

# Emission Sources - Maximum Allowable Emission Rates

Permit Number 56389

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)
FUFGR001	FGR System Fugitives – Post LTO Project (5) (7)	VOC	0.71	3.15
		H <sub>2</sub> S	<0.01	<0.01
FUFLRFN	East/West Flares – Natural Gas Line Fugitives	VOC	0.60	2.60
FUBLR002	Boilerhouse No. 2 Fugitives – Post LTO Project (5) (7)	VOC	0.58	2.53
		H <sub>2</sub> S	<0.01	<0.01
FUBLR003	Boilerhouse No. 3 Fugitives – Post LTO Project (5) (7)	VOC	0.46	2.01
		H <sub>2</sub> S	<0.01	<0.01
FUCRU001	Crude Unit Fugitives – Post LTO Project (5) (7)	VOC	11.78	51.61
		H <sub>2</sub> S	0.01	0.05
FUCRUSO2	Crude Heater SCR Fugitives (5)	NH <sub>3</sub>	0.37	1.60
FUREF002	Distillate/Diesel Hydrotreater Fugitives – Post LTO Project (5) (7)	VOC	5.75	25.18
		H <sub>2</sub> S	<0.01	0.01
FUALK001	Alky No. 1 Fugitives – Post LTO Project (5) (7)	VOC	0.59	2.60
		H <sub>2</sub> S	<0.01	<0.01
FUALK002	Alky No. 2 Fugitives – Post LTO Project (5) (7)	VOC	0.59	2.59
		H <sub>2</sub> S	<0.01	<0.01
FUCRY001	LPG Recovery Plant No. 2 Fugitives – Post LTO Project (5) (7)	VOC	3.23	14.16
		H <sub>2</sub> S	<0.01	<0.01
FULTO001	Light Oil Unit Fugitives – Post LTO Project (5) (7)	VOC	4.45	19.52
		H <sub>2</sub> S	<0.01	<0.01
FUDOK001	Dock Fugitives (5)	VOC	0.61	2.68
FUTRR001	LPG Loading Rack Fugitives (5)	VOC	0.43	1.87
FUTKFBLD	Blender Tank Farm Fugitives – Post LTO Project (5) (7)	VOC	8.02	35.10
FUTKFDOK	Dock Tank Farm Fugitives – Post LTO Project (5) (7)	VOC	7.67	33.59
		H <sub>2</sub> S	<0.01	<0.01

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FUTKFP01	No. 1 Pumper Tank Farm Fugitives (5)	VOC	3.56	14.37
FUTKFP02	No. 2 Pumper Tank Farm Fugitives (5)	VOC	4.31	18.88
		H <sub>2</sub> S	0.01	0.01
FUPRK001	OSBL Fugitives (Piperack and Drains) – Post LTO Project (5) (7)	VOC	4.96	21.75
		H <sub>2</sub> S	<0.01	<0.01
FUTKFRB	Red Bluff Tank Farm Fugitives (5)	VOC	4.77	20.89
FUTKFOTH	Tank Farm [other fugitives] (5)	VOC	8.67	0.91
FUBZSTR	Benzene Stripper Unit Fugitives – Post LTO Project (5) (7)	VOC	0.25	1.10
		Benzene	0.01	0.01
		H <sub>2</sub> S	<0.01	<0.01
FEWWS	Wastewater System – Post LTO Project (6) (7)	VOC	2.90	11.19
		Acetone	<0.01	0.01
		NH <sub>3</sub>	0.01	0.05
		H <sub>2</sub> S	0.15	0.61
VTREF001	Reformer No. 3 Catalyst Regenerator Vent	NO <sub>x</sub>	0.01	0.04
		CO	0.37	1.60
		PM	0.04	0.20
		PM <sub>10</sub>	0.04	0.20
		PM <sub>2.5</sub>	0.04	0.20
		HCl	0.09	0.41
		Cl <sub>2</sub>	0.01	0.03
FUREF003	Reformer No. 3 Fugitives – Post LTO Project (5) (7)	VOC	13.24	57.97
		H <sub>2</sub> S	0.02	0.09
FUSRU001	SRU Fugitives – Post LTO Project (5) (7)	VOC	0.05	0.22
		NH <sub>3</sub>	<0.01	<0.01
		H <sub>2</sub> S	<0.01	<0.01
FURSU001	RSU Process Fugitives – Post LTO Project (5) (7)	VOC	1.86	8.14
		H <sub>2</sub> S	<0.01	<0.01
FULSG001	SZORB Fugitive Piping – Post LTO Project (5) (7)	VOC	4.50	19.73
		H <sub>2</sub> S	0.02	0.10
VTLSG001	Regenerator Scrubber Vent	VOC	0.56	2.47

