Emission Sources - Maximum Allowable Emission Rates

Permit Numbers 158420 and PSDTX1572

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 (4)	
			lb/hr	TPY(5)
M-FLARE	Marine Flare	NO_x	240.22	26.11
		CO	479.58	52.13
		VOC	4.72	0.69
		SO_2	1.30	0.14
		PM	0.01	0.01
		PM_{10}	0.01	0.01
		$PM_{2.5}$	0.01	0.01
G-FLARE	Ground Flare	NO_x	12.24	52.94
		CO	24.49	105.69
		VOC	3.24	5.32
		SO_2	0.07	0.33
		PM	0.13	0.55
		PM_{10}	0.13	0.55
		$PM_{2.5}$	0.13	0.55
G-FLARE	Ground Flare (MSS)	NO_x	1,706.74	368.66
		CO	3,407.29	735.97
		VOC	114.49	24.73
		SO_2	8.66	1.87
		PM	0.13	0.55
		PM_{10}	0.13	0.55
		$PM_{2.5}$	0.13	0.55

Emission Sources - Maximum Allowable Emission Rates

CT-COMP-1	Refrigeration Compressor Turbine1	NO_x	36.45	139.59
		NO_x (MSS)	96.02	-
		CO	61.62	238.46
		CO (MSS)	467.60	-
		VOC	2.82	11.00
		VOC (MSS)	33.40	-
		PM	11.07	42.15
		PM_{10}	11.07	42.15
		$PM_{2.5}$	11.07	42.15
		SO_2	10.24	2.60
		H_2SO_4	1.57	0.40
CT-COMP-2	Refrigeration Compressor Turbine 2	NO_x	36.45	139.59
		NO_x (MSS)	96.02	-
		CO	61.62	238.46
		CO (MSS)	467.60	-
		VOC	2.82	11.00
		VOC (MSS)	33.40	-
		PM	11.07	42.15
		PM_{10}	11.07	42.15
		$PM_{2.5}$	11.07	42.15
		SO_2	10.24	2.60
		H_2SO_4	1.57	0.40
CT-COMP-3	Refrigeration Compressor Turbine 3	NO_x	36.45	139.59
		NO_x (MSS)	96.02	-
		CO	61.62	238.46
		CO (MSS)	467.60	-
		VOC	2.82	11.00
		VOC (MSS)	33.40	-
		PM	11.07	42.15
		PM_{10}	11.07	42.15

Emission Sources - Maximum Allowable Emission Rates

		$PM_{2.5}$	11.07	42.15
		SO_2	10.24	2.60
		H_2SO_4	1.57	0.40
CT-COMP-4	Refrigeration Compressor Turbine 4	NO_x	36.45	139.59
		NO_x (MSS)	96.02	-
		CO	61.62	238.46
		CO (MSS)	467.60	-
		VOC	2.82	11.00
		VOC (MSS)	33.40	-
		PM	11.07	42.15
		PM_{10}	11.07	42.15
		$PM_{2.5}$	11.07	42.15
		SO_2	10.24	2.60
		H_2SO_4	1.57	0.40
CT-COMP-5	Refrigeration Compressor Turbine 5	NO_x	36.45	139.59
		NO_x (MSS)	96.02	-
		CO	61.62	238.46
		CO (MSS)	467.60	-
		VOC	2.82	11.00
		VOC (MSS)	33.40	-
		PM	11.07	42.15
		PM_{10}	11.07	42.15
		$PM_{2.5}$	11.07	42.15
		SO_2	10.24	2.60
		H_2SO_4	1.57	0.40
CT-COMP-6	Refrigeration Compressor Turbine 6	NO_x	36.45	139.59
		NO_x (MSS)	96.02	-
		CO	61.62	238.46
		CO (MSS)	467.60	-
		VOC	2.82	11.00
		VOC (MSS)	33.40	-

