Emission Sources - Maximum Allowable Emission Rates

Permit Number 865A and PSDTX1016M1

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)
ColumnMain	Acrolein Unit Column/Filter	VOC	0.01	0.01
D307	Methanol Tank	VOC	2.32	0.22
	Methanol Tank (MSS)	VOC (10)	3.08	1.86
D2307	Methanol Tank	VOC	2.32	0.22
	Methanol Tank (MSS)	VOC (10)	3.08	1.86
D398	Gasoline Tank	VOC	4.56	0.22
D215	Diesel Tank	VOC	0.02	0.01
D399	Diesel Tank	VOC	0.02	0.01
D3191A	Diesel Tank	VOC	0.02	0.01
D3191B	Diesel Tank	VOC	0.02	0.01
D8540	Caustic Tank	NaOH	0.01	0.01
FLARE	Flare Interim Limits (9)(11)	CO (8)	629.45	81.93
		H2S	13.42	7.41
		H2S (13)	67.74	
		H2SO4	61.08	32.29
		NOx (8)	73.40	9.56
		SO2 (8)	3576.03	562.89
		SO2 (8) (13)	8779.58	
		TRS	54.26	15.11
		TRS (13)	188.71	
		VOC	41.26	9.04
		VOC (13)	124.31	

Emission Sources - Maximum Allowable Emission Rates

FLARE	Flare Final Limits both routine and MSS operation (9)(12)	CO (8)	193.54	74.35
		H2S	24.08	2.82
		H2SO4	7.21	31.57
		H2SO4 (14)	29.18	
		NOx (8)	22.56	8.67
		SO2 (8)	625.00	448.96
		SO2 (8) (14)	3065.51	
		TRS	37.52	8.84
		TRS (14)	92.52	
		VOC	49.38	6.63
		VOC (14)	70.32	
H202	Heat Transfer Fluid Heater (31 MMBtu/hr)	CO	2.59	11.32
		NOx	3.08	13.48
		PM	0.23	1.02
		PM10	0.23	1.02
		PM2.5	0.23	1.02
		SO2	0.02	0.08
		VOC	0.17	0.74
H401/H402	Sulfur Heater 401 & Methane Heater 402 (7)	CO	1.32	5.77
		NOx	1.61	7.04
		PM	0.11	0.52
		PM10	0.11	0.52
		PM2.5	0.11	0.52
		SO2	0.01	0.05
		VOC	0.09	0.38

Emission Sources - Maximum Allowable Emission Rates

H501/H502	Sulfur Heater 501 & Methane Heater 502 (7)	CO	1.32	5.77
		NOx	1.61	7.04
		PM	0.11	0.52
		PM10	0.11	0.52
		PM2.5	0.11	0.52
		SO2	0.01	0.05
		VOC	0.09	0.38
H2202	Heat Transfer Fluid Heater (31 MMBtu/hr)	CO	2.59	11.32
		NOx	3.08	13.48
		PM	0.23	1.02
		PM10	0.23	1.02
		PM2.5	0.23	1.02
		SO2	0.02	0.08
		VOC	0.17	0.74
INCIN	Incinerator	CO	2.03	8.90
		H2S	0.10	0.42
		NOx	1.57	6.87
		PM	0.89	3.90
		PM10	0.89	3.90
		PM2.5	0.89	3.90
		SO2	139.00	78.00
		VOC	0.37	1.48
		TRS	0.36	1.43
S-1	Sulfur Storage Tank	H2S	0.015	0.012
		SO2	0.055	0.044

Emission Sources - Maximum Allowable Emission Rates

		TRS	0.015	0.012
S-2	Sulfur Pit	H2S	0.015	0.012
		SO2	0.055	0.047
		TRS	0.015	0.012
S-3	Sulfur Truck	H2S	0.017	0.017
		SO2	0.064	0.064
		TRS	0.017	0.017
SULFOX-CT	Sulfox Cooling Tower	PM	0.04	0.18
		PM10	0.04	0.18
		PM2.5	0.04	0.18
		VOC	0.43	1.89
SULFOX-INH	Bagfilter	PM	0.08	0.01
		PM10	0.08	0.01
		PM2.5	0.08	0.01
SULFOX-TO	Thermal Oxidizer	CO (8)	32.70	70.52
		NOx (8)	16.16	70.66
		PM	5.71	25.01
		PM10	5.71	25.01
		PM2.5	5.71	25.01
		SO2 (8)	23.66	13.93
		SO2 (8)(10)	100.00	
		TRS	0.02	0.01
		VOC	6.66	15.26
WWTP	Wastewater Treatment Plant	H2S	0.05	0.20
		VOC	0.12	0.50

