

EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Permit No. 9626

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. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

AIR CONTAMINANTS DATA

| Emission * | Source | Air Contaminant | <u>Emission Rates</u> | |
|----------------------|--------------------------|-----------------|-----------------------|------------|
| <u>Point No. (1)</u> | <u>Name (2)</u> | <u>Name (3)</u> | <u>lb/hr</u> | <u>TPY</u> |
| FCC-3A | Feed Hopper Bag Filter | PM | <0.1 | 0.2 |
| FCC-5A | Calciner | VOC | 0.46 | 2.02 |
| | | NO _x | 1.85 | 8.09 |
| | | SO ₂ | 0.01 | 0.04 |
| | | PM | 0.08 | 0.34 |
| | | CO | 0.54 | 2.36 |
| FCC-8 | Flash Dryer Bag Filter | VOC | 0.05 | 0.22 |
| | | NO _x | 1.39 | 6.08 |
| | | SO ₂ | 0.01 | 0.03 |
| | | PM | 1.0 | 4.4 |
| | | CO | 0.19 | 0.85 |
| FCC-9 | Molsieve Calciner | VOC | 0.03 | 0.11 |
| | | NO _x | 0.69 | 3.01 |
| | | SO ₂ | <0.01 | <0.01 |
| | | PM | 0.02 | 0.11 |
| | | CO | 0.10 | 0.42 |
| FCC-9A | Final Product Bag Filter | PM | 1.6 | 7.2 |
| FCC-10 | Flash Dryer Bag Filter | VOC | 0.05 | 0.22 |
| | | NO _x | 1.39 | 6.08 |
| | | SO ₂ | <0.01 | 0.03 |
| | | PM | 1.0 | 4.4 |
| | | CO | 0.19 | 0.85 |

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| Emission * Point No. (1) | Source Name (2) | Air Contaminant Name (3) | Emission Rates | |
|--------------------------------|---------------------------------------|--|---|--------------------------------|
| | | | lb/hr | TPY |
| FCC-11 | Reslurry Tank Bag Filter | PM | 0.3 | 1.2 |
| FCC-11A | Calciner Scrubber | NH ₃ PM <0.10 | 2.4 <0.10 | 10.5 |
| FCC-12 | Molsieve Calciner | VOC NO _x SO ₂ PM 0.02 CO 0.10 | 0.03 0.69 <0.01 0.11 0.42 | 0.11 3.01 0.01 |
| FCC-14 | HCl Scrubber | HCl | <0.10 | <0.10 |
| FCC-15 | Ammonia Scrubber | NH ₃ | 1.96 | 8.58 |
| FCC-16 | Portaclay/Reslurry Bag Filter 0.24 | | PM | 0.05 |
| FCC-17 | Sulfuric Acid Storage Tank | H ₂ SO ₄ SO ₃ | <0.01 <0.01 | <0.01 <0.01 |
| FCC-18 | Strike Tanks Vent | PM ₁₀ | 0.46 | 0.63 |
| FCC-19 | Kaolin Dosing Bag Hopper | PM 0.3 | 1.3 | |
| FCC-20 | Kaolin Silo Bag Filter | PM ₁₀ | 0.26 | 0.28 |
| FCC-21 | Spray Dryer Scrubbers (Five) | VOC NO _x SO ₂ PM ₁₀ CO 3.81 | 0.34 15.80 0.04 12.92 16.70 | 1.50 69.40 0.30 56.60 |
| 21.1-21.3 | Crude Product Bag Filter | PM 0.1 | 0.6 | |

