EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Flexible Permit Number 18897

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	TPY**
Routine Operating Emission Caps				
VOC SOURCES:				
Boilers, Furnaces, Heaters, Compressors, Incinerator, Thermal Oxidizer, FCCU/WGS, Fire Water Pump, Thermal Combustors, Cooling Towers (4), Fugitive Emissions (4), Loading Racks, Fixed-Roof Storage Tank Groups, Floating Roof Storage Tank Groups, and Carbon Canister Systems				
EMISSIONS CAP: through 01/01/2009		VOC	698	1,118
EMISSIONS CAP: through 01/01/2011		VOC	494	930
EMISSIONS CAP: through 04/04/2013		VOC	488	930
EMISSIONS CAP: after 04/04/2013		VOC	403	930
NO_x SOURCES:				
Boilers, Furnaces, Heaters, Compressors, Incinerator, Thermal Oxidizer, FCCU/WGS, Fire Water Pump, and Thermal Combustors				
EMISSIONS CAP: through 01/01/2009		NO_x	609	1,374
EMISSIONS CAP: through 01/01/2011		NO_x	377	937
EMISSIONS CAP: through 04/04/2013		NO_x	325	853
EMISSIONS CAP: after 04/04/2013		NO_x	205	535

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AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates * lb/hr	TPY**
CO SOURCES:				
Boilers, Furnaces, Heaters, Compressors, Incinerator, Thermal Oxidizer, FCCU/WGS, Fire Water Pump, Thermal Combustors, and Absorber				
EMISSIONS CAP:	through 01/01/2009	CO	270	630
EMISSIONS CAP:	through 01/01/2011	CO	203	556
EMISSIONS CAP:	through 04/04/2013	CO	187	526
EMISSIONS CAP:	after 04/04/2013	CO	171	479
PM SOURCES:				
Boilers, Furnaces, Heaters, Compressors, Incinerator, Thermal Oxidizer, FCCU/WGS, Fire Water Pump, Thermal Combustors, and Solid Waste Loading				
EMISSIONS CAP:	through 01/01/2009	PM	54	105
EMISSIONS CAP:	through 01/01/2011	PM	53	99
EMISSIONS CAP:	through 04/04/2013	PM	53	99
EMISSIONS CAP:	after 04/04/2013	PM	53	99

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AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates * lb/hr	TPY**
SO_2 SOURCES:				
Boilers, Furnaces, Heaters, Compressors, Incinerator, Thermal Oxidizer, FCCU/WGS, Fire Water Pump, and Thermal Combustors				
EMISSIONS CAP: through 01/01/2009		SO_2	230	525
EMISSIONS CAP: through 01/01/2011		SO_2	157	375
EMISSIONS CAP: through 04/04/2013		SO_2	157	375
EMISSIONS CAP: after 04/04/2013		SO_2	157	375
H_2S SOURCES:				
Boilers, Furnaces, Heaters, Thermal Oxidizer, Thermal Combustors, Carbon Canister EPN PK-854, Fugitive Emission EPNs F-16N, F-39, F-10N, F-23, F-71-72, F-1/2, F-11, and F-13 (4), and Sulfur Loading and Storage				
EMISSIONS CAP: through 01/01/2009		H_2S	3	6
EMISSIONS CAP: through 01/01/2011		H_2S	2	4
EMISSIONS CAP: through 04/04/2013		H_2S	2	4
EMISSIONS CAP: after 04/04/2013		H_2S	2	4

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AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates * lb/hr	TPY **
H_2SO_4 SOURCES:				
FCCU/WGS				
EMISSIONS CAP:	through 01/01/2009	H_2SO_4	4	18
EMISSIONS CAP:	through 01/01/2011	H_2SO_4	4	18
EMISSIONS CAP:	through 04/04/2013	H_2SO_4	4	18
EMISSIONS CAP:	after 04/04/2013	H_2SO_4	4	18
NH_3 SOURCES:				
Carbon Canister EPN PK-854				
EMISSIONS CAP:	through 01/01/2009	NH_3	0.01	0.06
EMISSIONS CAP:	through 01/01/2011	NH_3	0.01	0.06
EMISSIONS CAP:	through 04/04/2013	NH_3	0.01	0.06
EMISSIONS CAP:	after 04/04/2013	NH_3	0.01	0.06
HCl SOURCES:				
pH Neutralization				
EMISSIONS CAP:	through 01/01/2009	HCl	0.77	0.15
EMISSIONS CAP:	through 01/01/2011	HCl	0.10	0.02
EMISSIONS CAP:	through 04/04/2013	HCl	0.10	0.02
EMISSIONS CAP:	after 04/04/2013	HCl	0.10	0.02

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Benzene SOURCES:

Fugitive Emissions EPNs LE-FUG, F-16N, F-39, F-41, TNK-FUG, F-1/2, F-3/4, F-8, F-11, F-16S, F-22, and FUG (4), Thermal Oxidizer, Carbon Canister PK-854, Carbon Canister CA-SK, Fixed-Roof Storage Tank Groups, Floating Roof Storage Tank Groups, and Cooling Towers.

