

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Permit Nos. 5682A and PSD-TX-103M2

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

SOUR CRUDE UNIT 25.1

25.1-0-0	Sour Crude Unit Fugitives (4)	VOC	3.07	13.46
		H ₂ S	0.001	0.004
25.1-36-1	Crude Charge Heater	NO _x (8)	93.40	409.09
		TSP/PM ₁₀ (8)	2.34	10.23
		VOC (8)	0.16	0.71
		CO	18.68	81.82
		SO ₂ (8)	15.25	66.81
54-22-14	Cooling Tower	VOC	3.36	14.72
56-61-17	Expansion HP Flare (Emergency Only)	NO _x	0.11	0.49
		CO	0.96	4.20
		SO ₂	0.07	0.33

DISTILLATE HYDRODESULFURIZATION UNIT 25.2

25.2-0-0	DHDS Unit Fugitives (4)	VOC	2.24	9.81
		H ₂ S	<0.01	0.03
		NH ₃	<0.01	<0.01
25.2-CS	DHDS Reactor Charge Heater	NO _x (8)	10.14	41.53

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			lb/hr	TPY
25.2-CS	DHDS Combo Tower Reboiler	TSP/PM ₁₀ (8)	0.87	3.60
		VOC (8)	0.07	0.31
		CO	2.17	8.91
		SO ₂ (8)	2.07	8.50
		NO _x (8)	11.39	41.53
		TSP/PM ₁₀ (8)	0.98	3.60
		VOC (8)	0.08	0.31
		CO	2.44	8.91
		SO ₂ (8)	2.33	8.50

ATMOSPHERIC RESIDUUM DESULFURIZATION UNIT 26.1

26-CS	Charge Heater 1	NO _x (8)	16.08	54.23
		TSP/PM ₁₀ (8)	0.67	2.26
		VOC (8)	0.05	0.16
		CO	5.36	18.08
		SO ₂ (8)	4.38	19.17
26-CS	Charge Heater 2	NO _x (8)	13.40	45.19
		TSP/PM ₁₀ (8)	0.67	2.26
		VOC (8)	0.05	0.16
		CO	5.36	18.08
		SO ₂ (8)	4.38	19.17
26-CS	Recycle Gas Heater 1	NO _x (8)	4.20	17.68
		TSP/PM ₁₀ (8)	0.59	2.47
		VOC (8)	0.05	0.21
		CO	2.56	10.78
		SO ₂ (8)	1.37	6.01
26-CS	Recycle Gas Heater 2	NO _x (8)	4.20	17.68
		TSP/PM ₁₀ (8)	0.59	2.47
		VOC (8)	0.05	0.21
		CO	2.56	10.78

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Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates *	
			lb/hr	TPY
		SO ₂ (8)	1.37	6.01
26.1-0-0	ARDS Fugitives (4)	VOC	6.07	26.57
		H ₂ S	0.03	0.13
		NH ₃	0.005	0.02

HEAVY OIL CRACKING UNIT 27

27.1-0-0	Heavy Oil Cracker Fugitives (4)	VOC	7.43	32.56
		H ₂ S	0.01	0.04
		Benzene	0.02	0.08
27.1-36-RE	HOC Regenerator Exhaust	NO _x (8)	111.75	489.47
		TSP/PM ₁₀ (8)	72.98	319.63
		VOC (8)	7.50	32.85
		CO	608.91	1282.49
		SO ₂ (8)	833.27	3649.74
		H ₂ SO ₄	26.44	115.80
27.2-0-0	HOC Gas Plant Fugitives (4)	VOC	0.94	4.12
		H ₂ S	0.001	0.005
56-61-16	Expansion LP Flare	NO _x	0.06	0.30
		VOC	0.61	2.70
		CO	0.12	0.50
		SO ₂	21.25	46.50
		R-SH	0.33	0.70

SULFUR RECOVERY COMPLEX UNITS 28

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AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates *	
			lb/hr	TPY
28.1-0-0	ARU/SWS Fugitives (4)	VOC	0.43	1.86
		H ₂ S	0.11	0.48
		NH ₃	0.02	0.11
28.1-61-9	DEA Stripper Flare (Emergency Only)	NO _x	0.03	0.13
		VOC	<0.01	<0.01
		CO	0.25	1.10
		SO ₂	0.85	3.74
		H ₂ S	<0.01	<0.01
28.1-61-10	Sour Water Stripper Flare (Emergency Only)	NO _x	0.03	0.13
		VOC	<0.01	<0.01
		CO	0.25	1.09
		SO ₂	0.40	1.76
		H ₂ S	<0.01	<0.01
28.2-0-0	SRU Fugitives (4)	VOC	0.64	2.78
		H ₂ S	0.11	0.50
		NH ₃	0.03	0.14
28.2-36-2	Incinerator Stack	NO _x (8)	7.45	32.62
		TSP/PM ₁₀ (7)(8)	2.50	6.95
		VOC (8)	0.23	1.00
		CO	20.20	88.47
		SO ₂ (8)	115.42	505.55
		H ₂ S	2.45	10.74
		H ₂ SO ₄	0.45	1.95
28.95-300	DEA Tank	VOC	<0.01	<0.01
28-95-302 and 28-95-305	Sour Water Surge Tanks	VOC	<0.01	0.02
		H ₂ S	0.53	2.32
		NH ₃	<0.01	0.01

