

Maximum Uncontrolled Emissions

* Agreement letter for PM limitation of 0.45 lb/hr and SO2 limit of 15.97 lb/hr
*Dated May 23, 2000

Source No.	Emission Unit	Emission Source	Information Provided by Facility				PM		PM ₁₀		SO ₂		CO		VOC		NO _x	
			Design Input (lbs./hr.)	Design Input (tons/hr.)	Flow Rate (cfm)	Design Heat Input (MMBtu/hr.)	lbs./hr.	tons/yr.	lbs./hr.	tons/yr.	lbs./hr.	tons/yr.	lbs./hr.	tons/yr.	lbs./hr.	tons/yr.	lbs./hr.	tons/yr.
01	Boiler	21 MMBtu/hr. Natural Gas-Fired Boiler w/#2 BU	--	--	--	21.00	0.16	0.69	--	--	0.01	0.05	1.73	7.57	0.11	0.50	3.00	13.14
	Boiler	10.5 MMBtu/hr. Natural Gas-Fired Boiler w/#2 BU	--	--	--	10.50	0.08	0.34	--	--	0.01	0.03	0.86	3.79	0.06	0.25	1.50	6.57
02	Sanitation	Sanitation Shift	--	--	--	--	--	--	--	--	--	--	--	--	0.27	1.17	--	--
03	Live Hang Lines	Live Hang Lines	--	--	--	--	--	4.47	--	--	--	--	--	--	--	--	--	--
04	Intervention tanks	Intervention	--	--	--	--	--	--	--	--	--	--	--	--	--	4.81	--	--
05	Cooling Towers	2 Cooling Towers	--	--	--	--	0.08	0.35	--	--	--	--	--	--	--	--	--	--
06	HVAC Units	Evapco Make-up unit	--	--	--	2.66	0.02	0.09	--	--	0.00	0.01	0.22	0.96	0.01	0.06	0.26	1.14
07	Odorizing system	Odorizing system	--	--	--	--	--	--	--	--	--	--	--	--	0.06	0.26	--	--
TOTAL EMISSIONS:							0.33	5.94	0.00	0.00	0.02	0.09	2.81	12.32	0.51	7.06	4.76	20.85

Controlled Emissions

Source No.	Emission Unit	Emission Source	Information Provided by Facility				PM		PM ₁₀		SO ₂		CO		VOC		NO _x	
			Design Input (lbs./hr.)	Design Input (tons/hr.)	Flow Rate (cfm)	Design Heat Input (MMBtu/hr.)	lbs./hr.	tons/yr.	lbs./hr.	tons/yr.	lbs./hr.	tons/yr.	lbs./hr.	tons/yr.	lbs./hr.	tons/yr.	lbs./hr.	tons/yr.
01	Boiler	21 MMBtu/hr. Natural Gas-Fired Boiler w/#2 BU	--	--	--	21.00	0.16	0.69	--	--	0.01	0.05	1.73	7.57	0.11	0.50	3.00	13.14
	Boiler	10.5 MMBtu/hr. Natural Gas-Fired Boiler w/#2 BU	--	--	--	10.50	0.08	0.34	--	--	0.01	0.03	0.86	3.79	0.06	0.25	1.50	6.57
TOTAL EMISSIONS:							0.23	1.03	0.00	0.00	0.02	0.08	2.59	11.36	0.17	0.74	4.50	19.71