EMISSIONS CAP: through 01/01/2009	Benzene	1.75	5.90
EMISSIONS CAP: through 01/01/2011	Benzene	1.60	5.30
EMISSIONS CAP: through 04/04/2013	Benzene	1.60	5.27
EMISSIONS CAP: after 04/04/2013	Benzene	1.60	5.24

Individual Emission Rate Limits

D-2914	Relief Gas North Main Flare (6)	VOC	9.86	
		NO_x	18.48	
		CO	46.20	
		SO_2	72.90	
		H_2S	0.77	
R-2911	Rheniformer Flare (6)	VOC	0.01	
		NO_x	18.24	
		CO	46.35	
		SO_2	0.01	
		H_2S	0.77	
D-2914/R-2911	North Main Flare/ Rheniformer Flare (6)	VOC	0.13	
		NO_x	1.42	
		CO	5.58	
		SO_2	0.45	
		H_2S	0.01	
112	Plant Emergency/AAG/ Main South Flare (5)	VOC	0.01	0.01
		NO_x	0.02	0.07
		CO	0.11	0.49
		SO_2	0.01	0.01

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

XF8801/2	Steam Reformer Heater F-8801 Steam Reformer Heater F-8802	VOC	0.70	2.61
		NO_x	4.52	16.96
		CO	4.52	16.96
		PM	0.96	3.61
		SO_2	3.81	1.92
		H_2S	0.08	0.04
XF3903	Diesel Charge Heater	VOC	0.57	2.48
		NO_x	3.68	16.10
		CO	3.68	16.10
		PM	0.79	3.45
		SO_2	3.05	4.64
		H_2S	0.03	0.01
XF3903	Diesel Charge Heater (8)	CO	73.50	0.22
H2FUG	Hydrogen Plant No. 1 Fugitives (4)	CO	0.01	0.06
		VOC	1.54	1.69
		H_2S	0.01	0.01
9	Boiler No. 4	CO	1.05	3.51
		NO_x	3.95	13.22
		NH_3	0.64	2.17
		$PM/PM_{10}/PM_{2.5}$ (12)	4.57	11.35
		SO_2	8.11	10.36
		H_2SO_4	1.99	2.54
		TRS	0.68	0.93
		VOC	1.43	4.88
		H_2S	0.03	0.11
9	Boiler No. 4 (7)	CO	25.62	1.43
		NO_x	57.95	3.25
		VOC	1.43	0.10
		PM	4.57	0.32
		SO_2	0.05	0.01
F-24	Boiler No. 4 Process Fugitives (4)	VOC	0.03	0.12
		H_2S	0.01	0.01

Planned Maintenance, Startup, and Shutdown (MSS) Emission Rate Limits

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

MSS CAP	Sitewide MSS Sources Excluding Flares	VOC	485.89	70.41
		NO_x	3.87	19.92
		CO	209.09	13.19
		SO_2	21.36	1.68
		$PM_{10}/PM_{2.5}$ (9)	61.07	5.79
		H_2S	0.05	0.03
D-2914/R-2911	North Flares [Including North Relief Gas Flare (EPN D-2914) and Rheniformer Flare (EPN R-2911)]	VOC	92.90	0.89
		NO_x	41.24	9.81
		CO	164.24	30.55
		SO_2	587.61	5.66
		H_2S	6.24	0.06
112	South Main Flare	VOC	227.54	2.38
		NO_x	48.38	3.24
		CO	192.70	12.92
		SO_2	1471.87	23.27
		H_2S	15.64	0.25

(1) Emission point identification - either specific equipment designation or emission point number from a plot plan.
(2) Specific point source names. For fugitive sources, use an area name or fugitive source name.
(3) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
NO_x - total oxides of nitrogen
CO - carbon monoxide
PM - particulate matter, suspended in the atmosphere, including PM_{10}.
PM_{10} - particulate matter 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.
$PM_{2.5}$ - particulate matter equal to or less than 2.5 microns in diameter
SO_2 - sulfur dioxide
H_2S - hydrogen sulfide
H_2SO_4 - sulfuric acid
NH_3 - ammonia
HCl - hydrochloric acid
TRS - total reduced sulfur
(4) Emission rates are an estimate and enforceable through compliance with the applicable special condition(s) and permit application representations.
(5) Only pilot emissions are authorized for these combustion sources.
(6) Planned MSS emissions associated with authorized activities that are described in Special Condition No. 39.

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

(7) Planned startup and shutdown emissions for periods not to exceed 144 hours on a rolling 12-month basis only.
(8) Planned MSS emissions are based on 12 hours of startup time on a rolling 12-month basis.
(9) 100 percent of the PM_{10} may be $PM_{2.5}$

* Emission rates are based on and the facilities are limited by the following maximum operating schedule:

_____Hrs/day _____Days/week _____Weeks/year or __8,760__Hrs/year

** Compliance with annual emission limits is based on a calendar year basis for the first eight years after this permit was issued and a rolling 12-month basis thereafter.

Dated August 16, 2011 _