Emission Sources - Maximum Allowable Emission Rates

Permit Numbers 122401 and PSDTX1428

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)
Scenario 1 - Option 1 - Siemens				
E-ST1a	Siemens Gas Turbine 1 Simple Cycle	NO_x	84.93	107.04
		NO_x (MSS)	89.75	-
		CO	51.71	128.08
		CO (MSS)	404.20	-
		VOC	6.58	15.69
		VOC (MSS)	48.02	-
		PM	13.40	13.56
		PM_{10}	13.40	13.56
		$PM_{2.5}$	13.40	13.56
		SO_2	7.40	2.31
		H_2SO_4	3.40	1.06
E-ST2a	Siemens Gas Turbine 2 Simple Cycle	NO_x	84.93	107.04
		NO_x (MSS)	89.75	-
		CO	51.71	128.08
		CO (MSS)	404.20	-
		VOC	6.58	15.69
		VOC (MSS)	48.02	-
		PM	13.40	13.56
		PM_{10}	13.40	13.56
		$PM_{2.5}$	13.40	13.56
		SO_2	7.40	2.31

Emission Sources - Maximum Allowable Emission Rates

		H_2SO_4	3.40	1.06
E-ST3a	Siemens Gas Turbine 3 Simple Cycle	NO_x	84.93	107.04
		NO_x (MSS)	89.75	-
		CO	51.71	128.08
		CO (MSS)	404.20	-
		VOC	6.58	15.69
		VOC (MSS)	48.02	-
		PM	13.40	13.56
		PM_{10}	13.40	13.56
		$PM_{2.5}$	13.40	13.56
		SO_2	7.40	2.31
		H_2SO_4	3.40	1.06
E-ST4a	Siemens Gas Turbine 4 Simple Cycle	NO_x	84.93	107.04
		NO_x (MSS)	89.75	-
		CO	51.71	128.08
		CO (MSS)	404.20	-
		VOC	6.58	15.69
		VOC (MSS)	48.02	-
		PM	13.40	13.56
		PM_{10}	13.40	13.56
		$PM_{2.5}$	13.40	13.56
		SO_2	7.40	2.31
		H_2SO_4	3.40	1.06
Scenario 2 - Option 1 – Siemens				
E-ST1a	Siemens Gas Turbine 1 Simple Cycle	NO_x	84.93	-
		NO_x (MSS)	89.75	-
		CO	51.71	-
		CO (MSS)	404.20	-
		VOC	6.58	-

Emission Sources - Maximum Allowable Emission Rates

		VOC (MSS)	48.02	-
		PM	13.40	-
		PM_{10}	13.40	-
		$PM_{2.5}$	13.40	-
		SO_2	7.40	-
		H_2SO_4	3.40	-
E-ST1b	Siemens Gas Turbine 1 Combined Cycle	NO_x	37.35	-
		NO_x (MSS)	118.91	-
		CO	30.32	-
		CO (MSS)	967.67	-
		VOC	17.36	-
		VOC (MSS)	176.45	-
		PM	19.35	-
		PM_{10}	19.35	-
		$PM_{2.5}$	19.35	-
		SO_2	8.85	-
		H_2SO_4	4.07	-
		NH_3	32.26	-
		$(NH_4)_2SO_4$	5.48	-
E-ST1a, & E-ST1b	Siemens - Annual Emissions Gas Turbine 1 Combined and Simple Cycle	NO_x	-	203.91
		CO	-	424.18
		VOC	-	141.37
		PM	-	66.75
		PM_{10}	-	66.75
		$PM_{2.5}$	-	66.75
		SO_2	-	9.69
		H_2SO_4	-	4.45
		NH_3	-	99.21
		$(NH_4)_2SO_4$	-	6.00