Allowable PM Emissions

Source No.	Emission Unit	Emission Source	Information Provided by Facility				Calculations Based on TN APC Chapter 7: Process Emission Standards Regulations				Controlled Potential PM		Uncontrolled Potential PM		Allowable Limits		
			Design Input (lbs./hr.)	Design Input (tons/hr.)	Flow Rate (cfm)	Design Heat Input (MMBtu/hr.)	PWR Table 2 (lbs./hr.)	0.02 gr./dscf (lbs./hr.)	0.25 gr./dscf (lbs./hr.)	Emission per Chapter 7 Rules (lbs./hr.)	lbs./hr.	tons/yr.	lbs./hr.	tons/yr.	Allowable (lbs./hr.)	Operating Hours	Allowable (tpy)
01	Boiler	21 MMBtu/hr. Natural Gas-Fired Boiler w/#2 BU	--	--	--	21.00	Non process subject to chapter 6				0.16	0.69	0.16	0.69	8.34	8760	36.52
	Boiler	10.5 MMBtu/hr. Natural Gas-Fired Boiler w/#2 BU	--	--	--	10.50	Non process subject to chapter 6				0.08	0.34	0.08	0.34	6.13	8760	26.85
TOTAL EMISSIONS:											0.23	1.03	0.23	1.03	14.47		63.37

Allowable SO2 Emissions

Source No.	Emission Unit	Emission Source	Information Provided by Facility				TN APC Chapter 14: Control of Sulfur Dioxide Emissions			Controlled Potential SO2		Uncontrolled Potential SO2		Allowable Limits		
			Design Input (lbs./hr.)	Design Input (tons/hr.)	Flow Rate (cfm)	Design Heat Input (MMBtu/hr.)	Emission per Chapter 14 Rules (lbs./hr.)			lbs./hr.	tons/yr.	lbs./hr.	tons/yr.	Allowable (lbs./hr.)	Operating Hours	Allowable (tpy)
01	Boiler	21 MMBtu/hr. Natural Gas-Fired Boiler w/#2 BU	--	--	--	21.00	105.00					0.01	0.05	105.00	8760	459.90
	Boiler	10.5 MMBtu/hr. Natural Gas-Fired Boiler w/#2 BU	--	--	--	10.50	52.50					0.01	0.03	52.50	8760	229.95
TOTAL EMISSIONS:										0.00	0.00	0.02	0.08	157.50		689.85

Permitted Emissions

Source No.	Emission Unit	Emission Source	Information Provided by Facility				[Limit (tpy)] / [Design Input (tons/hr.)] (hrs./yr.)	Actual = Controlled Potential PM		Facility Agreed Upon Permitted Limits											
			Design Input (lbs./hr.)	Design Input (tons/hr.)	Max. Annual Throughput (tons/yr.)	Throughput Restriction (tons/yr.)		lbs./hr.	tons/yr.	PM (lbs./hr.)	PM (tons/yr.)	PM ₁₀ (lbs./hr.)	PM ₁₀ (tons/yr.)	SO ₂ (lbs./hr.)	SO ₂ (tons/yr.)	CO (lbs./hr.)	CO (tons/yr.)	VOC (lbs./hr.)	VOC (tons/yr.)	NOX (lbs./hr.)	NOX (tons/yr.)
01	Boiler	21 MMBtu/hr. Natural Gas-Fired Boiler w/#2 BU	--	--	--	--	--			0.75	3.29	--	--	0.05	0.22	2.59	11.34	0.17	0.74	4.50	19.71
	Boiler	10.5 MMBtu/hr. Natural Gas-Fired Boiler w/#2 BU	--	--	--	--	--														
TOTAL EMISSIONS:								0.00	0.00	0.75	3.29	0.00	0.00	0.05	0.22	2.59	11.34	0.17	0.74	4.50	19.71

Source 01: NG-Fired Boiler #3

Potential Operating Hours: 8,760 hrs./yr.

Heat Input Rate: 31.500 MMBtu/hr. [Application dated January 25, 2023]

Fuel Oil Usage: 225

Sulfur Content: 0.0015 % [Letter dated March 6, 2024]

Date Constructed: 2001 [Application dated July 2, 2013]

