

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Permit Number 3295

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)	<u>Emission Rates *</u>	
			lb/hr	TPY**
B-1	Boiler	CO	0.58	2.52
		NO _x	0.69	3.00
		PM ₁₀	0.05	0.23
		SO ₂	0.19	0.81
		VOC	0.04	0.17
DR-1	Drum Filling	VOC	16.86	2.77
F-1	Aromax Reactor Preheater	CO	0.48	2.10
		NO _x	0.57	2.50
		PM ₁₀	0.04	0.19
		SO ₂	0.16	0.68
		VOC	0.03	0.14
F-2	Aromax Reactor Preheater	CO	0.48	2.10
		NO _x	0.57	2.50
		PM ₁₀	0.04	0.19
		SO ₂	0.16	0.68
		VOC	0.03	0.14
F-3	Aromax F-3	CO	0.21	0.90
		NO _x	0.25	1.10
		PM ₁₀	0.02	0.08
		SO ₂	0.07	0.29
		VOC	0.01	0.06
F-4	Aromax F-4	CO	0.21	0.90
		NO _x	0.25	1.10
		PM ₁₀	0.02	0.08
		SO ₂	0.07	0.29

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		VOC	0.01	0.06
F-10	Flare	CO	14.36	8.47
		NO _x	2.05	1.42
		SO ₂	0.01	0.01
		VOC	39.91	12.88
MAINFUG	Main Plant Truck Loading Fugitives (4)	VOC	76.60	18.11
H-1	HDS Preheater	CO	0.77	3.36
		NO _x	0.91	4.00
		PM ₁₀	0.07	0.30
		SO ₂	0.25	1.08
		VOC	0.05	0.22
H-2	Hex Treater Preheater	CO	0.14	0.63
		NO _x	0.17	0.74
		PM ₁₀	0.01	0.06
		SO ₂	0.05	0.02
		VOC	0.01	0.04
H-3	Hot Oil Heater	CO	0.98	4.29
		NO _x	1.17	5.10
		PM ₁₀	0.09	0.39
		SO ₂	0.32	1.38
		VOC	0.06	0.28
H-101	T-15 Reboiler	CO	1.38	6.05
		NO _x	1.64	7.20
		PM ₁₀	0.13	0.55
		SO ₂	0.45	1.95
		VOC	0.09	0.40
H-102	T-16 Reboiler	CO	1.15	5.05
		NO _x	1.40	6.03
		PM ₁₀	0.10	0.46
		SO ₂	0.37	1.62
		VOC	0.08	0.33
H-103	Hot Oil Heater	CO	0.86	3.78
		NO _x	4.50	4.50

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		PM ₁₀	0.34	0.34
		SO ₂	1.22	1.22
		VOC	0.25	0.25
H-104	T-4 Reboiler	CO	0.38	1.68
		NO _x	0.46	2.00
		PM ₁₀	0.03	0.15
		SO ₂	0.12	0.54
		VOC	0.03	0.11
H-105	T-17 Reboiler	CO	0.05	0.22
		NO _x	0.06	0.27
		PM ₁₀	0.01	0.02
		SO ₂	0.02	0.08
		VOC	0.01	0.02
H-106	T-8 Reboiler	CO	0.26	1.13
		NO _x	0.31	1.34
		PM ₁₀	0.02	0.10
		SO ₂	0.07	0.33
		VOC	0.02	0.07
H-107	T-9 Reboiler	CO	0.19	0.84
		NO _x	0.13	1.00
		PM ₁₀	0.02	0.08
		SO ₂	0.06	0.27
		VOC	0.01	0.06
H-108	T-3 Reboiler/ T-27 Reboiler	CO	0.16	0.72
		NO _x	0.20	0.88
		PM ₁₀	0.01	0.07
		SO ₂	0.05	0.23
		VOC	0.01	0.05
H-109	Sieve Regeneration Heater	CO	0.05	0.22
		NO _x	0.06	0.27
		PM ₁₀	0.01	0.02
		SO ₂	0.02	0.08
		VOC	0.01	0.02

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H-110	T-1 Reboiler	CO	0.13	0.56
		NO _x	0.15	0.67
		PM ₁₀	0.01	0.05
		SO ₂	0.04	0.16
		VOC	0.01	0.04
H-111	T-11 Reboiler	CO	0.13	0.56
		NO _x	0.15	0.67
		PM ₁₀	0.01	0.05
		SO ₂	0.04	0.16
		VOC	0.01	0.04
H-113	AA HDS Preheater	CO	0.77	3.36
		NO _x	0.91	4.00
		PM ₁₀	0.07	0.30
		SO ₂	0.25	1.08
		VOC	0.05	0.22
H-116	T-13 Reboiler	CO	0.38	1.68
		NO _x	0.46	2.00
		PM ₁₀	0.03	0.15
		SO ₂	0.12	0.54
		VOC	0.03	0.11
H-117	AA Hydrogenation Preheater	CO	0.38	1.68
		NO _x	0.46	2.00
		PM ₁₀	0.03	0.15
		SO ₂	0.12	0.54
		VOC	0.03	0.11
H-118	T-30 Reboiler	CO	1.28	5.52
		NO _x	2.29	9.00
		PM ₁₀	0.12	0.51
		SO ₂	0.41	1.81
		VOC	0.08	0.37
H-213	T-21 Reboiler	CO	0.77	3.37
		NO _x	0.46	2.00
		PM ₁₀	0.07	0.30
		SO ₂	0.25	1.09

