Emission Sources - Maximum Allowable Emission Rates

Permit Number 117323

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)
COMP-15	Plant IV Residue Compressor Engine – Caterpillar G3612	VOC	3.91	17.14
		NO_x	3.91	17.14
		CO	3.13	13.71
		PM	0.24	1.05
		PM_{10}	0.24	1.05
		$PM_{2.5}$	0.24	1.05
		SO_2	0.35	0.06
		Benzene	0.01	0.04
		HAP	0.61	2.67
COMP-16	Plant IV Residue Compressor Engine – Caterpillar G3612	VOC	3.91	17.14
		NO_x	3.91	17.14
		CO	3.13	13.71
		PM	0.24	1.05
		PM_{10}	0.24	1.05
		$PM_{2.5}$	0.24	1.05
		SO_2	0.35	0.06
		Benzene	0.01	0.04
		HAP	0.61	2.67
COMP-17	Plant IV Residue Compressor Engine – Caterpillar G3612	VOC	3.91	17.14
		NO_x	3.91	17.14
		CO	3.13	13.71
		PM	0.24	1.05
		PM_{10}	0.24	1.05
		$PM_{2.5}$	0.24	1.05
		SO_2	0.35	0.06
		Benzene	0.01	0.04
		HAP	0.61	2.67

Emission Sources - Maximum Allowable Emission Rates

COMP-18	Plant IV Residue Compressor Engine – Caterpillar G3612	VOC	3.91	17.14
		NO_x	3.91	17.14
		CO	3.13	13.71
		PM	0.24	1.05
		PM_{10}	0.24	1.05
		$PM_{2.5}$	0.24	1.05
		SO_2	0.35	0.06
		Benzene	0.01	0.04
		HAP	0.61	2.67
COMP-19	Plant IV Residue Compressor Engine – Caterpillar G3612	VOC	3.91	17.14
		NO_x	3.91	17.14
		CO	3.13	13.71
		PM	0.24	1.05
		PM_{10}	0.24	1.05
		$PM_{2.5}$	0.24	1.05
		SO_2	0.35	0.06
		Benzene	0.01	0.04
		HAP	0.61	2.67
COMP-25	Plant VI Residue Compressor Engine – Caterpillar G3612	VOC	3.91	17.14
		NO_x	3.91	17.14
		CO	3.13	13.71
		PM	0.24	1.05
		PM_{10}	0.24	1.05
		$PM_{2.5}$	0.24	1.05
		SO_2	0.35	0.06
		Benzene	0.01	0.04
		HAP	0.61	2.67
COMP-26	Plant VI Residue Compressor Engine – Caterpillar G3612	VOC	3.91	17.14
		NO_x	3.91	17.14
		CO	3.13	13.71
		PM	0.24	1.05

Emission Sources - Maximum Allowable Emission Rates

		PM_{10}	0.24	1.05
		$PM_{2.5}$	0.24	1.05
		SO_2	0.35	0.06
		Benzene	0.01	0.04
		HAP	0.61	2.67
COMP-27	Plant VI Residue Compressor Engine – Caterpillar G3612	VOC	3.91	17.14
		NO_x	3.91	17.14
		CO	3.13	13.71
		PM	0.24	1.05
		PM_{10}	0.24	1.05
		$PM_{2.5}$	0.24	1.05
		SO_2	0.35	0.06
		Benzene	0.01	0.04
		HAP	0.61	2.67
COMP-28	Plant VI Residue Compressor Engine – Caterpillar G3612	VOC	3.91	17.14
		NO_x	3.91	17.14
		CO	3.13	13.71
		PM	0.24	1.05
		PM_{10}	0.24	1.05
		$PM_{2.5}$	0.24	1.05
		SO_2	0.35	0.06
		Benzene	0.01	0.04
		HAP	0.61	2.67
COMP-29	Plant VI Residue Compressor Engine – Caterpillar G3612	VOC	3.91	17.14
		NO_x	3.91	17.14
		CO	3.13	13.71
		PM	0.24	1.05
		PM_{10}	0.24	1.05
		$PM_{2.5}$	0.24	1.05
		SO_2	0.35	0.06
		Benzene	0.01	0.04
		HAP	0.61	2.67

Emission Sources - Maximum Allowable Emission Rates

BD3	Engine Blowdowns-Ramsey IV	VOC	1.12 (6)	0.07 (7)
BD4	Engine Blowdowns-Ramsey V	VOC	1.12 (6)	0.07 (7)
BD5	Engine Blowdowns-Ramsey VI	VOC	1.12 (6)	0.07 (7)
BD6	Blowdowns for Recycle Compressors	VOC	4.97 (6)	0.18 (7)
		Benzene	<0.01	<0.01
		HAP	0.05	<0.01
BD7	Blowdowns for Y-Grade Compressors	VOC	27.54 (6)	0.66 (7)
		Benzene	<0.01	<0.01
		HAP	0.01	<0.01
H-8	36MMBtu/hr - Ramsey IV Trim Heater	VOC	0.19	0.85
		NO_x	1.62	7.10
		CO	1.33	5.83
		PM	0.27	1.17
		PM_{10}	0.27	1.17
		$PM_{2.5}$	0.27	1.17
		SO_2	0.53	0.09
		H_2S	0.01	<0.01
		Benzene	<0.01	<0.01
		HAP	0.07	0.29
H-9	70 MMBtu/hr – Ramsey IV 1400 gpm Hot Oil Heater	VOC	0.38	1.65
		NO_x	3.15	13.80
		CO	2.59	11.34
		PM	0.52	2.28
		PM_{10}	0.52	2.28
		$PM_{2.5}$	0.52	2.28
		SO_2	1.03	0.18
		H_2S	0.01	<0.01
		Benzene	<0.01	<0.01
		HAP	0.13	0.57