Emission Sources - Maximum Allowable Emission Rates

		PM	11.07	42.15
		PM_{10}	11.07	42.15
		$PM_{2.5}$	11.07	42.15
		SO_2	10.24	2.60
		H_2SO_4	1.57	0.40
CT-COMP-7	Refrigeration Compressor Turbine 7	NO_x	36.45	139.59
		NO_x (MSS)	96.02	-
		CO	61.62	238.46
		CO (MSS)	467.60	-
		VOC	2.82	11.00
		VOC (MSS)	33.40	-
		PM	11.07	42.15
		PM_{10}	11.07	42.15
		$PM_{2.5}$	11.07	42.15
		SO_2	10.24	2.60
		H_2SO_4	1.57	0.40
CT-COMP-8	Refrigeration Compressor Turbine 8	NO_x	36.45	139.59
		NO_x (MSS)	96.02	-
		CO	61.62	238.46
		CO (MSS)	467.60	-
		VOC	2.82	11.00
		VOC (MSS)	33.40	-
		PM	11.07	42.15
		PM_{10}	11.07	42.15
		$PM_{2.5}$	11.07	42.15
		SO_2	10.24	2.60
		H_2SO_4	1.57	0.40
CT-GEN-1	Generator Combustion Turbine 1	NO_x	7.37	28.21
		NO_x (MSS)	36.84	-
		CO	8.07	30.84
		CO (MSS)	22.43	-

Emission Sources - Maximum Allowable Emission Rates

		VOC	1.03	3.93
		VOC (MSS)	7.67	-
		PM	2.32	8.84
		PM_{10}	2.32	8.84
		$PM_{2.5}$	2.32	8.84
		SO_2	2.96	1.88
		H_2SO_4	0.45	0.29
		NH_3	5.46	20.78
		Formaldehyde	0.13	0.48
CT-GEN-2	Generator Combustion Turbine 2	NO_x	7.37	28.21
		NO_x (MSS)	36.84	-
		CO	8.07	30.84
		CO (MSS)	22.43	-
		VOC	1.03	3.93
		VOC (MSS)	7.67	-
		PM	2.32	8.84
		PM_{10}	2.32	8.84
		$PM_{2.5}$	2.32	8.84
		SO_2	2.96	1.88
		H_2SO_4	0.45	0.29
		NH_3	5.46	20.78
		Formaldehyde	0.13	0.48
CT-GEN-3	Generator Combustion Turbine 3	NO_x	7.37	28.21
		NO_x (MSS)	36.84	-
		CO	8.07	30.84
		CO (MSS)	22.43	-
		VOC	1.03	3.93
		VOC (MSS)	7.67	-
		PM	2.32	8.84
		PM_{10}	2.32	8.84
		$PM_{2.5}$	2.32	8.84

Emission Sources - Maximum Allowable Emission Rates

		SO_2	2.96	1.88
		H_2SO_4	0.45	0.29
		NH_3	5.46	20.78
		Formaldehyde	0.13	0.48
CT-GEN-4	Generator Combustion Turbine 4	NO_x	7.37	28.21
		NO_x (MSS)	36.84	-
		CO	8.07	30.84
		CO (MSS)	22.43	-
		VOC	1.03	3.93
		VOC (MSS)	7.67	-
		PM	2.32	8.84
		PM_{10}	2.32	8.84
		$PM_{2.5}$	2.32	8.84
		SO_2	2.96	1.88
		H_2SO_4	0.45	0.29
		NH_3	5.46	20.78
		Formaldehyde	0.13	0.48
CT-GEN-5	Generator Combustion Turbine 5	NO_x	7.37	28.21
		NO_x (MSS)	36.84	-
		CO	8.07	30.84
		CO (MSS)	22.43	-
		VOC	1.03	3.93
		VOC (MSS)	7.67	-
		PM	2.32	8.84
		PM_{10}	2.32	8.84
		$PM_{2.5}$	2.32	8.84
		SO_2	2.96	1.88
		H_2SO_4	0.45	0.29
		NH_3	5.46	20.78
		Formaldehyde	0.13	0.48
CT-GEN-6	Generator Combustion Turbine 6	NO_x	7.37	28.21