*Low Nox not specified

Allowable Emissions**PM**

TAPCR 1200-03-06-.02(2)(a): Non-process particulate, "New" design

$$E = 0.600 \left(\frac{10}{Q} \right)^{0.5566} = 25.4916$$

Q = 31.500 MMBtu/hr

E = 0.317 lb/MMBtu

$$\text{PM (lbs./hr.)} = [E \text{ (lb/MMBtu)}] \times [\text{Heat Input Capacity (MMBtu/hr.)}] = 9.98 \text{ lbs./hr.}$$

$$\text{PM (tons/yr.)} = \frac{[\text{PM}_{\text{allow.}} \text{ (lbs./hr.)}] \times [\text{Potential Hours (hrs./yr.)}]}{2000 \text{ lbs./ton}} = 43.71 \text{ ton/yr.}$$

SO₂

TAPCR 1200-03-14-.02(2)(a)

Class VI County 5.0 lbs. / MMBtu

$$\text{SO}_2 \text{ (lbs./hr.)} = [\text{Emission Standard (lbs./MMBtu)}] \times [\text{Heat Input Capacity (MMBtu/hr.)}] = 157.5 \text{ lbs./hr.}$$

$$\text{SO}_2 \text{ (ton/yr.)} = \frac{[\text{SO}_{2\text{allow.}} \text{ (lbs./hr.)}] \times [\text{Potential Hours (hrs./yr.)}]}{2000 \text{ lbs./ton}} = 689.85 \text{ ton/yr.}$$

Potential Emissions

Pollutant		MMBtu/hr.		lb./MMBtu		lbs./hr.		hr./yr.		lbs./ton		ton/yr.
PM	=	31.500	x	0.00745098	=	0.23	x	8,760	/	2,000	=	1.03
SO ₂	=	31.500	x	0.000588235	=	0.0185	x	8,760	/	2,000	=	0.081
CO	=	31.500	x	0.082352941	=	2.59	x	8,760	/	2,000	=	11.36
VOC	=	31.500	x	0.005392157	=	0.17	x	8,760	/	2,000	=	0.74
NO _x	=	31.500	x	0.098039216	=	3.09	x	8,760	/	2,000	=	13.53

AP 42, Chapter 1.4: Natural Gas Combustion

Tables 1.4-1 and 1.4-2

Pollutant	Emission Factor (lbs./ 10 ⁶ scf)		Coverison Factor (Btu/ft ³)	Emission Factor (lbs./MMBtu)
PM	7.6	/	1020	0.00745098
SO ₂	0.6	/	1020	0.000588235
CO	84	/	1020	0.082352941
VOC	5.5	/	1020	0.005392157
NO _x	100	/	1020	0.098039216

Potential Emissions (Assuming #2 Fuel Oil)

Pollutant		MMBtu/hr.		lb./MMBtu		lbs./hr.		hr./yr.		lbs./ton		ton/yr.
PM	=	31.500	x	0.023571429	=	0.74	x	8,760	/	2,000	=	3.25
SO ₂	=	31.500	x	0.001521429	=	0.0479	x	8,760	/	2,000	=	0.210
CO	=	31.500	x	0.035714286	=	1.13	x	8,760	/	2,000	=	4.93
VOC	=	31.500	x	0.001428571	=	0.05	x	8,760	/	2,000	=	0.20
NO _x	=	31.500	x	0.142857143	=	4.50	x	8,760	/	2,000	=	19.71

AP 42, Chapter 1.3: Fuel Oil Combustion

Tables 1.3-1 and 1.3-2

Pollutant	Emission Factor (lbs./ 10 ³ gal)		Coverison Factor (MMBtu/10 ³ gal)	Emission Factor (lbs./MMBtu)
SO ₂	0.213	/	140	0.001521429
NO _x	20	/	140	0.142857143
CO	5	/	140	0.035714286
PM (filterable)	2	/	140	0.014285714
PM (condensable)	1.3	/	140	0.009285714
VOC	0.2	/	140	0.001428571

Koch Foods
32-0215 8/30/2023

Source 02: Sanitation *Needs insig activity letter
Source 07: Odorizing System *Needs insig activity letter

Potential Operating Hours: 8,760 hrs./yr.
Actual Operating Hours: hrs./yr.