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X-426A	Steam Boiler (15.8 MMBtu/hr)	CO	1.33	5.81
		NOx	2.05	9.00
		PM	0.12	0.53
		PM10	0.12	0.53
		PM2.5	0.12	0.53
		SO2	0.01	0.04
		VOC	0.09	0.38
X-426B	Steam Boiler (15.8 MMBtu/hr)	CO	1.33	5.81
		NOx	2.05	9.00
		PM	0.12	0.53
		PM10	0.12	0.53
		PM2.5	0.12	0.53
		SO2	0.01	0.04
		VOC	0.09	0.38
ACRO-Fug	Acrolein Process Fugitives (5)	VOC	0.19	0.85
ACRO-TksFug	Acrolein Storage Tanks Fugitives (5)	VOC	0.01	0.05
ACRO-WWFug	Acrolein Wastewater Fugitives (5)	VOC	0.01	0.01
BMT-1E/T	Train 1 - EtSH or TBM Production Fugitives (5) (6)	H2S	0.03	0.13
		TRS	0.01	0.01
		VOC	1.24	0.16
BMT-1M	Train 1 - MeSH Production Fugitives (5) (6)	H2S	0.03	0.13
		TRS	0.02	0.07
		VOC	0.99	0.28
BMT-2M	Train 2 - MeSH Production Fugitives (5)	H2S	0.01	0.05
		TRS	0.02	0.09
		VOC	0.08	0.33

Emission Sources - Maximum Allowable Emission Rates

DMDS	Dimethyl Disulfide Area Process Fugitives (5)	TRS	0.06	0.24
		VOC	0.06	0.24
DMS	Dimethyl Sulfide Area Process Fugitives (5)	TRS	0.02	0.10
		VOC	0.02	0.10
DMS Retro-Fug	DMS Retrofit Process Fugitives (5)	VOC	0.01	0.01
		H2S	0.01	0.01
		TRS	0.01	0.02
F-1	H2S Plant Process Fugitives (5)	H2S	0.01	0.01
		TRS	0.01	0.01
		VOC	0.01	0.01
FlareFug	Flare Area Fugitives (5)	VOC	0.01	0.01
Fug-Incin	Incinerator Process Fugitives (5)	H2S	0.01	0.01
		VOC	0.01	0.01
MMP-Fug	MMP Process Area Fugitives (5)	VOC	0.01	0.06
MMPRC-Fug	MMP Railcar Loading Area Process Fugitives (5)	VOC	0.04	0.15
MMPtks-Fug	MMP Storage Area Process Fugitives (5)	VOC	0.01	0.02
PR-Tower	Product Recovery Tower Fugitives (5)	H2S	0.01	0.01
		TRS	0.01	0.01
		VOC	0.02	0.10
RCSHIP	Railcar Loading/Unloading Fugitives (5)	TRS	0.03	0.11
		VOC	0.03	0.11
RUNDOWN	Rundown Tank Fugitives (5)	H2S	0.01	0.01
		TRS	0.11	0.46
		VOC	0.11	0.46
STORAGE	Storage Tanks Fugitives (5)	TRS	0.15	0.64

Emission Sources - Maximum Allowable Emission Rates

		VOC	0.16	0.69
SulfoxChlr	Sulfox Chiller System (5)	HCFC	0.01	0.01
SWS	Sour Water Strippers Fugitives (5)	H2S	0.01	0.01
		TRS	0.01	0.01
		VOC	0.01	0.01
TO-Fug	Thermal Oxidizer Process Fugitives (5)	VOC	0.01	0.01
TTSHIP	Tank Truck Loading/Unloading Fugitives (5)	TRS	0.03	0.11
		VOC	0.03	0.11

(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) CO - carbon monoxide
NOx - total oxides of nitrogen
PM - total particulate matter, suspended in the atmosphere, including PM_{10} and $PM_{2.5}$
PM10 - particulate matter equal to or less than 10 microns in diameter, including $PM_{2.5}$
PM2.5 - particulate matter equal to or less than 2.5 microns in diameter
SO2 - sulfur dioxide
VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
NaOH - sodium hydroxide
H2SO4 - sulfuric acid
H2S - hydrogen sulfide
TRS - total reduced sulfur, includes H2S and sulfur bearing VOC, excludes SO2
MeSH - methyl mercaptan
EtSH - ethyl mercaptan
TBM - tert-butyl mercaptan
DMS - dimethyl sulfide
MMP - methylmercaptopropionaldehyde
HCFC - hydrochlorofluorocarbons
MSS - planned maintenance, startup and shutdown activities
(4) Compliance with annual emission limits (tons per year) is based on a 12 month rolling period.
(5) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.
(6) The BMT-1 Unit can produce either methyl mercaptan, ethyl mercaptan, or tert-butyl mercaptan. Therefore, emissions from EPNs, BMT-1M and BMT-1E/T, do not occur simultaneously.
(7) Common exhaust stack.
(8) PSDTX1016 pollutant.
(9) Includes up to 416 hours per calendar year operation as the backup control device for EPN Sulfox-TO when it is not operating and 416 hours per calendar year for EPN INCIN when it is not operating.
(10) Planned startup, shutdown and maintenance activity emissions.
(11) The current allowable rates until all the amendment modifications are started up, per Special Condition 43.
(12) The allowable rates after the amendment modifications are started up, per Special Condition 43.

Emission Sources - Maximum Allowable Emission Rates

(13) Allowable Flare short term rate during MSS activities
(14) Allowable Flare short term rate during high flow events, limited to 1oo hours per year.

Date: July 15, 2015