Emission Sources - Maximum Allowable Emission Rates

		NO_x (MSS)	36.84	-
		CO	8.07	30.84
		CO (MSS)	22.43	-
		VOC	1.03	3.93
		VOC (MSS)	7.67	-
		PM	2.32	8.84
		PM_{10}	2.32	8.84
		$PM_{2.5}$	2.32	8.84
		SO_2	2.96	1.88
		H_2SO_4	0.45	0.29
		NH_3	5.46	20.78
		Formaldehyde	0.13	0.48
CT-GEN-7	Generator Combustion Turbine 7	NO_x	7.37	28.21
		NO_x (MSS)	36.84	-
		CO	8.07	30.84
		CO (MSS)	22.43	-
		VOC	1.03	3.93
		VOC (MSS)	7.67	-
		PM	2.32	8.84
		PM_{10}	2.32	8.84
		$PM_{2.5}$	2.32	8.84
		SO_2	2.96	1.88
		H_2SO_4	0.45	0.29
		NH_3	5.46	20.78
		Formaldehyde	0.13	0.48
CT-GEN-8	Generator Combustion Turbine 8	NO_x	7.37	28.21
		NO_x (MSS)	36.84	-
		CO	8.07	30.84
		CO (MSS)	22.43	-
		VOC	1.03	3.93
		VOC (MSS)	7.67	-

Emission Sources - Maximum Allowable Emission Rates

		PM	2.32	8.84
		PM_{10}	2.32	8.84
		$PM_{2.5}$	2.32	8.84
		SO_2	2.96	1.88
		H_2SO_4	0.45	0.29
		NH_3	5.46	20.78
		Formaldehyde	0.13	0.48
CT-GEN-9	Generator Combustion Turbine 9	NO_x	7.37	28.21
		NO_x (MSS)	36.84	-
		CO	8.07	30.84
		CO (MSS)	22.43	-
		VOC	1.03	3.93
		VOC (MSS)	7.67	-
		PM	2.32	8.84
		PM_{10}	2.32	8.84
		$PM_{2.5}$	2.32	8.84
		SO_2	2.96	1.88
		H_2SO_4	0.45	0.29
		NH_3	5.46	20.78
		Formaldehyde	0.13	0.48
HTR-1	Gas Turbine Preheater 1	NO_x	0.19	0.82
		CO	0.31	1.37
		VOC	0.02	0.09
		SO_2	0.01	0.02
		PM	0.03	0.12
		PM_{10}	0.03	0.12
		$PM_{2.5}$	0.03	0.12
HTR-2	Gas Turbine Preheater 2	NO_x	0.19	0.82
		CO	0.31	1.37
		VOC	0.02	0.09
		SO_2	0.01	0.02

Emission Sources - Maximum Allowable Emission Rates

		PM	0.03	0.12
		PM_{10}	0.03	0.12
		$PM_{2.5}$	0.03	0.12
TO-1	Thermal Oxidizer 1	NO_x	4.13	18.11
		CO	6.42	28.14
		VOC	0.43	1.86
		PM	0.58	2.55
		PM_{10}	0.58	2.55
		$PM_{2.5}$	0.58	2.55
		SO_2	1.28	5.73
		H_2SO_4	0.10	0.44
TO-2	Thermal Oxidizer 2	NO_x	4.13	18.11
		CO	6.42	28.14
		VOC	0.43	1.86
		PM	0.58	2.55
		PM_{10}	0.58	2.55
		$PM_{2.5}$	0.58	2.55
		SO_2	1.28	5.73
		H_2SO_4	0.10	0.44
TO-3	Thermal Oxidizer 3	NO_x	4.13	18.11
		CO	6.42	28.14
		VOC	0.43	1.86
		PM	0.58	2.55
		PM_{10}	0.58	2.55
		$PM_{2.5}$	0.58	2.55
		SO_2	1.28	5.73
		H_2SO_4	0.10	0.44
TO-4	Thermal Oxidizer 4	NO_x	4.13	18.11
		CO	6.42	28.14
		VOC	0.43	1.86
		PM	0.58	2.55