Emission Sources - Maximum Allowable Emission Rates

E-ST2a	Siemens Gas Turbine 2 Simple Cycle	NO_x	84.93	-
		NO_x (MSS)	89.75	-
		CO	51.71	-
		CO (MSS)	404.20	-
		VOC	6.58	-
		VOC (MSS)	48.02	-
		PM	13.40	-
		PM_{10}	13.40	-
		$PM_{2.5}$	13.40	-
		SO_2	7.40	-
		H_2SO_4	3.40	-
E-ST2b	Siemens Gas Turbine 2 Combined Cycle	NO_x	37.35	-
		NO_x (MSS)	118.91	-
		CO	30.32	-
		CO (MSS)	967.67	-
		VOC	17.36	-
		VOC (MSS)	176.45	-
		PM	19.35	-
		PM_{10}	19.35	-
		$PM_{2.5}$	19.35	-
		SO_2	8.85	-
		H_2SO_4	4.07	-
		NH_3	32.26	-
		$(NH_4)_2SO_4$	5.48	-
E-ST2a, & E-ST2b	Siemens - Annual Emissions Gas Turbine 2 Combined and Simple Cycle	NO_x	-	203.91
		CO	-	424.18
		VOC	-	141.37
		PM	-	66.75
		PM_{10}	-	66.75

Emission Sources - Maximum Allowable Emission Rates

		$PM_{2.5}$	-	66.75
		SO_2	-	9.69
		H_2SO_4	-	4.45
		NH_3	-	99.21
		$(NH_4)_2SO_4$	-	6.00
Scenario 1 - Option 2 – GE				
E-ST1a	GE Gas Turbine 1 Simple Cycle	NO_x	78.76	96.43
		NO_x (MSS)	85.12	-
		CO	47.95	121.63
		CO (MSS)	401.38	-
		VOC	6.10	14.86
		VOC (MSS)	47.66	-
		PM	13.19	13.46
		PM_{10}	13.19	13.46
		$PM_{2.5}$	13.19	13.46
		SO_2	6.95	2.09
		H_2SO_4	3.19	0.96
E-ST2a	GE Gas Turbine 2 Simple Cycle	NO_x	78.76	96.43
		NO_x (MSS)	85.12	-
		CO	47.95	121.63
		CO (MSS)	401.38	-
		VOC	6.10	14.86
		VOC (MSS)	47.66	-
		PM	13.19	13.46
		PM_{10}	13.19	13.46
		$PM_{2.5}$	13.19	13.46
		SO_2	6.95	2.09
		H_2SO_4	3.19	0.96
E-ST3a	GE	NO_x	78.76	96.43

Emission Sources - Maximum Allowable Emission Rates

		NO_x (MSS)	85.12	-
		CO	47.95	121.63
		CO (MSS)	401.38	-
		VOC	6.10	14.86
		VOC (MSS)	47.66	-
		PM	13.19	13.46
		PM_{10}	13.19	13.46
		$PM_{2.5}$	13.19	13.46
		SO_2	6.95	2.09
		H_2SO_4	3.19	0.96
E-ST4a	GE Gas Turbine 4 Simple Cycle	NO_x	78.76	96.43
		NO_x (MSS)	85.12	-
		CO	47.95	121.63
		CO (MSS)	401.38	-
		VOC	6.10	14.86
		VOC (MSS)	47.66	-
		PM	13.19	13.46
		PM_{10}	13.19	13.46
		$PM_{2.5}$	13.19	13.46
		SO_2	6.95	2.09
		H_2SO_4	3.19	0.96
Scenario 2 - Option 2 – GE				
E-ST1a	GE Gas Turbine 1 Simple Cycle	NO_x	78.76	-
		NO_x (MSS)	85.12	-
		CO	47.95	-
		CO (MSS)	401.38	-
		VOC	6.10	-
		VOC (MSS)	47.66	-
		PM	13.19	-

Emission Sources - Maximum Allowable Emission Rates

		PM_{10}	13.19	-
		$PM_{2.5}$	13.19	-
		SO_2	6.95	-
		H_2SO_4	3.19	-
E-ST1b	GE Gas Turbine 1 Combined Cycle	NO_x	33.64	-
		NO_x (MSS)	118.91	-
		CO	27.31	-
		CO (MSS)	967.67	-
		VOC	15.64	-
		VOC (MSS)	176.45	-
		PM	18.43	-
		PM_{10}	18.43	-
		$PM_{2.5}$	18.43	-
		SO_2	8.23	-
		H_2SO_4	3.78	-
		NH_3	29.06	-
		$(NH_4)_2SO_4$	5.10	-
E-ST1a, & E-ST1b	GE - Annual Emissions Gas Turbine 1 Combined and Simple Cycle	NO_x	-	194.19
		CO	-	449.73
		VOC	-	89.45
		PM	-	64.28
		PM_{10}	-	64.28
		$PM_{2.5}$	-	64.28
		SO_2	-	8.77
		H_2SO_4	-	4.03
		NH_3	-	88.93
		$(NH_4)_2SO_4$	-	5.43
E-ST2a	GE Gas Turbine 2 Simple Cycle	NO_x	78.76	-
		NO_x (MSS)	85.12	-

