

Emission Sources - Maximum Allowable Emission Rates

Permit Numbers 22690 and PSDTX751M1

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, sources, and related activities. 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	
			lbs/hour	TPY (4)
CO Sources				
Ethylene Unit 22				
22-36-1	22 Furnace 1	CO		
22-36-2	22 Furnace 2	CO		
22-36-3	22 Furnace 3	CO		
22-36-4	22 Furnace 4	CO		
22-36-5	22 Furnace 5	CO		
22-36-6	22 Furnace 6	CO		
22-36-7	22 Furnace 7	CO		
22-36-8	22 Furnace 8	CO		
Ethylene Unit 24				
24-36-1	24 Furnace 1	CO		
24-36-2	24 Furnace 2	CO		
24-36-3	24 Furnace 3	CO		
24-36-4	24 Furnace 4	CO		
24-36-5	24 Furnace 5	CO		
24-36-6	24 Furnace 6	CO		
24-36-7	24 Steam Superheater 7	CO		
24-36-8	24 DAC Hydrotreater Heater 8	CO		
24-36-9	24 Furnace 9	CO		
Ethylene Unit 33				
33-36-1	33 Furnace 1	CO (6)		
33-36-2	33 Furnace 2	CO (6)		
33-36-3	33 Furnace 3	CO (6)		
33-36-4	33 Furnace 4	CO (6)		
33-36-5	33 Furnace 5	CO (6)		
33-36-6	33 Furnace 6	CO (6)		
33-36-7	33 Furnace 7	CO (6)		
33-36-8	33 Furnace 8	CO (6)		
33-36-9	33 Furnace 9	CO (6)		
Flare System				
56-61-10	Unit 21, 22 Low-Pressure Flare 10	CO		
56-61-12	Unit 22 High-Pressure Flare 12	CO		
56-61-14	Unit 24 High-Pressure Flare 14	CO		
56-61-20	Unit 24 Low-Pressure Flare 20	CO		
56-61-22	Unit 33 Process Flare 22	CO (6)		

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	CO Emission Cap for the EPNs Listed Above	CO	478.74	2058.44
Decoking Equipment MSS (9) 22-95-3, 22-95-3A, 22-95-3B, and 22-95-3C 24-95-300 33-95-376 and 33-95-376A	U22 Decoke U24 Decoke U33 Decoke	CO CO CO		
	CO Emission Cap for the EPNs Listed Above	CO	792.82	89.86
Flare System 56-61-4 56-61-8 56-61-9	Unit 10D/18 Process Flare 4 Unit 10, 12 Low-Pressure Flare 8 Unit 10, 12 High-Pressure Flare 9	CO CO CO		
	CO Emission Cap for the EPNs Listed Above	CO	63.13	40.89
Flare System MSS (9) 56-61-4 56-61-8 56-61-9 56-61-10 56-61-12 56-61-14 56-61-20 56-61-22	Unit 10D/18 Process Flare 4 Unit 10, 12 Low-Pressure Flare 8 Unit 10, 12 High-Pressure Flare 9 Unit 21, 22 Low-Pressure Flare 10 Unit 22 High-Pressure Flare 12 Unit 24 High-Pressure Flare 14 Unit 24 Low-Pressure Flare 20 Unit 33 Process Flare 22	CO CO CO CO CO CO CO CO		
	Emission Cap for the EPNs Listed Above	CO	7505.60	137.12
H₂S Sources				
Flare System 56-61-4 56-61-8 56-61-9 56-61-10 56-61-12 56-61-14 56-61-20 56-61-22	Unit 10D/18 Process Flare 4 Unit 10, 12 Low-Pressure Flare 8 Unit 10, 12 High-Pressure Flare 9 Unit 21, 22 Low-Pressure Flare 10 Unit 22 High-Pressure Flare 12 Unit 24 High-Pressure Flare 14 Unit 24 Low-Pressure Flare 20 Unit 33 Process Flare 22	H ₂ S H ₂ S H ₂ S H ₂ S H ₂ S H ₂ S H ₂ S H ₂ S		
	Emission Cap for the EPNs Listed Above	H₂S	0.06	0.26

