

## Emission Sources - Maximum Allowable Emission Rates

Permit Numbers 19930, PSDTX797M1, PSDTX790, and N174

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)
AV5	Online Analyzer	VOC	0.11	0.43
AV6	Online Analyzer	VOC	0.01	0.03
LO-1	Loading Operations	VOC	3.24	9.04
F9	West Terminal Process Fugitives (5)	VOC	0.65	2.83
F9PDH	PDH Process Fugitives (5)(10)	VOC	0.07	0.31
F-13	North Storage Process Fugitives (5)	VOC	1.86	8.14
F18	Cogen II Process Fugitives (5)	VOC	0.10	0.46
F-19	900 Heat Pump Area Process Fugitives (5)	VOC	0.21	0.92
F-20	800 Butamer Reactor Area Process Fugitives (5)	VOC	0.29	1.25
F-23	700 Deisobutanizer Area Process Fugitives (5)	VOC	0.18	0.80
F-25	Merox Unit Area Process Fugitives (5)	VOC	0.26	1.12
F-26	CSP Unit Area Process Fugitives (5)	VOC	0.07	0.29
F-27	Defluorinator Unit Area Process Fugitives (5)	VOC	0.05	0.20
Case I: Cogen II Turbines Only, Firing Natural Gas (Pre-upgrade)				
20	Cogen II Unit Solar T-4500 Gas Turbine	NO <sub>x</sub> (7)	12.00	32.19
		CO	19.70	24.88
		VOC	0.10	0.44
		PM <sub>10</sub>	0.30	1.23
		SO <sub>2</sub>	0.70	0.28
21	Cogen II Unit Solar T-4500 Gas Turbine	NO <sub>x</sub> (7)	12.00	32.19
		CO	19.70	24.88
		VOC	0.10	0.44

Emission Sources - Maximum Allowable Emission Rates

		PM <sub>10</sub>	0.30	1.23
		SO <sub>2</sub>	0.70	0.28
22	Cogen II Unit Solar T-4500 Gas Turbine	NO <sub>x</sub> (7)	12.00	32.19
		CO	19.70	24.88
		VOC	0.10	0.44
		PM <sub>10</sub>	0.30	1.23
		SO <sub>2</sub>	0.70	0.28
Case II: Cogen II Turbines Firing Natural Gas, and Fired Duct Burner and Heat Recovery Unit (HRU) Firing Natural Gas and/or Additional Fuels as Authorized (6) (Pre-upgrade prior to all three turbines being replaced)				
20/21/22	Cogen II Unit Solar T-4500 Gas Turbines (EPNs 20, 21, and 22),  Duct Burner,  and  Heat Recovery Unit	CO	60.21	79.46
		NO <sub>x</sub> (7)	37.98	105.24
		PM <sub>10</sub>	1.47	5.95
		SO <sub>2</sub>	2.51	1.00
		VOC	0.68	2.10
		HCl (9)	0.18	0.24
Case I: Cogen II Turbines Only, Firing Natural Gas (Post-upgrade)				
20	Solar Centaur 40-4700S	NO <sub>x</sub>	4.78	18.66
		CO	5.82	22.73
		VOC	0.17	0.39
		PM	0.34	1.34
		PM <sub>10</sub>	0.34	1.34
		PM <sub>2.5</sub>	0.34	1.34
		SO <sub>2</sub>	0.73	0.28
21	Solar Centaur 40-4700S	NO <sub>x</sub>	4.78	18.66
		CO	5.82	22.73
		VOC	0.17	0.39
		PM	0.34	1.34
		PM <sub>10</sub>	0.34	1.34
		PM <sub>2.5</sub>	0.34	1.34
		SO <sub>2</sub>	0.73	0.28
22	Solar Centaur 40-4700S	NO <sub>x</sub>	4.78	18.66
		CO	5.82	22.73

