EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Permit Numbers 36644, PSD-TX-903M1, and N-007M1

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates * lb/hr	Emission Rates * TPY**
N-1	Recycle Ethane Cracking Furnace	NO_x (7)	24.16	79.37
		SO_2 (7)	1.12	4.89
		CO (7)	23.25	101.85
		PM_{10} (7)	1.51	6.61
		VOC (7)	0.57	2.51
N-2	Fresh Feed Cracking Heater	NO_x (7)	35.34	116.08
		SO_2 (7)	1.61	7.07
		CO (7)	34.01	148.97
		PM_{10} (7)	2.21	9.67
		VOC (7)	0.84	3.68
N-3	Fresh Feed Cracking Heater	NO_x (7)	35.34	116.08
		SO_2 (7)	1.61	7.07
		CO (7)	34.01	148.97
		PM_{10} (7)	2.21	9.67
		VOC (7)	0.84	3.68
N-4	Fresh Feed Cracking Heater	NO_x (7)	35.34	116.08
		SO_2 (7)	1.61	7.07
		CO (7)	34.01	148.97
		PM_{10} (7)	2.21	9.67
		VOC (7)	0.84	3.68
N-5	Fresh Feed Cracking Heater	NO_x (7)	35.34	116.08
		SO_2 (7)	1.61	7.07
		CO (7)	34.01	148.97
		PM_{10} (7)	2.21	9.67
		VOC (7)	0.84	3.68

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates * lb/hr	TPY**
N-6	Fresh Feed Cracking Heater	NO_x (7)	35.34	116.08
		SO_2 (7)	1.61	7.07
		CO (7)	34.01	148.97
		PM_{10} (7)	2.21	9.67
		VOC (7)	0.84	3.68
N-7	Fresh Feed Cracking Heater	NO_x (7)	35.34	116.08
		SO_2 (7)	1.61	7.07
		CO (7)	34.01	148.97
		PM_{10} (7)	2.21	9.67
		VOC (7)	0.84	3.68
N-8	Fresh Feed Cracking Heater	NO_x (7)	35.34	116.08
		SO_2 (7)	1.61	7.07
		CO (7)	34.01	148.97
		PM_{10} (7)	2.21	9.67
		VOC (7)	0.84	3.68
N-10	Catalyst Regeneration Effluent	VOC (7)	0.01	0.01
N-11	Reactor Regeneration Effluent (Startup, Shutdown, and Maintenance)	CO	63.55	53.37
		VOC (7)	0.01	0.01
N-12	DP Reactor Feed Heater	NO_x (7)	5.01	13.71
		SO_2 (7)	0.22	0.95
		CO (7)	2.8	12.26
		PM_{10} (7)	0.38	1.64
		VOC (7)	0.17	0.74
	DP Reactor Feed Heater Startup Emission Rate	CO (7)	14.5	1.74
N-13	DP Reactor Regeneration	NO_x (7)	1.73	1.42

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates * lb/hr	TPY**
	Heater	SO_2 (7)	0.07	0.10
		CO (7)	2.4	3.94
		PM_{10} (7)	0.13	0.17
		VOC (7)	0.06	0.08
N-14	Auxiliary Boiler	NO_x	13.60	20.10
		SO_2	1.24	0.92
		CO	15.60	23.20
		PM_{10}	1.58	2.35
		VOC	1.58	2.35
N-20A	GTG HRSG Unit 1	NO_x	15.30	
	GE Frame 6B	SO_2	4.46	
	310.4 MMBtu/hr	CO	53.90	
	Duct Burner (with SCR)	PM_{10}	5.48	
		VOC	3.85	
		NH_3	7.61	30.20
N-20B	GTG HRSG Unit 2	NO_x	24.10	
	GE Frame 6B	SO_2	4.46	
	310.4 MMBtu/hr	CO	53.90	
	Duct Burner (with SCR)	PM_{10}	5.48	
		VOC	3.85	
		NH_3	7.61	30.20