Max Input rate: See table below [Additional information dated December 14, 2023]
Average Input rate: See table below

Flow rate: 12800 cfm [Additional information dated December 14, 2023]

Control device: Building
Control efficiency: 50 % [Additional information dated December 14, 2023]

Date Constructed:

Allowable Emissions

PM

TAPCR 1200-03-07

Not applicable

SO₂

TAPCR 1200-03-14

Class VI County

Not Applicable

Potential Emissions

Emission Rate [Actual throughput determined from data of actual usage]
[Potential throughput determined from extrapolation of actual usage assuming 5840 hrs/yr as actual and 8760 hrs/yr as potential]
["Emission Factor" determined by VOC content of chemical on SDS]

State Reg	Emission source	Material Input	Actual Throughput		Potential throughput		Emission factor (VOC Content)	Units	Pollutant type	Actual		Potential	
										Emission Rate (lbs./hr)	Emission Rate (tons/year)	Emission Rate (lbs./hr)	Emission Rate (tons/year)
1200-03-09-.04(4)(d)2	Odorizing system	Aulick ROX-92	415	gal/yr	622.5	gal/yr	6.98%	of Products is VOC	VOC	0.027	0.118199844	0.040	0.177
			8.161	lbs/gal	8.161	lbs/gal			HAP	0.000	0	0.000	0.000
	Odor Treatment Chemical	Zee Company Odor Out	220	gal/yr	330	gal/yr	6.25%	of Products is VOC	VOC	0.013	0.057371875	0.020	0.086
			8.345	lbs/gal	8.345	lbs/gal			HAP	0.000	0	0.000	0.000
	Sanitation chemical	Zee Company Acid Sanitizer	184	gal/yr	276	gal/yr	0.15	lb/gal	VOC	0.003	0.0138	0.005	0.021
			9.722	lbs/gal	9.722	lbs/gal			HAP	0.000	0	0.000	0.000
	Sanitation chemical	Zee Company ProLube	156	gal/yr	234	gal/yr	6.25%	of Products is VOC	VOC	0.008	0.036411375	0.012	0.055
			7.469	lbs/gal	7.469	lbs/gal			HAP	0.000	0	0.000	0.000
	Sanitation chemical	Zee Company DuoQuat	116	gal/yr	174	gal/yr	12.50%	of Products is VOC	VOC	0.014	0.06019675	0.021	0.090
			8.303	lbs/gal	8.303	lbs/gal			HAP	0.000	0	0.000	0.000
	Sanitation chemical	Zee Company ProSOLV	2050	gal/yr	3075	gal/yr	3.75%	of Products is VOC	VOC	0.075	0.328794375	0.113	0.493
			8.554	lbs/gal	8.554	lbs/gal			HAP	0.000	0	0.000	0.000
	Sanitation	Zee Company	220	gal/yr	330	gal/yr	12.50%	of Products is VOC	VOC	0.027	0.11875875	0.041	0.178

	chemical	ProTEC	8.637	lbs/gal	8.637	lbs/gal			HAP	0.000	0	0.000	0.000
	Water Treatment Chemical	Zee Company Biocide One	120	gal/yr	180	gal/yr	1.63%	of Products is VOC	VOC	0.002	0.00839124	0.003	0.013
			8.58	lbs/gal	8.58	lbs/gal			HAP	0.000	0	0.000	0.000
	Water Treatment Chemical	Zee Company BLR 40	225	gal/yr	337.5	gal/yr	20%	of Products is VOC	VOC	0.038	0.1680525	0.058	0.252
			7.469	lbs/gal	7.469	lbs/gal			HAP	0.000	0	0.000	0.000
	Water Treatment Chemical	Zee Company Tower 1	150	gal/yr	225	gal/yr	6.25%	of Products is VOC	VOC	0.011	0.047920313	0.016	0.072
			10.223	lbs/gal	10.223	lbs/gal			HAP	0.000	0	0.000	0.000