Emission Sources - Maximum Allowable Emission Rates

		VOC	0.17	0.39
		PM	0.34	1.34
		PM <sub>10</sub>	0.34	1.34
		PM <sub>2.5</sub>	0.34	1.34
		SO <sub>2</sub>	0.73	0.28
Case II: Cogen II Turbines Firing Natural Gas, and Fired Duct Burner and Heat Recovery Unit (HRU) Firing Natural Gas and/or Additional Fuels as Authorized (6) (Post-upgrade after all three turbines are replaced)				
20/21/22	Solar Centaur 40-4700S (EPNs 20, 21, and 22),  Duct Burner,  and  Heat Recovery Unit	NO <sub>x</sub> (7)	16.32	64.64
		CO	18.56	73.01
		VOC	0.68	1.95
		PM	1.47	5.95
		PM <sub>10</sub>	1.47	5.95
		PM <sub>2.5</sub>	1.47	5.95
		SO <sub>2</sub>	2.51	1.00
		HCl (9)	0.18	0.24
Case I: DIB 900 Turbines Only, Firing Natural Gas				
23	DIB 900 Unit 42.1 million Btu/hr T-4500 Solar Centaur Turbine	CO	48.90	74.70
		NO <sub>x</sub> (8)	33.00	90.30
		PM <sub>10</sub>	0.84	3.66
		PM <sub>2.5</sub>	0.84	3.66
		SO <sub>2</sub>	1.92	0.84
		VOC	0.90	3.93
24	DIB 900 Unit 42.1 million Btu/hr T-4500 Solar Centaur Turbine	CO	48.90	74.70
		NO <sub>x</sub> (8)	33.00	90.30
		PM <sub>10</sub>	0.84	3.66
		PM <sub>2.5</sub>	0.84	3.66
		SO <sub>2</sub>	1.92	0.84
		VOC	0.90	3.93
25	DIB 900 Unit 42.1 million Btu/hr T-4500 Solar Centaur Turbine	CO	48.90	74.70
		NO <sub>x</sub> (8)	33.00	90.30
		PM <sub>10</sub>	0.84	3.66
		PM <sub>2.5</sub>	0.84	3.66
		SO <sub>2</sub>	1.92	0.84
		VOC	0.90	3.93

Emission Sources - Maximum Allowable Emission Rates

Case II: DIB 900 Turbines Firing Natural Gas, and Fired HRU Firing Natural Gas and/or Additional Fuels as Authorized (6)				
23/24/25	DIB 900 42.1 million Btu/hr T-4500 Solar Centaur Turbines (EPNs 23, 24 and 25), and Fired Heat Recovery Unit	CO	159.51	93.21
		NO <sub>x</sub> (8)	129.42	134.70
		PM <sub>10</sub>	7.56	11.07
		PM <sub>2.5</sub>	7.56	11.07
		SO <sub>2</sub>	31.95	34.08
		VOC	8.28	12.09
		HCl (9)	0.18	0.24

- (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<sub>x</sub> - total oxides of nitrogen
- SO<sub>2</sub> - sulfur dioxide
- PM - total particulate matter, suspended in the atmosphere, including PM<sub>10</sub> and PM<sub>2.5</sub>, as represented
- PM<sub>10</sub> - total particulate matter equal to or less than 10 microns in diameter, including PM<sub>2.5</sub>, as represented
- PM<sub>2.5</sub> - particulate matter equal to or less than 2.5 microns in diameter
- CO - carbon monoxide
- HCl - hydrogen chloride
- (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) Emissions from the turbines and each fired HRU comingle when passed through the unfired HRU. Hourly and annual emission rates are based on the turbines running simultaneously at maximum capacity.
- (7) PSDTX789M1 pollutant.
- (8) PSDTX790 pollutant.
- (9) Total hourly HCl emissions from the Cogen II and DIB 900 Units may not exceed 0.18 lbs/hour. Total annual HCl emissions from the Cogen II and DIB 900 Units may not exceed 0.24 TPY.
- (10) Fugitive components represented by this EPN are subject to 28LAER.

Date: January 11, 2019