

Emission Sources - Maximum Allowable Emission Rates

Permit Number 20041, N196M1, and PSDTX1590

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	
			lb/hour	TPY (4)
TC1	Test Cell 1 Gas fuel firing	NO _x	106.9	-
		CO	84.8	-
		VOC	46.6	-
		PM	5.3	-
		PM ₁₀	5.3	-
		PM _{2.5}	5.3	-
		SO ₂	2.0	-
TC1	Test Cell 1 Liquid fuel firing	NO _x	181.5	-
		CO	88.8	-
		VOC	20.4	-
		PM	15.7	-
		PM ₁₀	15.7	-
		PM _{2.5}	15.7	-
		SO ₂	7.5	-
TC1	Test Cell 1 - Annual Emission Rate Gas and Liquid Fuel Firing	NO _x	-	100.2
		CO	-	27.7
		VOC	-	9.4
		PM	-	10.7
		PM ₁₀	-	10.7
		PM _{2.5}	-	10.7
		SO ₂	-	2.9

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TC2	Test Cell 2 Gas Fuel Firing	NO _x	8.7	-
		CO	18.4	-
		VOC	4.7	-
		PM	0.7	-
		PM ₁₀	0.7	-
		PM _{2.5}	0.7	-
		SO ₂	0.4	-
TC2	Test Cell 2 Liquid Fuel Firing	NO _x	13.0	-
		CO	37.0	-
		VOC	4.7	-
		PM	3.5	-
		PM ₁₀	3.5	-
		PM _{2.5}	3.5	-
		SO ₂	1.5	-
TC2	Test Cell 2 – Annual Emission Rates Gas and Liquid Fuel Firing	NO _x	-	8.7
		CO	-	9.2
		VOC	-	0.9
		PM	-	1.9
		PM ₁₀	-	1.9
		PM _{2.5}	-	1.9
		SO ₂	-	0.8
TC3	Test Cell 3 Gas Fuel Firing	NO _x	80.0	-
		CO	84.8	-
		VOC	13.5	-
		PM	2.5	-
		PM ₁₀	2.5	-
		PM _{2.5}	2.5	-

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		SO ₂	1.1	-
TC3	Test Cell 3 Liquid Fuel Firing	NO _x	120.0	-
		CO	45.6	-
		VOC	7.2	-
		PM	15.7	-
		PM ₁₀	15.7	-
		PM _{2.5}	15.7	-
		SO ₂	4.8	-
TC3	Test Cell 3 – Annual Emission Rates Gas and Liquid Fuel Firing	NO _x	-	35.9
		CO	-	19.4
		VOC	-	1.8
		PM	-	10.7
		PM ₁₀	-	10.7
		PM _{2.5}	-	10.7
		SO ₂	-	2.7
TC4	Test Cell 4 Gas Fuel Firing	NO _x	106.9	-
		CO	84.8	-
		VOC	46.6	-
		PM	5.3	-
		PM ₁₀	5.3	-
		PM _{2.5}	5.3	-
		SO ₂	2.0	-
TC4	Test Cell 4 Liquid Fuel Firing	NO _x	181.5	-
		CO	41.3	-
		VOC	14.3	-
		PM	15.7	-
		PM ₁₀	15.7	-

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		PM _{2.5}	15.7	-
		SO ₂	7.5	-
TC4	Test Cell 4 Gas and Liquid Fuel Firing	NO _x	-	100.2
		CO	-	27.7
		VOC	-	9.4
		PM	-	10.7
		PM ₁₀	-	10.7
		PM _{2.5}	-	10.7
		SO ₂	-	2.9
TC5	Test Cell 5 Gas Fuel Firing	NO _x	192.8	-
		CO	30.0	-
		VOC	8.8	-
		PM	8.5	-
		PM ₁₀	8.5	-
		PM _{2.5}	8.5	-
		SO ₂	3.8	-
TC5	Test Cell 5 Liquid Fuel Firing	NO _x	338.8	-
		CO	30.0	-
		VOC	8.8	-
		PM	12.1	-
		PM ₁₀	12.1	-
		PM _{2.5}	12.1	-
		SO ₂	14.1	-
TC5	Test Cell 5 – Annual Emission Rates Gas and Liquid Fuel Firing	NO _x	-	74.53
		CO	-	25.48
		VOC	-	5.81