Sanitation				
	Actual		Potential	
	Emission Rate (lbs./hr)	Emission Rate (tons/year)	Emission Rate (lbs./hr)	Emission Rate (tons/year)
VOC	0.179	0.782325303	0.268	1.173487954
HAP	0	0	0	0

Odor system				
	Actual		Potential	
	Emission Rate (lbs./hr)	Emission Rate (tons/year)	Emission Rate (lbs./hr)	Emission Rate (tons/year)
VOC	0.040	0.175571719	0.060	0.263357578
HAP	0	0	0	0

Koch Foods
32-0215 8/30/2023

Source 03: Live Hang Lines		*Needs insig activity letter
Potential Operating Hours:	8,760 hrs./yr.	
Actual Operating Hours:	5840 hrs./yr.	
Max Input rate:	1.034 lbs/hr	[Additional information dated December 14, 2023]
Average Input rate:	1.024	[submitted emissions data from one week assuming 8760 hr operation 365 days a week]
Control device:	Building Baghouse	
Control efficiency:	50 %	[Additional information dated December 14, 2023]
	99 %	[Additional information dated December 14, 2023]
Date Constructed:		

Allowable Emissions

PM
TAPCR 1200-03-07-.03(1): Process particulate, "New" design
 $E = 3.59(P)^{0.62}$

P = 0.001 tons/hr
E = 0.033 Lbs./hr

PM (lbs./hr.) = E (lb/hr) = 0.03 lbs./hr.

PM (tons/yr.) = $\frac{[PM_{allow.} (lbs./hr.)] \times [Potential\ Hours\ (hrs./yr.)]}{2000\ lbs./ton}$ = 0.15 ton/yr.

SO₂
TAPCR 1200-03-14
Class VI County

Not Applicable

Potential Emissions

Emission Rate
(Emissions provided by Facility)

Actual		Potential	
(lbs.hr)	(tons/year)	(lbs.hr)	(tons/year)
0.01	0.0292	0.52	2.2776

	Actual Throughput		Potential Throughput		Estimated Actual Annual Operating Hours	Max Operating Hours	Emission Factor	Units	Pollutant type	Emissions Control	Control device efficiency	Actual		Potential	
	Emission Rate (lbs/hr)	Emission Rate (tons/year)	Emission Rate (lbs/hr)	Emission Rate (tons/year)								Emission Rate (lbs/hr)	Emission Rate (tons/year)	Emission Rate (lbs/hr)	Emission Rate (tons/year)
Live Hang Lines	1.024	lbs/hr PM collected	1.024	lbs/hr PM collected		8760	See Note		PM	Building	50/99%	0.01	0.03	0.52	2.26
	1.034	lbs/hr PM total	1.034	lbs/hr PM total	5840										

PM collected over 1 week
172 lbs [determined by data from one week]

(Permit writer calculations)
Annual emissions
E = (172 lbs/week) * (52 weeks/year)
8944 lbs/year
4.472 tons/year *Insignificant

Source 04: Intervention

Potential Operating Hours: 8,760 hrs./yr.
Actual Operating Hours: 5840 hrs./yr.

Whole bird dip tank: 100 gallons *[Email dated January 4, 2024]*
Pre-Chiller 15000 gallons ^
Mid-Chiller 30000 gallons ^
Final Chiller 45000 gallons ^
wing dip 1 25 gallons ^
wing dip 2 25 gallons ^

AFCO Perasafe 23

Annual usage: 53,460.000 gal/yr *[Additional information dated December 14, 2023]*
Specific gravity: 1.130
Density 9.413 lbs/gal
Annual usage: 503213.634 lbs/yr

Flow rate: 12800 cfm *[Additional information dated December 14, 2023]*

Control device: Building
Control efficiency: 50 % *[Additional information dated December 14, 2023]*

Date Constructed:

Allowable Emissions**PM**

TAPCR 1200-03-07

Not applicable

SO₂

TAPCR 1200-03-14

Class VI County

Not Applicable

Potential Emissions

(Permit writer calculations)