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		NO <sub>x</sub>	0.02	0.08
		SO <sub>2</sub>	2.26	9.88
		SO <sub>3</sub>	0.14	0.62
		CO	2.96	12.97
		H <sub>2</sub> SO <sub>4</sub>	0.52	2.27
		PM	0.86	3.77
		PM <sub>10</sub>	0.86	3.77
		PM <sub>2.5</sub>	0.86	3.77
VTLSG002	Lockhopper Vent, Sorbent Storage Drum Loading, Sorbent Fines Drum Loading	PM	0.20	0.80
		PM <sub>10</sub>	0.20	0.80
		PM <sub>2.5</sub>	0.20	0.80
VTLSG003	Sorbent Fines Drum Unloading	PM	0.01	0.01
		PM <sub>10</sub>	0.01	0.01
		PM <sub>2.5</sub>	0.01	0.01
FUFCC001	Process Fugitives – Post LTO Project (5) (7)	VOC	1.64	7.19
		H <sub>2</sub> S	<0.01	<0.01
FUFGR001	FGR System Fugitives – Pre LTO Project (5) (8)	VOC	0.71	3.15
FUBLR002	Boilerhouse No. 2 Fugitives – Pre LTO Project (5) (8)	VOC	0.58	2.53
FUBLR003	Boilerhouse No. 3 Fugitives – Pre LTO Project (5) (8)	VOC	0.46	2.00
FUCRU001	Crude Unit Fugitives – Pre LTO Project (5) (8)	VOC	11.22	49.16
FUREF002	Distillate/Diesel Hydrotreater Fugitives – Pre LTO Project (5) (8)	VOC	5.68	24.88
FUCRY001	LPG Recovery Plant No. 2 Fugitives – Pre LTO Project (5) (8)	VOC	3.23	14.16
FULTO001	Light Oil Unit Fugitives – Pre LTO Project (5) (8)	VOC	4.30	18.85
FUTKFBLD	Blender Tank Farm Fugitives – Pre LTO Project (5) (8)	VOC	7.27	31.83
FUTKFDOK	Dock Tank Farm Fugitives – Pre LTO Project (5) (8)	VOC	7.45	32.63
FUPRK001	OSBL Fugitives (Piperack and Drains) – Pre LTO Project (5) (8)	VOC	4.94	21.65
FUBZSTR	Benzene Stripper Unit Fugitives – Pre LTO Project (5) (8)	VOC	0.25	1.10
		Benzene	0.01	0.01

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FUREF003	Reformer No. 3 Fugitives – Pre LTO Project (5) (8)	VOC	13.22	57.90
FURSU001	RSU Process Fugitives – Pre LTO Project (5) (8)	VOC	1.86	8.14
FULSG001	SZORB Fugitive Piping – Pre LTO Project (5) (8)	VOC	3.84	16.84
FUALK001	Alky No. 1 Fugitives – Pre LTO Project (5) (8)	VOC	3.80	16.64
		HF	0.07	0.31
FUALK002	Alky No. 2 Fugitives – Pre LTO Project (5) (8)	VOC	4.04	17.71
		HF	0.07	0.31
FUALKDEF	Propane Defluorinator Fugitives – Pre LTO Project (5) (8)	VOC	3.08	13.47
FUDPU001	UDEX Fugitives – Pre LTO Project (5) (8)	VOC	5.19	22.70
FUSRU001	SRU Fugitives – Pre LTO Project (5) (8)	VOC	1.79	7.86
		NH <sub>3</sub>	0.13	0.58
		H <sub>2</sub> S	0.79	3.42
FUFCC001	Process Fugitives – Pre LTO Project (5) (8)	VOC	7.51	32.86
FEWWS	Wastewater System – Pre LTO Project (6) (8)	VOC	6.16	19.50
		Acetone	0.01	0.01
		NH <sub>3</sub>	0.04	0.19
		H <sub>2</sub> S	0.52	2.29
INSRU001	Tail Gas Incinerator – Pre LTO Project (8)	VOC	0.05	0.22
		NO <sub>x</sub>	2.18	9.55
		SO <sub>2</sub>	7.29	31.93
		PM	0.25	1.10
		PM <sub>10</sub>	0.25	1.10
		PM <sub>2.5</sub>	0.25	1.10
		H <sub>2</sub> S	0.16	0.70
		CO	15.96	69.90
		H <sub>2</sub> SO <sub>4</sub>	1.03	4.51

- (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

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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
NH <sub>3</sub>	- ammonia
HF	- hydrogen fluoride
H <sub>2</sub> S	- hydrogen sulfide
Cl <sub>2</sub>	- chlorine
SO <sub>3</sub>	- sulfur trioxide
H <sub>2</sub> SO <sub>4</sub>	- sulfuric acid

- (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) The Wastewater System includes all sources of wastewater at the refinery through the wastewater pipe leaving the site to the off-site wastewater treatment facility.
- (7) Post LTO Project emission rates shall be applicable upon startup of the LTO project represented in the permit amendment applications dated June 15, 2021 (TCEQ Project Nos. 330179, 330180, 330181, and 330182).
- (8) Pre LTO Project emission rates (current authorized emissions) are void upon startup of the project represented in the permit amendment applications dated June 15, 2021 (TCEQ Project Nos. 330179, 330180, 330181, and 330182).

Date: July 15, 2022