Emission Sources - Maximum Allowable Emission Rates

		PM_{10}	0.58	2.55
		$PM_{2.5}$	0.58	2.55
		SO_2	1.28	5.73
		H_2SO_4	0.10	0.44
ENG-GEN-1	Diesel Standby Generator 1	NO_x	47.39	0.57
		CO	27.78	0.33
		VOC	3.40	0.04
		PM	1.59	0.02
		PM_{10}	1.59	0.02
		$PM_{2.5}$	1.59	0.02
		SO_2	0.06	<0.01
ENG-GEN-2	Diesel Standby Generator 2	NO_x	47.39	0.57
		CO	27.78	0.33
		VOC	3.40	0.04
		PM	1.59	0.02
		PM_{10}	1.59	0.02
		$PM_{2.5}$	1.59	0.02
		SO_2	0.06	<0.01
ENG-GEN-3	Diesel Standby Generator 3	NO_x	47.39	0.57
		CO	27.78	0.33
		VOC	3.40	0.04
		PM	1.59	0.02
		PM_{10}	1.59	0.02
		$PM_{2.5}$	1.59	0.02
		SO_2	0.06	<0.01
ENG-GEN-4	Diesel Standby Generator 4	NO_x	47.39	0.57
		CO	27.78	0.33
		VOC	3.40	0.04
		PM	1.59	0.02
		PM_{10}	1.59	0.02
		$PM_{2.5}$	1.59	0.02

Emission Sources - Maximum Allowable Emission Rates

		SO_2	0.06	<0.01
ENG-FWP-1	Diesel Fire Water Pump 1	NO_x	8.89	0.17
		CO	4.97	0.10
		VOC	0.64	0.01
		PM	0.30	0.01
		PM_{10}	0.30	0.01
		$PM_{2.5}$	0.30	0.01
		SO_2	0.01	<0.01
ENG-FWP-2	Diesel Fire Water Pump 2	NO_x	8.89	0.17
		CO	4.97	0.10
		VOC	0.64	0.01
		PM	0.30	0.01
		PM_{10}	0.30	0.01
		$PM_{2.5}$	0.30	0.01
		SO_2	0.01	<0.01
TRK-LOAD-1	Condensate Truck Loading 1 Fugitives	VOC	1.15	0.73
TRK-LOAD-2	Process Wastewater Truck Loading Fugitives	VOC	<0.01	<0.01
TK-DSLF-1	Diesel Storage Tank for FWP-1	VOC	0.03	<0.01
TK-DSLF-2	Diesel Storage Tank for FWP-2	VOC	0.03	<0.01
TK-DSLG-1	Diesel Storage Tank for Standby Generator 1	VOC	0.20	<0.01
TK-DSLG-2	Diesel Storage Tank for Standby Generator 2	VOC	0.20	<0.01
TK-DSLG-3	Diesel Storage Tank for Standby Generator 3	VOC	0.20	<0.01
TK-DSLG-4	Diesel Storage Tank for Standby Generator 4	VOC	0.20	<0.01
TK-DSL-1	Diesel Storage Tank 1	VOC	0.46	0.01
TK-LAMINE-1	Lean Amine Storage Tank 1	VOC	<0.01	<0.01
TK-FAMINE-1	Fresh Amine Storage Tank 1	VOC	<0.01	<0.01
TK-HOTOIL-1	Hot Oil Storage Tank 1	VOC	0.04	<0.01
TK-SLOPOIL-1	Slop Oil Storage Tank 1	VOC	0.57	<0.01
FUGITIVES	Equipment Leak Fugitives (6)	VOC	9.88	43.29
AMFUG	Ammonia Piping Fugitives (6)	NH_3	<0.01	0.03
TK-PWW-1	Process Wastewater Storage Tank	VOC	<0.01	<0.01