Density of water 8.33 lbs/gal

	Weight %	Usage (lbs/yr)	Usage (tons/yr)
Acetic Acid	40	201285.4536	100.6427268
Peroxyacetic Acid	24	120771.2722	60.38563608

Emission Factor 0.12 lbs/gal
Actual Emissions 6415.2 lbs./yr 3.2076 tons/yr
Potential Emissions 9622.8 lbs./yr **4.8114** tons/yr

*[*Using Hillshire EF as a conservative estimate, and a factor of 1.5 for potential emissions.]*

Emission factor (based on Koch foods calcs) 0.015140824 lbs/gal

*[*Estimated Emissions divided by actual usage of AFCO Perasafe 23.]*

Ratio between Emission factors
7.925592499

Emission Calculations from facility *[*Letter dated December 14, 2023]*

Constants

528 Rankine
1 atm
0.7302 (ft³ * atm/(R * lb-mol))

Temp
pressure
R

PAA Concentration	0.15 ppm	[Based on data taken near baths]	
ACGIH TLV	0.4 ppm	[American Conference of Governmental Industrial Hygienists - Threshold limit value for safe concentrations]	
PPA airflow volume	0.1152 ft ³ /hr		
Molar Mass (PAA)	76.0514 lb-mass/lb-mol		
mol fraction [n]	0.0002988 lb-mol /hr	[PV = nRT]	n = PV/RT 0.000298797
PAA Emissions	0.022724158 lb-mass / hr		

Acetic Acid Concentration	0.58 ppm	[Highest of recorded values]	
Airflow V	0.44544 ft ³ /hr		
Molar Mass	60.052 lb-mass/lb-mol		
mol fraction [n]	0.00115535 lb-mol /hr	[PV = nRT]	n = PV/RT
Acetic Acid Emissions	0.069381061 lbs/hr		

Total VOC	0.09210522 lbs/hr	0.403420862 tons/year
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PAA Vents (2)

Fan ventilation	25 scfm		
Airflow Volume	1500 ft ³ /hr		
PAA concentration	0.54 ppm		
PAA Airflow V	0.00081 ft ³ /hr		
PAA Molar Mass	76.0514 lb-mass/lb-mol		
mol fraction [n]	2.10092E-06 lb-mol /hr	[PV = nRT]	n = PV/RT

PAA Emissions	0.000159778 lbs/hr
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Acetic Acid Concentration	0.58 ppm		
Airflow Volume	0.00087 ft ³ /hr		
Molar Mass	60.052 lb-mass/lb-mol		
mol fraction [n]	2.25654E-06 lb-mol /hr	[PV = nRT]	n = PV/RT

Acetic Acid Emissions	0.00013551 lbs/hr
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Total VOCs	0.000295288 lbs/hr 0.00129336 tons/year
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Max Combined	0.092400507 lbs./hr
	0.404714222 tons/year

Koch Foods

32-0215

8/30/2023

Source 05: Cooling Tower

Exemption Rule: 1200-03-09-.04(5)(f)15

Potential Operating Hours: 8,760 hrs./yr.

Actual Operating Hours: 8760 hrs./yr.

Flow rate: 1,600.000 gpm
800,640.000 lbs/hr*[Additional information dated December 14, 2023]*1600 gal
min1.7 lbs
gal2720 lbs
min163200 lbs
hr

Control device: Drift Eliminator

Drift Rate 0.005 %

[AP-42 Chapter 13.4 - Wet Cooling Towers]

Drift Rate (actual) 0.001 %

[manufacturer specs]

Max TDS: 1000 ppm

[Additional information dated December 14, 2023]

Date Constructed:

Potential Emissions

Emission Rate

Facility Calculations

[Additional information letter dated December 14, 2023]

PM (lbs./hr) = [Flow rate (gal/min)] * [60 min/hr] * [drift rate (%) / 100] * [TDS (ppm) / 1000000 parts] * [8.34 lbs water/gal water]