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NO_x Sources				
Ethylene Unit 22				
22-36-1	22 Furnace 1	NO _x		
22-36-2	22 Furnace 2	NO _x		
22-36-3	22 Furnace 3	NO _x		
22-36-4	22 Furnace 4	NO _x		
22-36-5	22 Furnace 5	NO _x		
22-36-6	22 Furnace 6	NO _x		
22-36-7	22 Furnace 7	NO _x		
22-36-8	22 Furnace 8	NO _x		
22-95-27	Propylene Compressor Turbine	NO _x		
Ethylene Unit 24				
24-36-1	24 Furnace 1	NO _x		
24-36-2	24 Furnace 2	NO _x		
24-36-3	24 Furnace 3	NO _x		
24-36-4	24 Furnace 4	NO _x		
24-36-5	24 Furnace 5	NO _x		
24-36-6	24 Furnace 6	NO _x		
24-36-7	24 Steam Superheater 7	NO _x		
24-36-8	24 DAC Hydrotreater Heater 8	NO _x		
24-36-9	24 Furnace 9	NO _x		
Ethylene Unit 33				
33-36-1	33 Furnace 1	NO _x (6)		
33-36-2	33 Furnace 2	NO _x (6)		
33-36-3	33 Furnace 3	NO _x (6)		
33-36-4	33 Furnace 4	NO _x (6)		
33-36-5	33 Furnace 5	NO _x (6)		
33-36-6	33 Furnace 6	NO _x (6)		
33-36-7	33 Furnace 7	NO _x (6)		
33-36-8	33 Furnace 8	NO _x (6)		
33-36-9	33 Furnace 9	NO _x (6)		
Flare System				
56-61-10	Unit 21, 22 Low-Pressure Flare 10	NO _x		
56-61-12	Unit 22 High-Pressure Flare 12	NO _x		
56-61-14	Unit 24 High-Pressure Flare 14	NO _x		
56-61-20	Unit 24 Low-Pressure Flare 20	NO _x		
56-61-22	Unit 33 Process Flare 22	NO _x (6)		
	Emission Cap for the EPNs Listed Above	NO_x	436.25	1896.24
Flare System				
56-61-4	Unit 10D/18 Process Flare 4	NO _x		
56-61-8	Unit 10, 12 Low-Pressure Flare 8	NO _x		
56-61-9	Unit 10, 12 High-Pressure Flare 9	NO _x		
	NO_x Emission Cap for the EPNs Listed Above	NO_x	12.39	8.00