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
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
H_2SO_4 - sulfuric acid
H_2S - hydrogen sulfide
NH_3 - ammonia
MSS - maintenance, startup, and shutdown emissions
(4) Planned maintenance, startup and shutdown (MSS) lb/hour emissions for all pollutants are authorized even if not specifically identified as MSS. During any clock hour that includes one or more minutes of planned MSS, that pollutant's maximum hourly emission rate shall apply during that clock hour. Continuous demonstration of compliance with the lb/hr emission limits for NO_x, CO, and NH_3, from any of the refrigeration or generation turbines equipped with CEMS or PEMS shall be based upon a three-hour rolling average.
(5) Compliance with annual emission limits (tons per year) is based on a 12 month rolling period. Annual emission rates for each source include planned MSS emissions, unless otherwise noted.
(6) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.

Emission Sources - Maximum Allowable Emission Rates

Permit Number GHGPSDTX198

This table lists the maximum allowable emission rates of greenhouse gas (GHG) emissions, as defined in Title 30 Texas Administrative Code § 101.1, for sources of GHG air contaminants on the applicant's property authorized by this permit. 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
			TPY (4)
M-FLARE	Marine Flare	CO_2	24,088.34
		CH_4	77.34
		N_2O	0.01
		CO_2e	26,024
G-FLARE	Ground Flare	CO_2	42,777.97
		CH_4	125.56
		N_2O	0.02
		CO_2e	45,923
G-FLARE	Ground Flare (MSS)	CO_2	294,618.52
		CH_4	1,082.16
		N_2O	<0.01
		CO_2e	321,673
CT-COMP-1	Refrigeration Compressor Turbine1	CO_2	503,996.77
		CH_4	9.50
		N_2O	0.95
		CO_2e	504,517
CT-COMP-2	Refrigeration Compressor Turbine2	CO_2	503,996.77
		CH_4	9.50
		N_2O	0.95
		CO_2e	504,517
CT-COMP-3	Refrigeration Compressor Turbine3	CO_2	503,996.77
		CH_4	9.50
		N_2O	0.95
		CO_2e	504,517
CT-COMP-4	Refrigeration Compressor Turbine4	CO_2	503,996.77
		CH_4	9.50
		N_2O	0.95
		CO_2e	504,517
CT-COMP-5	Refrigeration Compressor Turbine5	CO_2	503,996.77
		CH_4	9.50
		N_2O	0.95

Emission Sources - Maximum Allowable Emission Rates

		CO_2e	504,517
CT-COMP-6	Refrigeration Compressor Turbine6	CO_2	503,996.77
		CH_4	9.50
		N_2O	0.95
		CO_2e	504,517
CT-COMP-7	Refrigeration Compressor Turbine7	CO_2	503,996.77
		CH_4	9.50
		N_2O	0.95
		CO_2e	504,517
CT-COMP-8	Refrigeration Compressor Turbine8	CO_2	503,996.77
		CH_4	9.50
		N_2O	0.95
		CO_2e	504,517
CT-GEN-1	Generator Combustion Turbine 1	CO_2	156,749.07
		CH_4	2.95
		N_2O	0.30
		CO_2e	156,912
CT-GEN-2	Generator Combustion Turbine 2	CO_2	156,749.07
		CH_4	2.95
		N_2O	0.30
		CO_2e	156,912
CT-GEN-3	Generator Combustion Turbine 3	CO_2	156,749.07
		CH_4	2.95
		N_2O	0.30
		CO_2e	156,912
CT-GEN-4	Generator Combustion Turbine 4	CO_2	156,749.07
		CH_4	2.95
		N_2O	0.30
		CO_2e	156,912
CT-GEN-5	Generator Combustion Turbine 5	CO_2	156,749.07
		CH_4	2.95
		N_2O	0.30
		CO_2e	156,912
CT-GEN-6	Generator Combustion Turbine 6	CO_2	156,749.07
		CH_4	2.95
		N_2O	0.30
		CO_2e	156,912
CT-GEN-7	Generator Combustion Turbine 7	CO_2	156,749.07
		CH_4	2.95