Emission Point Nos. N-14, N-20A, and N-20B are subject to the following combined annual emission caps for the specified pollutants:

N-14, N-20A, N-20B	Annual Emission Caps	NO_x	—	179.00
	SO_2		—18.50	
		CO	—	429.00
		PM_{10}	—	49.00
		VOC	—	33.00
N-15	Ground Flare (Including	NO_x (7)	2,219.7	452.7
	planned turnarounds) -	SO_2 (7)	165.8	7.0
	Calendar Year 2006 (8)	CO (7)	15,794.4	1040.3
		VOC (7)	24,418.1	905.3

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates * lb/hr	TPY**
		H_2S	1.8	0.1
	Annual Cap	VOC, NO_x, and CO	—	1,600.0
N-15	Ground Flare (Including planned turnarounds) - Calendar Year 2007 (8)	NO_x (7)	2,219.7	367.8
		SO_2 (7)	165.8	5.7
		CO (7)	15,794.4	845.2
		VOC (7)	24,418.1	735.6
		H_2S	1.8	0.1
	Annual Cap	VOC, NO_x, and CO	—	1,300.0
N-15	Ground Flare - Calendar Year 2008 (No planned turnarounds in 2008) (8)	NO_x (7)	2,219.7	243.3
		SO_2 (7)	165.8	3.8
		CO (7)	15,794.4	559.2
		VOC (7)	24,418.1	486.6
		H_2S	1.8	0.1
	Annual Cap	VOC, NO_x, and CO	—	860.0
N-15	Ground Flare (Exclusive of planned turnarounds) - Year 2009 and beyond (8)	NO_x (7)	2,219.7	101.8
		SO_2 (7)	165.8	1.6
		CO (7)	15,794.4	233.9
		VOC (7)	24,418.1	203.5
		H_2S	1.8	0.1
	Annual Cap	VOC, NO_x, and CO	—	359.7
N-15	Ground Flare (Emissions from planned turnarounds) - Year 2009 and beyond (8)	NO_x (7)		84.9
		SO_2 (7)		1.3
		CO (7)		195.1
		VOC (7)		172.7
		H_2S		0.1
	Annual Cap	VOC, NO_x, and CO	—	300.0
N-18	Decoking Drum	CO (7)	720.00	27.88
		PM_{10} (7)	78.73	3.04
N-19	Thermal Oxidizer	NO_x (7)	0.24	0.88
		SO_2 (7)	0.08	0.28

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates * lb/hr	TPY**
		CO (7)	0.21	0.77
		PM_{10} (7)	0.04	0.13
		VOC (7)	0.03	0.11

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates * lb/hr	Emission Rates * TPY**
N-21A	Fire Pump Diesel Engine (6)	NO_x (7)	15.81	1.23
		SO_2 (7)	1.05	0.08
		CO (7)	3.41	0.27
		PM_{10} (7)	1.12	0.09
		VOC (7)	1.26	0.10
N-21B	Fire Pump Diesel Engine (6)	NO_x (7)	15.81	1.23
		SO_2 (7)	1.05	0.08
		CO (7)	3.41	0.27
		PM_{10} (7)	1.12	0.09
		VOC (7)	1.26	0.10
N-22	Carbon Bed Adsorber	Benzene	0.31	0.11
N-23	Ammonia Scrubber	NH_3	0.12	0.01
N-24A	Boiler B-7280 (425.4 MMBtu/hr)	VOC (7)	6.00	—
		NO_x (Routine)	4.25	—
		NO_x (Startup)	17.02	—
		CO (7)	14.89	—
		SO_2	6.05	—
		PM_{10} (7)	3.17	—
		NH_3	1.88	—
N-24B	Boiler B-7290 (425.4 MMBtu/hr)	VOC (7)	6.00	—
		NO_x (Routine)	4.25	—
		NO_x (Startup)	17.02	—
		CO (7)	14.89	—
		SO_2	6.05	—
		PM_{10} (7)	3.17	—
		NH_3	1.88	—
Total N-24A and N-24B	Boilers B-7280 and B-7290) (Total 425.4 MMBtu/hr)	VOC (7)	—	39.34
		NO_x (Routine)	—	37.26
		NO_x (Startup)	— 2.45	
		CO (7)	—130.42	
		SO_2	—38.68	
		PM_{10} (7)	—27.76	
		NH_3	—16.47	

