDS) is measured as $CaCO_3$ from the existing cooling tower (Marley Model #NC9161G)

[b] Units are converted from g/L (parts per thousand) to ppm

Derived Source-Specific PM Emission Factors for Wet Cooling Tower

Tower Type	Total Liquid Drift Circulating Water Flow			PM10 [a]	
	%	g/10L	lb/1000 gal	g/10L	lb/1000 gal
Induced Draft	0.002%	0.20	0.17	0.0005	0.0004

[a] Source-specific PM Emission Factors for the existing cooling tower is derived using the available information in the same manner as described in EPA AP42. 13.4 (Table 13.4-1 shown below as reference).

PM 10 Emission (lb/hr) =	1600	gallon / min	x	60	min / hr	x	0.0004	lb / 1000 gallon	=	**0.041**	**lb / hr**

PM 10 Emission (lbs/yr) =	0.041	lb / hr	x	8760	hrs / yr	=	**360.9**	**lb / yr**

PM 10 Emission (tons/yr) =	361	lb / yr	x	1	ton / 2000 lbs	=	**0.18**	**ton / yr**

Cooling Tower 2 Emission Calculation

Cooling Tower Emission Calculations

Marley Cooling Tower Model NC8413WAN

Design Circulation Rate:	1600	gpm
Cooling Capacity:	16	MMBTU/hr
Marley Drift Guarantee:	0.005%	of circulation rate lost to drift (max)

Month	g/L TDS ($CaCO_3$) [a]
Oct-08	0.153
Nov-08	0.183
Dec-08	0.242
Jan-09	0.268
Feb-09	0.302
Mar-09	0.215
Apr-09	0.478
May-09	0.384
Jun-09	0.276
Jul-09	0.295
Aug-09	0.374
Sep-09	0.515
Average	***0.307***
Maximum	***0.515***
Maximum in ppm	***515***
Conservative Factor	***5***
Cons. Max (in ppm) [b]	***2,575***

[a] Source-specific Total Dissolved Solids (TDS) is measured as $CaCO_3$ from the existing cooling tower and equivalent TDS amount is assumed for the proposed Marley Cooling Tower Model NC8413WAN

[b] Units are converted from g/L (parts per thousand) to ppm

Derived Source-Specific PM Emission Factors for Wet Cooling Tower

Tower Type	Total Liquid Drift Circulating Water Flow			PM10 [a]	
	%	g/10L	lb/1000 gal	g/10L	lb/1000 gal
Induced Draft	0.005%	0.50	0.42	0.0013	0.0011

[a] Source-specific PM Emission Factors for the proposed cooling tower is derived using the available information in the same manner as described in EPA AP42. 13.4 (Table 13.4-1 shown below as reference).

PM 10 Emission (lb/hr) =	1600	gallon / min	x	60	min / hr	x	0.0011	lb / 1000 gallon	=	**0.103**	**lb / hr**

PM 10 Emission (lbs/yr) =	0.103	lb / hr	x	8760	hrs / yr	=	**902.3**	**lb / yr**

PM 10 Emission (tons/yr) =	902	lb / yr	x	1	ton / 2000 lbs	=	**0.45**	**ton / yr**

TimeStamp	P1 Daily average DSCFM	Tons CO2 emissions	P2 Daily average DSCFM	Tons CO2 emissions
1/1/2011 0:00	16,908.23	73.80	20,060.02	75.14
1/2/2011 0:00	16,569.31	72.32	19,410.36	72.71
1/3/2011 0:00	16,506.85	72.04	19,881.80	74.47
1/4/2011 0:00	16,590.69	72.41	19,927.76	74.64
1/5/2011 0:00	16,463.86	71.86	19,581.54	73.35
1/6/2011 0:00	14,635.61	63.88	18,352.85	68.74
1/7/2011 0:00	11,724.79	51.17	16,339.19	61.20
1/8/2011 0:00	14,269.81	62.28	14,392.74	53.91
1/9/2011 0:00	14,613.40	63.78	14,789.10	55.40
1/10/2011 0:00	14,436.00	63.01	14,929.88	55.92
1/11/2011 0:00	15,217.17	66.41	15,035.90	56.32
1/12/2011 0:00	15,745.78	68.72	16,536.30	61.94
1/13/2011 0:00	17,114.05	74.69	18,887.64	70.75
1/14/2011 0:00	7,062.43	30.82	18,933.94	70.92
1/15/2011 0:00	16,771.45	73.20	18,557.84	69.51
1/16/2011 0:00	17,875.03	78.01	18,667.27	69.92
1/17/2011 0:00	17,971.56	78.44	11,925.91	44.67
1/18/2011 0:00	18,069.11	78.86	10,343.77	38.74
1/19/2011 0:00	17,984.17	78.49	7,920.37	29.67
1/20/2011 0:00	17,998.36	78.55	6,205.51	23.24
1/21/2011 0:00	17,791.14	77.65	5,998.31	22.47
1/22/2011 0:00	17,998.45	78.55	12,084.59	45.27
1/23/2011 0:00	18,222.89	79.53	19,025.62	71.26
1/24/2011 0:00	18,330.31	80.00	19,070.15	71.43
1/25/2011 0:00	18,118.66	79.08	19,114.19	71.60
1/26/2011 0:00	17,994.57	78.54	17,913.28	67.10
1/27/2011 0:00	17,966.82	78.42	17,529.66	65.66
1/28/2011 0:00	17,779.65	77.60	18,627.13	69.77
1/29/2011 0:00	18,145.07	79.19	19,174.82	71.82
1/30/2011 0:00	17,959.00	78.38	18,433.31	69.05
1/31/2011 0:00	17,445.04	76.14	18,241.59	68.33
		2,235.81	P1 Tons CO2	1,894.94 P2 Tons CO2

	Lb/hr	TPY
P1	26,830	22,739
P2	6,126	5,192

4,130.75 Total CO2 emissions for Jan 2011

49,568.98 TPY CO2 emissions (estimated, Jan x 12)