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Flare System MSS (9) 56-61-4 56-61-8 56-61-9 56-61-10 56-61-12 56-61-14 56-61-20 56-61-22	Unit 10D/18 Process Flare 4 Unit 10, 12 Low-Pressure Flare 8 Unit 10, 12 High-Pressure Flare 9 Unit 21, 22 Low-Pressure Flare 10 Unit 22 High-Pressure Flare 12 Unit 24 High-Pressure Flare 14 Unit 24 Low-Pressure Flare 20 Unit 33 Process Flare 22	NO _x NO _x NO _x NO _x NO _x NO _x NO _x NO _x		
	Emission Cap for the EPNs Listed Above	NO_x	1513.37	28.82
PM/PM₁₀ Sources				
Cooling Towers 54-22-5 54-22-6 54-22-7 54-22-9 54-22-12 54-22-13 54-22-17	Unit 12 Cooling Tower (CT-5) Unit 10ABC Cooling Tower (CT-6) Unit 10ABC Cooling Tower (CT-7) Unit 10D/18 Cooling Tower (CT-9) Unit 21/22 Cooling Tower (CT-12) Unit 24 Cooling Tower (CT-13) Unit 33 Cooling Tower (CT-17)	PM PM PM PM PM PM PM		
	Emission Cap for the EPNs Listed Above	PM	27.16	118.97
Ethylene Unit 22 22-36-1 22-36-2 22-36-3 22-36-4 22-36-5 22-36-6 22-36-7 22-36-8	22 Furnace 1 22 Furnace 2 22 Furnace 3 22 Furnace 4 22 Furnace 5 22 Furnace 6 22 Furnace 7 22 Furnace 8	PM ₁₀ PM ₁₀ PM ₁₀ PM ₁₀ PM ₁₀ PM ₁₀ PM ₁₀ PM ₁₀		
Ethylene Unit 24 24-36-1 24-36-2 24-36-3 24-36-4 24-36-5 24-36-6 24-36-7 24-36-8 24-36-9	24 Furnace 1 24 Furnace 2 24 Furnace 3 24 Furnace 4 24 Furnace 5 24 Furnace 6 24 Steam Superheater 7 24 DAC Hydrotreater Heater 8 24 Furnace 9	PM ₁₀ PM ₁₀ PM ₁₀ PM ₁₀ PM ₁₀ PM ₁₀ PM ₁₀ PM ₁₀ PM ₁₀		
Ethylene Unit 33 33-36-1 33-36-2	33 Furnace 1 33 Furnace 2	PM ₁₀ (6) PM ₁₀ (6)		

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33-36-3	33 Furnace 3	PM ₁₀ (6)		
33-36-4	33 Furnace 4	PM ₁₀ (6)		
33-36-5	33 Furnace 5	PM ₁₀ (6)		
33-36-6	33 Furnace 6	PM ₁₀ (6)		
33-36-7	33 Furnace 7	PM ₁₀ (6)		
33-36-8	33 Furnace 8	PM ₁₀ (6)		
33-36-9	33 Furnace 9	PM ₁₀ (6)		
	Emission Cap for the EPNs Listed Above	PM₁₀	41.44	181.52
MSS (9) 22-95-3, 22-95-3A, 22-95-3B, and 22- 95-3C 24-95-300 33-95-376 and 33-95-376A CPC-ABLAST CPC-PAINT Catalyst	U22 Decoke U24 Decoke U33 Decoke Abrasive Blasting Painting Catalyst Handling	PM PM PM PM PM PM		
	Emission Cap for the EPNs Listed Above	PM	621.98	67.66

SO₂ Sources

Ethylene Unit 22				
22-36-1	22 Furnace 1	SO ₂		
22-36-2	22 Furnace 2	SO ₂		
22-36-3	22 Furnace 3	SO ₂		
22-36-4	22 Furnace 4	SO ₂		
22-36-5	22 Furnace 5	SO ₂		
22-36-6	22 Furnace 6	SO ₂		
22-36-7	22 Furnace 7	SO ₂		
22-36-8	22 Furnace 8	SO ₂		
Ethylene Unit 24				
24-36-1	24 Furnace 1	SO ₂		
24-36-2	24 Furnace 2	SO ₂		
24-36-3	24 Furnace 3	SO ₂		
24-36-4	24 Furnace 4	SO ₂		
24-36-5	24 Furnace 5	SO ₂		