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|--------------------------------|-------------------------------------|-------------------------------------|------------------|-------|
| | | | lb/hr | TPY |
| FCC-23 | Separator Fines Bag Filter | PM | 0.2 | 0.8 |
| FCC-27 | Steam Boiler | VOC | 0.2 | 0.8 |
| | | NO _x | 7.3 | 32.2 |
| | | SO ₂ | <0.1 | 0.2 |
| | | PM 0.3 | 1.3 | |
| | | CO 2.1 | 9.4 | |
| FCC-34 | Ammonia Absorber | NH ₃ | <0.01 | 0.03 |
| FCC-40 | Kaolin Unloading Bag Filter 0.19 | | PM ₁₀ | 0.13 |
| FCC-41 | Sulfuric Acid Storage Tank | H ₂ SO ₄ | <0.01 | <0.01 |
| | | SO ₃ | <0.01 | <0.01 |
| FCC-42 | Filter Hoods Vent (5) | NH ₃ | 0.08 | 0.35 |
| FCC-43 | Ammonium Chloride Tank (5) | NH ₃ | <0.01 | 0.02 |
| RDL-1 | Spray Dryer No. 1 (6) | PM ₁₀ | 0.46 | 0.93 |
| | | SiO ₂ (4) | <0.01 | <0.01 |
| | | Na ₂ SO ₄ (4) | 0.06 | 0.12 |
| | | NO _x | 0.77 | 1.54 |
| | | CO 1.11 | 2.22 | |
| | | formic acid | 0.09 | 0.19 |
| | | Other VOC | 0.01 | 0.01 |
| | | SO ₂ | <0.01 | <0.01 |
| RDL-2 | Spray Dryer No. 2 (6) | PM ₁₀ (4) | 0.46 | 0.93 |
| | | SiO ₂ (4) | <0.01 | <0.01 |
| | | Na ₂ SO ₄ (4) | 0.06 | 0.12 |
| | | NO _x | 0.77 | 1.54 |
| | | CO 1.11 | 2.22 | |

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| Emission * Point No. (1) | Source Name (2) | Air Contaminant Name (3) | Emission Rates | |
|--------------------------------|----------------------|-------------------------------------|----------------|-------|
| | | | lb/hr | TPY |
| | | formic acid | 0.09 | 0.19 |
| | | Other VOC | 0.01 | 0.01 |
| | | SO ₂ | <0.01 | <0.01 |
| RDL-3 | Ammonia Scrubber | PM ₁₀ (4) | 0.46 | 0.70 |
| | | SiO ₂ (4) | <0.01 | <0.01 |
| | | Na ₂ SO ₄ (4) | 0.02 | 0.03 |
| | | NO _x | 3.96 | 2.97 |
| | | NH ₃ | 0.04 | 0.03 |
| RDL-5 | Steam Boiler | PM ₁₀ | <0.01 | 0.01 |
| | | NO _x | 0.05 | 0.20 |
| | | CO <0.01 | 0.04 | |
| | | VOC | <0.01 | 0.01 |
| | | SO ₂ | <0.01 | <0.01 |
| RDL-6 | Caustic Scrubber (6) | PM ₁₀ (4) | 0.09 | 0.19 |
| | | SiO ₂ (4) | <0.01 | <0.01 |
| | | Na ₂ SO ₄ (4) | 0.01 | 0.02 |
| | | NO _x | 1.54 | 3.08 |
| | | CO 4.92 | 9.83 | |
| | | formic acid | 0.08 | 0.16 |
| | | Other VOC | 0.01 | 0.02 |
| | | SO 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) PM - particulate matter
PM₁₀ - particulate matter less than 10 microns
VOC - volatile organic compounds as defined in General Rule 101.1
NO_x - total oxides of nitrogen
SO₂ - sulfur dioxide
CO - carbon monoxide

NH₃ - ammonia
HCl - hydrochloric acid
H₂SO₄ - sulfuric acid
SiO₂ - silicon oxide (crystalline quartz)
Na₂SO₄ - sodium sulfate
SO₃ - sulfur trioxide

Permit No. 9626
Page 5

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- (4) Overall PM₁₀ emission rates include SiO₂ and Na₂SO₄ emission rates.
- (5) Emission points incorporated into permit from Standard Exemption Registration No. 26870.
- (6) Emissions from Spray Dryer Nos. 1 and 2 can be vented through the Caustic Scrubber depending upon process conditions.

* Emission rates are based on and the facilities are limited by the following maximum operating schedule:

8,760 Hrs/year

Dated_____