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates * lb/hr	Emission Rates * TPY**
TK-470	Stormwater Tank	VOC	0.01	0.01
TK-2501	IFR Spent Caustic	VOC (7)	0.26	1.03
TK-8001	IFR WW Equalization	VOC (7)	0.37	0.66
TK-8101	EFR Contaminated Stormwater	VOC (7)	0.01	0.01
TK-7702	Sulfuric Acid Tank	H_2SO_4	0.01	0.01
		SO_3	0.01	0.01
F-1	Fugitives (4)	VOC (7)	2.08	9.20
F-2	Cooling Tower	PM_{10} (7)	1.90	2.76
		VOC (5) (7)	12.60	55.19
		Benzene	0.45	1.99
F-4	Benzene/Toluene Process	VOC (7)	0.25	1.12
F-5	C4 Huntsman Pipeline Fugitives	VOC	0.01	0.02
BOIL-AMM	Fugitives - Boilers 7280 and 7290 Ammonia Injection System	NH_3	0.01	0.02
COG-AMM-1	Ammonia Fugitives: Storage Tank and Vaporizer(4)	NH_3	0.01	0.06
COG-AMM-2	Ammonia Fugitives: GTG/HRSG Unit 2 SCR Ammonia Injection System(4)	NH_3	0.01	0.01
COG-AMM-3	Ammonia Fugitives: GTG/HRSG Unit 1 SCR Ammonia Injection System(4)	NH_3	0.01	0.01

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates * lb/hr	TPY**

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.
(2) Specific point source name. For fugitive sources use area name or fugitive source name.
(3) NO_x - total oxides of nitrogen
SO_2 - sulfur dioxide
CO - carbon monoxide
PM_{10} - particulate matter (PM) equal to or less than 10 microns in diameter. Where PM is not listed, it shall be assumed that no PM greater than 10 microns is emitted.
VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
H_2SO_4 - sulfuric acid
SO_3 - sulfur trioxide
NH_3 - ammonia
H_2S - hydrogen sulfide
(4) Fugitive emissions are an estimate only and should not be considered as a maximum allowable emission rate.
(5) The VOC emissions rates from the cooling tower are 12.6 pounds per hour and 55.19 tons per year, including benzene. The VOC emission rates are for total VOC.
(6) Emissions from the fire pump diesel engines are based on 156 hours per year operation. Non-emergency fire pump operations shall only occur between the hours of 8:00 a.m. and 5:00 p.m. (one engine at any one time).
(7) These emissions are permitted under PSD or Nonattainment review in addition to State.
(8) Turnarounds are planned for 2006 and 2007 for inspection and maintenance, and for implementation of improvements required by the TCEQ Agreed order approved/signed March 23, 2005 (Docket No. 2003-1317-AIR-E). Thereafter, consistent with the plant's original design basis, planned turnarounds are expected at nominal intervals of once every three years for purposes such as catalyst replacement, equipment inspection, and equipment repair or replacement.

* Emission rates are based on a continuous operating schedule.

** Beginning January 1, 2006, compliance with annual emission limits is based on a rolling 12-month period, with the following exception: Allowable emission rates and emission caps for the Ground Flare (EPN N-15) will be based upon calendar years for 2006 through 2009 and will be based on a rolling 12-month period beginning January 1, 2010.

Dated July 6, 2006