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		PM	-	7.49
		PM ₁₀	-	7.49
		PM _{2.5}	-	7.49
		SO ₂	-	4.15
TC6	Test Cell 6 Gas Fuel Firing	NO _x	298.43	-
		CO	26.00	-
		VOC	1.49	-
		PM	4.21	-
		PM ₁₀	4.21	-
		PM _{2.5}	4.21	-
		SO ₂	3.04	-
TC6	Test Cell 6 Liquid Fuel Firing	NO _x	409.53	-
		CO	26.29	-
		VOC	7.50	-
		PM	13.60	-
		PM ₁₀	13.60	-
		PM _{2.5}	13.60	-
		SO ₂	0.35	-
TC6	Test Cell 6 – Annual Emission Rates Gas and Liquid Fuel Firing	NO _x	-	39.78
		CO	-	49.46
		VOC	-	4.03
		PM	-	9.88
		PM ₁₀	-	9.88
		PM _{2.5}	-	9.88
		SO ₂	-	5.24

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TC7	Test Cell 7 Gas Fuel Firing	NO _x	659.34	-
		CO	469.11	-
		VOC	10.69	-
		PM	3.66	-
		PM ₁₀	3.66	-
		PM _{2.5}	3.66	-
		SO ₂	4.92	-
TC7	Test Cell 7 Liquid Fuel Firing	NO _x	989.01	-
		CO	470.11	-
		VOC	10.72	-
		PM	8.22	-
		PM ₁₀	8.22	-
		PM _{2.5}	8.22	-
		SO ₂	0.60	-
TC7	Test Cell 7 – Annual Emission Rates Gas and Liquid Fuel Firing	NO _x	-	11.67
		CO	-	6.44
		VOC	-	0.46
		PM	-	1.62
		PM ₁₀	-	1.62
		PM _{2.5}	-	1.62
		SO ₂	-	1.80

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24.31				
		CO	-	6.04
		VOC	-	0.46
		PM	-	1.53
		PM ₁₀	-	1.53
		PM _{2.5}	-	1.53
		SO ₂	-	1.88
TC7	Test Cell 7 – Annual Emission Rates Gas and Liquid Fuel Firing – 2027 (6)	NO _x	-	49.46
		CO	-	5.84
		VOC	-	0.46
		PM	-	1.72
		PM ₁₀	-	1.72
		PM _{2.5}	-	1.72
		SO ₂	-	1.71
TC7	Test Cell 7 – Annual Emission Rates Gas and Liquid Fuel Firing – 2028 (7)	NO _x	-	58.15
		CO	-	5.74
		VOC	-	0.47
		PM	-	1.72
		PM ₁₀	-	1.72
		PM _{2.5}	-	1.72
		SO ₂	-	1.67

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72.69				
		CO	-	7.17
		VOC	-	0.59
		PM	-	2.15
		PM ₁₀	-	2.15
		PM _{2.5}	-	2.15
		SO ₂	-	2.09
F1	TC1, TC3-5 Process Fugitives (9)	VOC	0.6	0.3
F2	TC2 Process Fugitives (9)	VOC	0.3	0.1
F3	TC6 Process Fugitives (9)	VOC	0.01	0.01
S1	Oil/Water Separator	VOC	0.1	0.3
S2	TC6 Oil/Water Separator	VOC	0.01	0.05
S3	TC7 Oil/Water Separator	VOC	0.01	0.05
CT1	Cooling Tower	VOC	0.08	0.37
		PM	0.60	2.63
		PM ₁₀	0.15	0.66
		PM _{2.5}	0.01	0.03
		Cl ₂	<0.01	<0.01
CT3	Cooling Tower	VOC	0.1	0.4
		PM	0.60	2.63
		PM ₁₀	0.15	0.66
		PM _{2.5}	0.01	0.03
		Cl ₂	<0.01	<0.01

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0.37				
		PM	0.06	0.26
		PM ₁₀	0.02	0.09
		PM _{2.5}	<0.01	<0.01
		Cl ₂	<0.01	<0.01
CT5	TC7 Cooling Tower No. 5	VOC	0.08	0.37
		PM	0.06	0.26
		PM ₁₀	0.02	0.07
		PM _{2.5}	<0.01	<0.01
		Cl ₂	<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) 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 PM₁₀ and PM_{2.5}
- PM₁₀ - 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
- SO₂ - sulfur dioxide
- Cl₂ - chlorine
- (4) Compliance with annual emission limits (tons per year) is based on a 12 month rolling period.
- (5) Emission rates for EPN: TC7 are effective for calendar year 2026, and/or for the subsequent calendar year following approval from TCEQ EBT for the NO_x emission credits
- (6) Emission rates for EPN: TC7 are effective for calendar year 2027, and/or for the subsequent calendar year following approval from TCEQ EBT for the NO_x emission credits
- (7) Emission rates for EPN: TC7 are effective for calendar year 2028, and/or for the subsequent calendar year following approval from TCEQ EBT for the NO_x emission credits
- (8) Emission rates for EPN: TC7 are effective for calendar year 2029 and thereafter, following approval from TCEQ EBT for the NO_x emission credits.
- (9) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.

Date: December 6, 2022