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		VOC	0.05	0.22
H-243	T-24 Reboiler	CO	1.03	4.51
		NO _x	0.61	2.68
		PM ₁₀	0.09	0.41
		SO ₂	0.34	1.09
		VOC	0.07	0.30
H-253	T-25 Reboiler	CO	0.38	1.68
		NO _x	0.46	2.00
		PM ₁₀	0.03	0.15
		SO ₂	0.12	0.54
		VOC	0.03	0.11
H-263	T-26 Reboiler	CO	0.77	3.37
		NO _x	0.46	2.00
		PM ₁₀	0.07	0.30
		SO ₂	0.25	1.09
		VOC	0.05	0.22
H-283	T-28 Reboiler	CO	0.82	3.57
		NO _x	0.49	2.13
		PM ₁₀	0.07	0.32
		SO ₂	0.26	1.15
		VOC	0.05	0.22
H-293	T-29 Reboiler	CO	0.66	2.89
		NO _x	0.79	3.44
		PM ₁₀	0.06	0.26
		SO ₂	0.21	0.93
		VOC	0.04	0.19
H-323	T-32 Reboiler	CO	0.74	3.25
		NO _x	0.88	3.86
		PM ₁₀	0.07	0.29
		SO ₂	0.24	1.05
		VOC	0.05	0.21
H-343	T-34 Reboiler	CO	0.58	2.52
		NO _x	0.07	3.07

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		PM ₁₀	0.05	0.23
		SO ₂	0.18	0.81
		VOC	0.04	0.17
H-353	T-35 Reboiler	CO	1.32	5.77
		NO _x	1.60	7.01
		PM ₁₀	0.12	0.52
		SO ₂	0.42	1.85
		VOC	0.09	0.38
H-383	T-38 Reboiler	CO	0.82	3.61
		NO _x	1.00	4.38
		PM ₁₀	0.07	0.33
		SO ₂	0.26	1.16
		VOC	0.05	0.24
H-403	T-40 Reboiler	CO	2.22	9.74
		NO _x	2.70	11.83
		PM ₁₀	0.20	0.88
		SO ₂	0.71	3.12
		VOC	0.15	0.64
H-423	T-42 Reboiler	CO	0.45	1.98
		NO _x	0.55	2.41
		PM ₁₀	0.04	0.18
		SO ₂	0.15	0.64
		VOC	0.03	0.13
H-433	T-43 Reboiler	CO	0.91	3.97
		NO _x	1.10	4.82
		PM ₁₀	0.08	0.36
		SO ₂	0.29	1.27
		VOC	0.06	0.26
H-700	HDS Heater	CO	1.73	7.57
		NO _x	2.10	9.20
		PM ₁₀	0.16	0.69
		SO ₂	0.55	2.43
		VOC	0.11	0.50

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RH-1	Reformer Reactor Preheater	CO	1.65	7.21
		NO _x	2.00	8.76
		PM ₁₀	0.15	0.65
		SO ₂	0.53	2.31
		VOC	0.11	0.47
RH-2	Reformer Reactor Preheater	CO	0.82	3.61
		NO _x	1.00	4.38
		PM ₁₀	0.07	0.33
		SO ₂	0.26	1.16
		VOC	0.05	0.24
RH-3	Reformer Reactor Preheater	CO	0.66	2.89
		NO _x	0.80	3.50
		PM ₁₀	0.06	0.26
		SO ₂	0.21	0.92
		VOC	0.04	0.19
TK-1	Tank 1	VOC	0.28	1.22
TK-2	Tank 2	VOC	1.40	1.00
TK-4	Tank 4	VOC	0.66	2.89
TK-8	Tank 8	NaOH	0.11	0.02
TK-9	Tank 9	NaHS	0.06	0.02
TK-11	Tank 11	VOC	0.69	0.41
TK-12	Tank 12	VOC	0.69	0.41
TK-13	Tank 13	VOC	0.69	0.41
TK-14	Tank 14	VOC	0.69	0.41
TK-40	Tank 40	VOC	0.36	0.19
TK-41	Tank 41	VOC	0.36	0.21
TK-48	Tank 48	VOC	0.42	1.83

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TK-52	Tank 52	VOC	5.02	3.00
TK-55	Tank 55	VOC	1.70	2.00
TK-56	Tank 56	VOC	1.20	2.20
TK-57	Tank 57	VOC	1.13	4.69
TK-61	Tank 61	VOC	1.15	4.76
TK-62	Tank 62	VOC	1.01	1.40
TK-63	Tank 63	VOC	0.65	0.94
TK-64	Tank 64	VOC	1.11	1.00
TK-65	Tank 65	VOC	0.12	0.53
TK-66	Tank 66	VOC	0.91	3.98
TK-67	Tank 67	NaOH	0.01	0.01
TK-68	Tank 67	NaHS	0.01	0.01
WESTFUG	West Plant Truck Loading Losses	VOC	0.19	0.07
FUG	Process Fugitives (4)	VOC	4.30	18.83

- (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
 - SO₂ - sulfur dioxide
 - PM₁₀ - particulate matter equal to or less than 10 microns in diameter
 - CO - carbon monoxide
 - NaHS - sodium hydrosulfide
 - NaOH - sodium hydroxide
- (4) Fugitive emissions are an estimate only and should not be considered as a maximum allowable emission rate.

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

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

24 Hrs/day 7 Days/week 52 Weeks/year or 8,760 Hrs/year

- ** Compliance with annual emission limits is based on a rolling 12-month period.

Dated July 5, 2010