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AIR CONTAMINANTS DATA

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	<u>Emission Rates *</u>	
			<u>lb/hr</u>	<u>TPY</u>
28.95-306	MDEA Tank	VOC	<0.01	<0.01
28-95-316	Sour Water Maintenance Tank	Maintenance Use Only		

VACUUM UNIT 29.1 (5)

29-61-1	Flare	NO _x	0.11	0.50
		CO	0.83	3.64
		SO ₂	0.06	0.25
29.1-0-0	Vacuum Fugitives (4)	VOC	1.31	5.72
		H ₂ S	0.02	0.07
29.1-36-001	Vacuum Unit Heater	NO _x	22.65	79.37
		TSP/PM ₁₀	1.13	3.97
		VOC	0.21	0.74
		CO	15.10	52.92
		SO ₂	7.65	26.79
54-22-20	Cooling Tower	VOC	1.60	6.99

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			lb/hr	TPY

DELAYED COKER UNIT 29.2 (5)

29.2-0-0	Coker Fugitives (4)	VOC	2.51	10.98
		H ₂ S	0.03	0.13
29.2-0-1	Coke Handling Fugitives (4)	TSP	3.73	3.17
		PM ₁₀	1.77	1.52
29.2-36-CS	Coker Heater A	NO _x	14.77	51.74
		TSP/PM ₁₀	0.74	2.59
		VOC	0.04	0.14
		CO	9.84	34.49
		SO ₂	5.85	20.49
29.2-36-CS	Coker Heater B	NO _x	14.77	51.74
		TSP/PM ₁₀	0.74	2.59
		VOC	0.04	0.14
		CO	9.84	34.49
		SO ₂	5.85	20.49

STORAGE TANKS

68-95-61	Storage Tank	VOC	1.35	3.59
68-95-62	Storage Tank	VOC	1.35	3.59
68-95-98	Cat. Gasoline Storage Tank	VOC	1.30	7.50

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68-95-99A (6)	Sweet Gas Oil Storage Tank	VOC	1.69	7.40
68-95-99B (6)	Sweet Gas Oil Storage Tank	VOC	1.69	7.40
68-95-99C (6)	Sour Gas Oil Storage Tank	VOC	1.70	7.43
68-95-213	Alkylate Storage Tank	VOC	3.36	10.46
68-95-418 (6)	Vacuum Resid Storage Tank	VOC	4.31	18.90
68-95-419 (6)	Sweet Gas Oil Storage Tank	VOC	3.20	14.03

(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
TSP - total suspended particles, not including PM₁₀.
PM - particulate matter, suspended in the atmosphere, including PM₁₀
PM₁₀ - particulate matter, equal to or less than 10 microns in diameter. Where PM is not listed, it shall be assumed that no particulate matter greater than 10 microns is emitted.
VOC - volatile organic compounds as defined in 30 Texas Administrative Code Section 101.1
CO - carbon monoxide
SO₂ - sulfur dioxide
H₂S - hydrogen sulfide
NH₃ - ammonia
H₂SO₄ - sulfuric acid mist

EMISSIONS FROM PROCESS MAXIMUM ALLOWABLE EMISSION RATES

AIR CONTAMINANTS DATA

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

Benzene - hazardous air pollutant

R-SH - mercaptan

- (4) Fugitive emissions are an estimate only and should not be considered as a maximum allowable emission rate.
- (5) New unit incorporated into Permit 5682A.
- (6) Heated for processing heavy liquids.
- (7) Test method shall be method 201/201A, excluding sulfates.
- (8) Emissions of NO_x, TSP/PM₁₀, VOC, and CO from the Crude Charge Heater (EPN 25.1-36-1), Distillate Hydrodesulfurization Unit Heaters (EPN 25.2-CS), Atmospheric Residuum Desulfurization Unit Charge Heaters and Recycle Heaters (EPN 26-CS), HOC Regenerator Exhaust (EPN 27.1-36-RE), and TGI (EPN 28.2-36-2) are covered under PSD-TX-103M2.

* 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

Dated _____