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24-36-6	24 Furnace 6	SO ₂		
24-36-7	24 Steam Superheater 7	SO ₂		
24-36-8	24 DAC Hydrotreater Heater 8	SO ₂		
24-36-9	24 Furnace 9	SO ₂		
Ethylene Unit 33				
33-36-1	33 Furnace 1	SO ₂ (6)		
33-36-2	33 Furnace 2	SO ₂ (6)		
33-36-3	33 Furnace 3	SO ₂ (6)		
33-36-4	33 Furnace 4	SO ₂ (6)		
33-36-5	33 Furnace 5	SO ₂ (6)		
33-36-6	33 Furnace 6	SO ₂ (6)		
33-36-7	33 Furnace 7	SO ₂ (6)		
33-36-8	33 Furnace 8	SO ₂ (6)		
33-36-9	33 Furnace 9	SO ₂ (6)		
	Emission Cap for the EPNs Listed Above	SO₂	223.95	374.53
Flare System				
56-61-4	Unit 10D/18 Process Flare 4	SO ₂		
56-61-8	Unit 10, 12 Low-Pressure Flare 8	SO ₂		
56-61-9	Unit 10, 12 High-Pressure Flare 9	SO ₂		
56-61-10	Unit 21, 22 Low-Pressure Flare 10	SO ₂		
56-61-12	Unit 22 High-Pressure Flare 12	SO ₂		
56-61-14	Unit 24 High-Pressure Flare 14	SO ₂		
56-61-20	Unit 24 Low-Pressure Flare 20	SO ₂		
56-61-22	Unit 33 Process Flare 22	SO ₂ (6)		
	Emission Cap for the EPNs Above	SO₂	18.05	24.72
VOC Sources				
Ethylene Unit 22				
22-36-1	22 Furnace 1	VOC		
22-36-2	22 Furnace 2	VOC		
22-36-3	22 Furnace 3	VOC		
22-36-4	22 Furnace 4	VOC		
22-36-5	22 Furnace 5	VOC		
22-36-6	22 Furnace 6	VOC		
22-36-7	22 Furnace 7	VOC		
22-36-8	22 Furnace 8	VOC		
Ethylene Unit 24				
24-36-1	24 Furnace 1	VOC		
24-36-2	24 Furnace 2	VOC		
24-36-3	24 Furnace 3	VOC		
24-36-4	24 Furnace 4	VOC		
24-36-5	24 Furnace 5	VOC		
24-36-6	24 Furnace 6	VOC		
24-36-7	24 Steam Superheater 7	VOC		
	24 DAC Hydrotreater Heater 8			

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24-36-8		VOC		
24-36-9		VOC		
Ethylene Unit 33				
33-36-1	33 Furnace 1	VOC		
33-36-2	33 Furnace 2	VOC		
33-36-3	33 Furnace 3	VOC		
33-36-4	33 Furnace 4	VOC		
33-36-5	33 Furnace 5	VOC		
33-36-6	33 Furnace 6	VOC		
33-36-7	33 Furnace 7	VOC		
33-36-8	33 Furnace 8	VOC		
33-36-9	33 Furnace 9	VOC		
Process Fugitive Equipment				
10.1-0-0	Unit 10AC Process Fugitives (8)	VOC		
10.2-0-0	Unit 10D Process Fugitives (8)	VOC		
10.3-0-0	Unit 10B Process Fugitives (8)	VOC		
12-0-0	Unit 12 Process Fugitives (8)	VOC		
18-0-0	Unit 18 Process Fugitives (8)	VOC		
21-0-0	Unit 21 Process Fugitives (8)	VOC		
24.1-0-0	Unit 24.1 Process Fugitives (8)	VOC		
22-0-0	Unit 22 Process Fugitives (8)	VOC		
24-0-0	Unit 24 Process Fugitives (8)	VOC		
33-0-0	Unit 33 Process Fugitives (8)	VOC		
Cooling Towers				
54-22-5	Unit 12 Cooling Tower (CT-5)	VOC		
54-22-6	Unit 10ABC Cooling Tower (CT-6)	VOC		
54-22-7	Unit 10ABC Cooling Tower (CT-7)	VOC		
54-22-9	Unit 10D/18 Cooling Tower (CT-9)	VOC		
54-22-12	Unit 21/22 Cooling Tower (CT-12)	VOC		
54-22-13	Unit 24 Cooling Tower (CT-13)	VOC		
54-22-17	Unit 33 Cooling Tower (CT-17)	VOC		
Fixed-Roof Storage Tanks				
24-95-314	Methanol Storage Tank	VOC		
33-95-10	Methanol Storage Tank	VOC		
33-95-14	TBC Storage Tank	VOC		
Lube/Seal Reservoirs				
D-328 Seal Oil Reservoir		VOC		
10-95-328	D-357 Lube/Seal Oil Reservoir	VOC		
10-95-357	D-54 Lube/Seal Oil Reservoir	VOC		
18-95-54	D-120 Lube/Seal Oil Reservoir	VOC		
21-95-120	D-100 Lube Oil Reservoir	VOC		
22-95-100	D-101 Seal Oil Reservoir	VOC		
22-95-101	D-120 Lube/Seal Oil Reservoir	VOC		
22-95-120	D-130 Lube/Seal Oil Reservoir	VOC		
	D-304 Lube/Seal Oil Reservoir	VOC		