Emission Sources - Maximum Allowable Emission Rates

H-10	23.4 MMBtu/hr – Ramsey V Molecular Sieve Regenerator Heater	VOC	0.13	0.55
		NO_x	1.05	4.61
		CO	0.87	3.79
		PM	0.17	0.76
		PM_{10}	0.17	0.76
		$PM_{2.5}$	0.17	0.76
		SO_2	0.34	0.06
		H_2S	<0.01	<0.01
		Benzene	<0.01	<0.01
		HAP	0.04	0.19
H-11	7.18 MMBtu/hr – Ramsey V Hot Oil Heater	VOC	0.04	0.17
		NO_x	0.32	1.42
		CO	0.27	1.16
		PM	0.05	0.23
		PM_{10}	0.05	0.23
		$PM_{2.5}$	0.05	0.23
		SO_2	0.11	0.02
		H_2S	<0.01	<0.01
		Benzene	<0.01	<0.01
		HAP	0.01	0.06
H-12	19.6 MMBtu/hr – Ramsey Plant VI Molecular Sieve Regenerator Heater	VOC	0.11	0.46
		NO_x	0.88	3.86
		CO	0.72	3.17
		PM	0.15	0.64
		PM_{10}	0.15	0.64
		$PM_{2.5}$	0.15	0.64
		SO_2	0.29	0.05
		H_2S	<0.01	<0.01
		Benzene	<0.01	<0.01
		HAP	0.04	0.16
H-14	13.8 MMBtu/hr – HP Stabilizer Hot Oil Heater #1	VOC	0.07	0.33
		NO_x	0.62	2.72
		CO	0.51	2.23
		PM	0.10	0.45

Emission Sources - Maximum Allowable Emission Rates

		PM_{10}	0.10	0.45
		$PM_{2.5}$	0.10	0.45
		SO_2	0.20	0.04
		H_2S	<0.01	<0.01
		Benzene	<0.01	<0.01
		HAP	0.03	0.11
H-15	13.8 MMBtu/hr – HP Stabilizer Hot Oil Heater #2	VOC	0.07	0.33
		NO_x	0.62	2.72
		CO	0.51	2.23
		PM	0.10	0.45
		PM_{10}	0.10	0.45
		$PM_{2.5}$	0.10	0.45
		SO_2	0.20	0.04
		H_2S	<0.01	<0.01
		Benzene	<0.01	<0.01
		HAP	0.03	0.11
H-16	23.4 MMBtu/hr – Ramsey IV Molecular Sieve Regenerator Heater	VOC	0.13	0.55
		NO_x	1.05	4.61
		CO	0.87	3.79
		PM	0.17	0.76
		PM_{10}	0.17	0.76
		$PM_{2.5}$	0.17	0.76
		SO_2	0.34	0.06
		H_2S	<0.01	<0.01
		Benzene	<0.01	<0.01
		HAP	0.04	0.19

Emission Sources - Maximum Allowable Emission Rates

RTO-4	Regenerative Thermal Oxidizer 4	VOC	0.12	0.51
		NO_x	0.93	4.06
		CO	7.96	34.85
		PM	0.11	0.47
		PM_{10}	0.11	0.47
		$PM_{2.5}$	0.11	0.47
		SO_2	22.80	99.85
		H_2S	0.12	0.53
		HAP	<0.01	0.01
F-1B	Flare 1B MSS Flare	VOC	353.07	43.82
		NO_x	132.02	14.02
		CO	263.57	27.98
		SO_2	0.45	0.01
		H_2S	<0.01	<0.01
		Benzene	0.20	0.02
		HAP	2.39	0.19
F-2R	Acid Gas Flare 2 (8)	VOC	0.25	0.05
		NO_x	6.60	1.45
		CO	56.63	12.43
		SO_2	22.80	4.99
		H_2S	0.24	0.05
		HAP	<0.01	<0.01
FUG-4	Ramsey Plant IV-VI Fugitive Emissions (5)	VOC	1.68	7.36
		Benzene	<0.01	0.02
		HAP	0.02	0.08
GEN-01	Emergency Generator	VOC	0.09	0.02
		NO_x	0.25	0.06
		CO	1.27	0.32
		PM	0.06	0.02
		PM_{10}	0.06	0.02

Emission Sources - Maximum Allowable Emission Rates

		$PM_{2.5}$	0.06	0.02
		SO_2	0.05	<0.01
		Benzene	<0.01	<0.01
		HAP	0.10	0.03
MSS-VESSEL2	Demethanizer Tower and Surge Tank MSS	VOC	29.50	0.04
MSS-PAINT2	MSS Painting Emissions	VOC	22.92	0.28
MSS-MISC2	Miscellaneous MSS Activities	VOC	0.07	0.29
		Benzene	<0.01	<0.01
		HAP	<0.01	<0.01

(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
NO_x - total oxides of nitrogen
SO_2 - sulfur dioxide
PM - total particulate matter, suspended in the atmosphere, including PM_{10} and $PM_{2.5}$, as represented
PM_{10} - 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
HAP - hazardous air pollutant as listed in § 112(b) of the Federal Clean Air Act or Title 40 Code of Federal Regulations Part 63, Subpart C
H_2S - hydrogen sulfide
(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) Hourly blowdown emissions are based on a single engine blowdown in a single hour.
(7) Annual blowdown emissions are based on an average of 2 events/engine/month and estimated duration of blowdown of 1 hrs.
(8) During RTO down time emissions from Amine Still Vents shall be routed to Acid Gas Flare 2 (F-2R). The allowable downtimes for the RTOs are described in Special Condition No. 23.

Date: June 8, 2016