Emission Sources - Maximum Allowable Emission Rates

Permit Number 9402 and N022

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)
FCC-10	2nd Molsieve Flash Dryer	VOC	0.07	0.26
		NO_X	1.94	6.87
		SO_2	< 0.01	0.03
		PM	0.41	1.45
		PM_{10}	0.41	1.45
		$PM_{2.5}$	0.41	1.45
		CO	1.13	4.02
FCC-11	Reslurry Tank Bag Filter	PM	0.04	0.16
		PM_{10}	0.04	0.16
		$PM_{2.5}$	0.04	0.16
FCC-12	2nd Molsieve Calciner	VOC	0.03	0.12
		NO_X	0.69	3.01
		SO_2	< 0.01	0.01
		PM	0.04	0.16
		PM_{10}	0.04	0.16
		$PM_{2.5}$	0.04	0.16
		CO	0.40	1.76
FCC-14	Rare Earth Chloride Storage Tank	HCl	< 0.01	< 0.01
FCC-15	Ammonia Scrubber	NH_3	0.17	0.75
FCC-16	Portaclay/Reslurry Vent Bay Filter	PM	0.02	0.11
		PM10	0.02	0.11
		PM2.5	0.02	0.11

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FCC-19	Kaolin Dosing Hopper Bag Filter 2	PM	0.26	1.16
		PM_{10}	0.26	1.16
		$PM_{2.5}$	0.26	1.16
FCC-20	C Alumina Storage Silo Bag Filter	PM	0.11	0.48
		PM_{10}	0.11	0.48
		$PM_{2.5}$	0.11	0.48
FCC-21	Spray Dryer Bag Filter	VOC	1.05	4.22
		NO_X	13.51	54.49
		SO_2	0.11	0.46
		PM	7.91	31.54
		PM_{10}	7.91	31.54
		$PM_{2.5}$	7.91	31.54
		CO	15.98	64.43
		NH_3	5.00	21.90
		HNO_3	7.50	32.85
FCC-23	Separator Fines Bag Filter	PM	0.33	1.31
		PM_{10}	0.33	1.31
		$PM_{2.5}$	0.33	1.31
FCC-27	FCC Boiler	VOC	0.53	2.33
		NO_X	3.57	15.61
		SO_2	0.06	0.25
		PM	0.73	3.22
		PM_{10}	0.73	3.22
		$PM_{2.5}$	0.73	3.22
		CO	8.11	35.54
FCC-34	Ammonia Absorber	NH_3	0.68	2.98

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FCC-40	Kaolin Unloading Bag Filter	PM	0.11	0.24
		PM_{10}	0.11	0.24
		$PM_{2.5}$	0.11	0.24
FCC-41	Sulfuric Acid Storage Tank	H_2SO_4	< 0.01	< 0.01
		SO_3	< 0.01	< 0.01
FCC-44	Ammonia Storage Tank/Scrubber	NH_3	0.19	0.04
FCC-46	Ammonia Scrubber	NH_3 (6)	0.07	0.31
		HCl	< 0.01	< 0.01
FCC-51	Crude Product Bag Filter	PM	0.07	0.28
		PM_{10}	0.07	0.28
		$PM_{2.5}$	0.07	0.28
FCC-52	Crude Product Bag Filter	PM	0.07	0.28
		PM_{10}	0.07	0.28
		$PM_{2.5}$	0.07	0.28
FCC-53	Crude Product Collecting Hopper Bag Filter	PM	0.01	0.06
		PM_{10}	0.01	0.06
		$PM_{2.5}$	0.01	0.06
FCC-54	Crude Product Dosing Hopper Bag Filter	PM	0.03	0.11
		PM_{10}	0.03	0.11
		$PM_{2.5}$	0.03	0.11
FCC-55	Ventilation Air Bag Filter	PM	0.01	0.05
		PM_{10}	0.01	0.05
		$PM_{2.5}$	0.01	0.05
FCC-58	Product Dist. Conveyor Bag Filter	PM	0.22	0.96
		PM_{10}	0.22	0.96
		$PM_{2.5}$	0.22	0.96