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22-95-130	D-305 Lube/Seal Oil Reservoir	VOC		
24-95-304	D-306 Lube/Seal Oil Reservoir	VOC		
24-95-305	Expander Lube Oil Reservoir	VOC		
24-95-306	C-101 (Cracked Gas)	VOC		
24-95-307	C-102 (Ethylene)	VOC		
33-95-15	C-103 (Propylene)	VOC		
33-95-17	C-101 (Cracked Gas)	VOC		
33-95-19	C-102 (Ethylene)	VOC		
33-95-390	C-103 (Propylene)	VOC		
33-95-392	C-357 (Propylene)- 2nd vent	VOC		
33-95-394	C-357 (Propylene)- degas chamber	VOC		
10-95-3572	C-100 (Cracked Gas)	VOC		
10-95-357A	C-101 (Ethylene)	VOC		
24-95-319	C-102 (Propylene)	VOC		
24-95-320				
24-95-321				

Sumps				
10.1-SUMP1	10.1 Oily Water Sewer Sump	VOC		
12-SUMP1	12 Oily Water Sewer Sump	VOC		
21/22-SUMP1	21/22 Oily Water Sewer Sump	VOC		
24-SUMP2	24 Ethylene Sodium Hydroxide Sump	VOC		
24-SUMP3	24 Oily Water Sewer Sump	VOC		
33-SUMP1	33 Sodium Hydroxide Sump	VOC		
33-SUMP2	33 Water Sludge Pit	VOC		
33-SUMP3	33 Oily Water Sewer Sump	VOC		
33-SUMP4	33 Blowdown Drum Sump	VOC		
Flare System				
56-61-4	Unit 10D/18 Process Flare 4	VOC		
56-61-8	Unit 10, 12 Low-Pressure Flare 8	VOC		
56-61-9	Unit 10, 12 High-Pressure Flare 9	VOC		
56-61-10	Unit 21, 22 Low-Pressure Flare 10	VOC		
56-61-12	Unit 22 High-Pressure Flare 12	VOC		
56-61-14	Unit 24 High-Pressure Flare 14	VOC		
56-61-20	Unit 24 Low-Pressure Flare 20	VOC		
56-61-22	Unit 33 Process Flare 22	VOC		
Atmospheric Vents				
10ABC-AV	Unit 10ABC Analyzer Vents	VOC		
10D-AV	Unit 10D Analyzer Vents	VOC		
12-AV	Unit 12 Analyzer Vents	VOC		
18-AV	Unit 18 Analyzer Vents	VOC		
21-AV	Unit 21 Analyzer Vents	VOC		
22-AV	Unit 22 Analyzer Vents	VOC		
24-AV	Unit 24 Analyzer Vents	VOC		
33-AV	Unit 33 Analyzer Vents	VOC		