Emission Sources - Maximum Allowable Emission Rates

		N_2O	0.30
		CO_2e	156,912
CT-GEN-8	Generator Combustion Turbine 8	CO_2	156,749.07
		CH_4	2.95
		N_2O	0.30
		CO_2e	156,912
CT-GEN-9	Generator Combustion Turbine 9	CO_2	156,749.07
		CH_4	2.95
		N_2O	0.30
		CO_2e	156,912
HTR-1	Gas Turbine Preheater 1	CO_2	1,946.97
		CH_4	0.04
		N_2O	<0.01
		CO_2e	1,951
HTR-2	Gas Turbine Preheater 2	CO_2	1,946.97
		CH_4	0.04
		N_2O	<0.01
		CO_2e	1,951
TO-1	Thermal Oxidizer 1	CO_2	472,886
		CH_4	1.09
		N_2O	0.08
		CO_2e	472936
TO-2	Thermal Oxidizer 2	CO_2	472,886
		CH_4	1.09
		N_2O	0.08
		CO_2e	472936
TO-3	Thermal Oxidizer 3	CO_2	472,886
		CH_4	1.09
		N_2O	0.08
		CO_2e	472936
TO-4	Thermal Oxidizer 4	CO_2	472,886
		CH_4	1.09
		N_2O	0.08
		CO_2e	472936
ENG-GEN-1	Diesel Standby Generator 1	CO_2	66.07
		CH_4	<0.01
		N_2O	<0.01
		CO_2e	67
ENG-GEN-2	Diesel Standby Generator 2	CO_2	66.07

Emission Sources - Maximum Allowable Emission Rates

		CH_4	<0.01
		N_2O	<0.01
		CO_2e	67
ENG-GEN-3	Diesel Standby Generator 3	CO_2	66.07
		CH_4	<0.01
		N_2O	<0.01
		CO_2e	67
ENG-GEN-4	Diesel Standby Generator 4	CO_2	66.07
		CH_4	<0.01
		N_2O	<0.01
		CO_2e	67
ENG-FWP-1	Diesel Fire Water Pump 1	CO_2	20.13
		CH_4	<0.01
		N_2O	<0.01
		CO_2e	21
ENG-FWP-2	Diesel Fire Water Pump 2	CO_2	20.13
		CH_4	<0.01
		N_2O	<0.01
		CO_2e	21
FUGITIVES	Equipment Leak Fugitives (5)	CO_2	17.03
		CH_4	88.34
		CO_2e	2,226
Circuit Breakers	Circuit Breakers (5)	SF_6	0.01
		CO_2e	192

(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_2 - carbon dioxide
N_2O - nitrous oxide
CH_4 - methane
SF_6 - sulfur hexafluoride
CO_2e - carbon dioxide equivalents, based on the following Global Warming Potentials from 40 CFR Part 98, subpart A, Table A-1, as published on November 29, 2013 (78 FR71904): CO_2 (1), CH_4 (25), N_2O (298), and SF_6 (22,800)
(4) Compliance with annual CO_2e emission limits (tons per year) is based on a 12-month rolling period. Annual emission limits includes normal and planned maintenance, startup, and shutdown (MSS) emissions. For all non-CO_2e GHG emissions, listed emission rates are given for informational purposes only and do not constitute an enforceable limit.
(5) Fugitive emission rates are estimates and are enforceable through compliance with the applicable special conditions and permit application representations.