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FCC-61	Product Air Slide Bag Filter I (7)	PM	0.07	0.32
		PM_{10}	0.07	0.32
		$PM_{2.5}$	0.07	0.32
FCC-62	Product Air Slide Bag Filter II	PM	0.08	0.36
		PM_{10}	0.08	0.36
		$PM_{2.5}$	0.08	0.36
FCC-63	Weigh Scale Bag Filter	PM	0.38	1.66
		PM_{10}	0.38	1.66
		$PM_{2.5}$	0.38	1.66
FCC-64	Blended Product Bag Filter	PM	0.28	1.24
		PM_{10}	0.28	1.24
		$PM_{2.5}$	0.28	1.24
FCC-65	Bulk Loading Station Bag Filter	PM	0.28	1.21
		PM_{10}	0.28	1.21
		$PM_{2.5}$	0.28	1.21
FCC-66	Portable Bag Filter	PM	0.09	0.19
		PM_{10}	0.09	0.19
		$PM_{2.5}$	0.09	0.19
FCC-68	Kaolin Silo Bag Filter	PM	0.11	0.46
		PM_{10}	0.11	0.46
		$PM_{2.5}$	0.11	0.46
FCC-69	C Alumina Dosing Bag Filter	PM	0.14	0.61
		PM_{10}	0.14	0.61
		$PM_{2.5}$	0.14	0.61
FCC-70	BOC Silo Bag Filter	PM	0.14	0.60
		PM_{10}	0.14	0.60
		$PM_{2.5}$	0.14	0.60
FCC-71	BOC Dosing Bag Filter	PM	0.21	0.46
		PM_{10}	0.21	0.46

Emission Sources - Maximum Allowable Emission Rates

		$PM_{2.5}$	0.21	0.46
FCC-74	Final Product Calciner II (9)	VOC	0.19	0.82
		NO_X (NA)	2.31	10.12
		SO_2	0.02	0.09
		PM	0.26	1.14
		PM_{10}	0.26	1.14
		$PM_{2.5}$	0.26	1.14
		CO	2.87	12.56
FCC-75	TO/SCR System	VOC	0.03	0.13
		NO_X (NA)	3.00	13.14
		SO_2	0.74	0.66
		PM	0.04	0.18
		PM_{10}	0.04	0.18
		$PM_{2.5}$	0.04	0.18
		CO	0.45	1.97
		N_2O	27.18	119.03
		NH_3	0.34	1.48
FCC-76	Product Air Slide Bag Filter	PM	0.19	0.83
		PM_{10}	0.19	0.83
		$PM_{2.5}$	0.19	0.83
FCC-77	Storage Silo Bag Filter	PM	0.12	0.51
		PM_{10}	0.12	0.51
		$PM_{2.5}$	0.12	0.51

Emission Sources - Maximum Allowable Emission Rates

FCC-79	Diesel Engine II (8)	VOC	0.06	0.03
		NO_X	1.74	0.87
		SO_2	0.30	0.15
		PM	0.16	0.08
		PM_{10}	0.16	0.08
		$PM_{2.5}$	0.16	0.08
		CO	1.19	0.60
FCC-80	Portable Bag Filter II	PM	0.09	0.19
		PM_{10}	0.09	0.19
		$PM_{2.5}$	0.09	0.19
FCC-81	Tote Bin Bag Filter	PM	0.02	0.09
		PM_{10}	0.02	0.09
		$PM_{2.5}$	0.02	0.09
FCC-82	Portable Bag Filter	PM	0.09	0.19
		PM_{10}	0.09	0.19
		$PM_{2.5}$	0.09	0.19
FCC-100	HCS Filter Cake Tank	HNO_3	< 0.01	< 0.01
FCC-102A	Final Product Silo Baghouse	PM	< 0.01	< 0.01
		PM_{10}	< 0.01	< 0.01
		$PM_{2.5}$	< 0.01	< 0.01
FCC-109	Intermediate Silo Baghouse	PM	0.10	0.43
		PM_{10}	0.10	0.43
		$PM_{2.5}$	0.10	0.43
FCC-110	Intermediate Bag Unloading	PM	0.08	0.36
		PM_{10}	0.08	0.36
		$PM_{2.5}$	0.08	0.36
FCC-112	Truck Loading Baghouse	PM	< 0.01	< 0.01
		PM_{10}	< 0.01	< 0.01
		$PM_{2.5}$	< 0.01	< 0.01

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FCC-113	Portaclay Unloading Baghouse	PM	< 0.01	< 0.01
		PM_{10}	< 0.01	< 0.01
		$PM_{2.5}$	< 0.01	< 0.01
FCC-FUG	Fugitives (5)	HNO_3	0.01	0.05
		NH_3	0.02	0.09
		HCl	0.01	0.04
		H_2SO_4	0.03	0.13
PERMITWIDE	Permit Wide	NO_X	-	81.00

(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
HCl - Hydrogen Chloride
NH_3 - Ammonia
HNO_3 - Nitric Acid
H_2SO_4 - Sulfuric Acid
SO_3 - Sulfur Trioxide
N_2O - Nitrous Oxide
(NA) - Nonattainment Review
(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) Total emissions of ammonia plus ammonium hydroxide.
(7) PM, PM_{10}, and $PM_{2.5}$ emissions will happen from either FCC-61 or FCC-76, but not both.
(8) Emissions are based on 1,000 hours per year operation.
(9) Final Product Calciner II may be routed through either EPN FCC-74 or EPN FCC-21.

Date: December 9, 2019