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	Emission Cap for the EPNs Listed Above	VOC	127.95	494.24
MSS (9) 56-61-4 56-61-8 56-61-9 56-61-10 56-61-12 56-61-14 56-61-20 56-61-22 CPC-Paint MSSATM	Unit 10D/18 Process Flare 4 Unit 10, 12 Low-Pressure Flare 8 Unit 10, 12 High-Pressure Flare 9 Unit 21, 22 Low-Pressure Flare 10 Unit 22 High-Pressure Flare 12 Unit 24 High-Pressure Flare 14 Unit 24 Low-Pressure Flare 20 Unit 33 Process Flare 22 Painting Atmospheric Venting/Purging (See Attachment B for a list of activities)	VOC VOC VOC VOC VOC VOC VOC VOC VOC VOC		
	Emission Cap for the EPNs Above	VOC	5247.80	124.41
Benzene Sources (5)				
Process Fugitive Equipment 10.1-0-0 10.2-0-0 10.3-0-0 12-0-0 21-0-0 24.1-0-0 22-0-0 24-0-0 33-0-0	Unit 10AC Process Fugitives (8) Unit 10D Process Fugitives (8) Unit 10B Process Fugitives (8) Unit 12 Process Fugitives (8) Unit 21 Process Fugitives (8) Unit 24.1 Process Fugitives (8) Unit 22 Process Fugitives (8) Unit 24 Process Fugitives (8) Unit 33 Process Fugitives (8)	Benzene Benzene Benzene Benzene Benzene Benzene Benzene Benzene Benzene		
	Emission Cap for the EPNs Listed Above	Benzene	1.74	7.60
MSS (9) 56-61-4 56-61-8 56-61-9 56-61-10 56-61-12 56-61-14 56-61-20 56-61-22 MSSATM	Unit 10D/18 Process Flare 4 Unit 10, 12 Low-Pressure Flare 8 Unit 10, 12 High-Pressure Flare 9 Unit 21, 22 Low-Pressure Flare 10 Unit 22 High-Pressure Flare 12 Unit 24 High-Pressure Flare 14 Unit 24 Low-Pressure Flare 20 Unit 33 Process Flare 22 Atmospheric Venting/Purging (See Attachment B for a list of activities)	Benzene Benzene Benzene Benzene Benzene Benzene Benzene Benzene Benzene Benzene		
	Emission Cap for the EPNs Listed Above	Benzene	176.72	2.88

Emission Sources - Maximum Allowable Emission Rates

Individual Emission Rate Limits				
22-95-27	Propylene Compressor Turbine	CO	12.05	52.77
		PM ₁₀	0.84	3.70
		SO ₂	0.44	1.91
		VOC	1.41	6.17
Permits by Rule (PBRs) Incorporated by Reference (7)				
33-AIRCOMP2	Unit 33 Diesel Engine (Reg. 75479)	VOC	0.06	0.05
		NO _x	3.63	2.96
		CO	2.98	2.43
		SO ₂	0.92	0.75
		PM ₁₀	0.08	0.07
24-AIRCOMP	Unit 24 Diesel Engine (Reg. 86119)	VOC	0.05	0.12
		NO _x	2.08	4.99
		CO	2.44	5.85
		SO ₂	0.76	1.82
		PM ₁₀	0.07	0.17
24-AIRCOMP2	Unit 24 Diesel Engine (Reg. 86119)	VOC	0.14	0.09
		NO _x	7.37	4.99
		CO	2.88	1.95
		SO ₂	0.89	0.60
		PM ₁₀	0.05	0.03

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) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
H₂S - hydrogen sulfide
NO_x - total oxides of nitrogen
SO₂ - sulfur dioxide
PM - total particulate matter, suspended in the atmosphere, including PM₁₀ and PM_{2.5}, as represented
PM₁₀ - total particulate matter equal to or less than 10 microns in diameter, including PM_{2.5}, as represented
PM_{2.5} - particulate matter equal to or less than 2.5 microns in diameter
CO - carbon monoxide
- (4) Compliance with annual emission limits (tons per year) is based on a 12-month rolling period.
- (5) Benzene from other facilities is included in the VOC cap and does not contribute to the benzene emission cap.
- (6) This pollutant is also covered by Permit No. PSDTX751M1.
- (7) Referenced permits by rule are listed for information only. The required controls and monitoring are specified in the registrations (numbers listed with each emissions point) and rules.
- (8) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.
- (9) Applies to maintenance, startup, and shutdown (MSS).

Date: _____