Emission Sources - Maximum Allowable Emission Rates

		CO	47.95	-
		CO (MSS)	401.38	-
		VOC	6.10	-
		VOC (MSS)	47.66	-
		PM	13.19	-
		PM_{10}	13.19	-
		$PM_{2.5}$	13.19	-
		SO_2	6.95	-
		H_2SO_4	3.19	-
E-ST2b	GE Gas Turbine 2 Combined Cycle	NO_x	33.64	-
		NO_x (MSS)	118.91	-
		CO	27.31	-
		CO (MSS)	967.67	-
		VOC	15.64	-
		VOC (MSS)	176.45	-
		PM	18.43	-
		PM_{10}	18.43	-
		$PM_{2.5}$	18.43	-
		SO_2	8.23	-
		H_2SO_4	3.78	-
		NH_3	29.06	-
		$(NH_4)_2SO_4$	5.10	-
E-ST2a, & E-ST2b	GE - Annual Emissions Gas Turbine 2 Combined and Simple Cycle	NO_x	-	194.19
		CO	-	449.73
		VOC	-	89.45
		PM	-	64.28
		PM_{10}	-	64.28
		$PM_{2.5}$	-	64.28
		SO_2	-	8.77

Emission Sources - Maximum Allowable Emission Rates

		H_2SO_4	-	4.03
		NH_3	-	88.93
		$(NH_4)_2SO_4$	-	5.43
Other Emissions				
CTG1-LOV	Gas Turbine 1 Lube Oil Vent	VOC	0.09	0.40
CTG2-LOV	Gas Turbine 2 Lube Oil Vent	VOC	0.09	0.40
CTG3-LOV	Gas Turbine 3 Lube Oil Vent	VOC	0.09	0.40
CTG4-LOV	Gas Turbine 4 Lube Oil Vent	VOC	0.09	0.40
ST1-LOV	Steam Turbine 1 Lube Oil Vent	VOC	0.09	0.40
E-AUXBLR	Auxiliary Boiler	NO_x	3.79	1.66
		CO	8.01	1.75
		VOC	0.58	0.26
		PM	0.81	0.35
		PM_{10}	0.81	0.35
		$PM_{2.5}$	0.81	0.35
		SO_2	0.31	0.03
E-CTWR	Cooling Tower	PM	1.00	4.38
		PM_{10}	0.56	2.45
		$PM_{2.5}$	<0.01	0.01
E-FWP	Firewater Pump	NO_x	3.09	0.15
		CO	2.87	0.14
		VOC	0.22	0.01
		PM	0.17	0.01
		PM_{10}	0.17	0.01
		$PM_{2.5}$	0.17	0.01
		SO_2	0.01	<0.01
DT-1	Diesel Fuel Tank	VOC	0.01	<0.01
FUG-NG	Natural Gas Fuel Delivery System (5)	VOC	0.01	0.04
FUG-NH_3	SCR Delivery System (5)	NH_3	0.03	0.13

Emission Sources - Maximum Allowable Emission Rates

MSSFUG	Planned Maintenance Activities (5)	NO_x	<0.01	<0.01
		CO	<0.01	<0.01
		VOC	3.60	0.03
		PM	0.10	0.01
		PM_{10}	0.10	0.01
		$PM_{2.5}$	0.10	0.01
		NH_3	0.42	<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) NO_x - total oxides of nitrogen
CO - carbon monoxide
VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
PM - total particulate matter, suspended in the atmosphere, including PM_{10} and $PM_{2.5}$
PM_{10} - total particulate matter equal to or less than 10 microns in diameter, including $PM_{2.5}$
$PM_{2.5}$ - particulate matter equal to or less than 2.5 microns in diameter
SO_2 - sulfur dioxide
H_2SO_4 - sulfuric acid
NH_3 - ammonia
$(NH_4)_2SO_4$ - ammonium sulfate
(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.

Date: March 24, 2016