

Calculations for Allowable Emissions

October 19, 2021

Allowable PM

Proposed limit of 0.16 lb/hr PM Based on 1200-03-07-.01(5)

$0.16 \text{ lb/hr} \times 4700 \text{ hrs/yr} = 752 \text{ lb/yr} = 0.376 \text{ tons PM/yr allowable}$ Calculations from application indicate 0.16 lb PM/hr

Emission factor of 7.6 lbs. PM/MMSCF natural gas
combusted from AP-42, Chapter 1.4 Natural Gas
Combustion, table number 1.4-2

Allowable SO₂

Under 1200-03-14-.01(2) Madison County is a Class VI County

1200-03-14-.03(3) sets SO₂ limit of 2000 ppm, however there is no stack associated with this process, exhausting to the interior of the building

1200-03-14-.03(5) sets new sources shall utilize the best available control technology as deemed appropriate

For this source, the actual SO₂ emission rate at 0.0127 lb/hr would be set at the allowable (round to 0.02 lb/hr and 0.05 tons/yr at 4700 hrs/yr)

Emission factor of 0.6 lbs. SO₂/MMSCF natural gas combusted from AP-42, Chapter 1.4 Natural Gas Combustion, table number 1.4-2

Allowable CO Emissions

1.78 lb CO/hr actual from application -

$1.78 \text{ lb CO/hr} \times 4,700 \text{ hrs/yr} = 8,366 \text{ lb CO/yr} = 4.18 \text{ ton/yr}$ based on requested 4700 hr/yr limit

Set 4.18 tons/12 months allowable CO based on 1200-03-07-.07(2)

Emission factor of 84 lbs. CO/MMSCF natural gas combusted from AP-42, Chapter 1.4 Natural Gas
Combustion, table number 1.4-1

Allowable VOC Emissions

0.12 lb/hr VOC from company calculations

$0.12 \text{ lb actual VOC/hr} \times 4,700 \text{ hrs/yr by A/L} = 564 \text{ lb VOC/yr} = 0.28 \text{ tons/yr maximum}$

Set 0.28 tons/12 months allowable VOC based on 1200-03-07-.07(2)

Emission factor of 5.5 lbs. VOC/MMSCF natural gas combusted from AP-42, Chapter 1.4 Natural Gas Combustion, table number 1.4-2

Allowable NO_x Emissions

2.12 lb/hr NO_x emissions from application and allowable from 10.15.2021 agreement

2.12 lb/hr NO_x x 8760 hrs = 9.28 tons NO_x/yr maximum

5 tons NO_x per year requires low-NO_x technology for burners

4.98 tons/yr from October 15, 2021 agreement by company

2.12 lb NO_x/hr x 4,700 hrs of operation = 9,964 lb NO_x/yr = 4.98 tons NO_x/yr allowed at 4700 hrs

Emission factor of 100 lbs. NO_x/MMSCF natural gas combusted from AP-42, Chapter 1.4 Natural Gas Combustion, table number 1.4

HAP emissions- negligible

Under 1200-03-14-.01(2) Madison County is a Class VI County

September 20 2021