Per Tower	Facility Calculations	Writer Calculations
PM actual	0.008 lbs./hr	0.0080064 lbs./hr
PM actual	0.03504 tons/yr	0.035068032 tons/yr
PM potential	0.4 lbs./hr	0.040032 lbs./hr
PM potential	1.752 tons/yr	0.17534016 tons/yr

Per facility	Facility Calculations	Writer Calculations
PM actual	0.016 lbs./hr	0.0160128 lbs./hr
PM actual	0.07008 tons/yr	0.070136064 tons/yr
PM potential	0.08 lbs./hr	0.080064 lbs./hr
PM potential	0.3504 tons/yr	0.35068032 tons/yr

Source 06: HVAC Units Exemption Rule: 1200-03-09-.04(5)(g)2

Potential Operating Hours: 8,760 hrs./yr.

*Make-up air unit

Heat Input Rate: 2.025 MMBtu/hr. [Additional information dated December 14, 2023]

Date Constructed:

*Low Nox not specified

Allowable Emissions

PM

TAPCR 1200-03-06-.02(2)(a): Non-process particulate, "New" design

$$E = 0.600 \left(\frac{10}{Q} \right)^{0.5566}$$

Q = 2.025 MMBtu/hr

E = 1.459 lb/MMBtu

$$\text{PM (lbs./hr.)} = [E \text{ (lb/MMBtu)}] \times [\text{Heat Input Capacity (MMBtu/hr.)}] = \underline{\underline{2.96 \text{ lbs./hr.}}}$$

$$\text{PM (tons/yr.)} = \frac{[\text{PM}_{\text{allow.}} \text{ (lbs./hr.)}] \times [\text{Potential Hours (hrs./yr.)}]}{2000 \text{ lbs./ton}} = \underline{\underline{12.94 \text{ ton/yr.}}}$$

SO₂

TAPCR 1200-03-14-.02(2)(a)

Class VI County 5.0 lbs. / MMBtu

$$\text{SO}_2 \text{ (lbs./hr.)} = [\text{Emission Standard (lbs./MMBtu)}] \times [\text{Heat Input Capacity (MMBtu/hr.)}] = \underline{\underline{10.125 \text{ lbs./hr.}}}$$

$$\text{SO}_2 \text{ (ton/yr.)} = \frac{[\text{SO}_{2\text{allow.}} \text{ (lbs./hr.)}] \times [\text{Potential Hours (hrs./yr.)}]}{2000 \text{ lbs./ton}} = \underline{\underline{44.35 \text{ ton/yr.}}}$$

Potential Emissions (Assuming NG)

Pollutant		MMBtu/hr.		lb./MMBtu		lbs./hr.		hr./yr.		lbs./ton		ton/yr.
PM	=	2.025	x	0.00745098	=	0.02	x	8,760	/	2,000	=	0.07
SO ₂	=	2.025	x	0.000588235	=	0.0012	x	8,760	/	2,000	=	0.005
CO	=	2.025	x	0.082352941	=	0.17	x	8,760	/	2,000	=	0.73
VOC	=	2.025	x	0.005392157	=	0.01	x	8,760	/	2,000	=	0.05
NO _x	=	2.025	x	0.098039216	=	0.20	x	8,760	/	2,000	=	0.87

AP 42, Chapter 1.4: Natural Gas Combustion

Tables 1.4-1 and 1.4-2

Pollutant	Emission Factor (lbs./10 ⁶ scf)		Coverison Factor (Btu/ft ³)	Emission Factor (lbs./MMBtu)
PM	7.6	/	1020	0.00745098
SO ₂	0.6	/	1020	0.000588235
CO	84	/	1020	0.082352941
VOC	5.5	/	1020	0.005392157
NO _x	100	/	1020	0.098039216

* Nox EF for uncontrolled

Source 06: HVAC Units Exemption Rule: 1200-03-09-.04(5)(g)2

Potential Operating Hours: 8,760 hrs./yr.

Heat Input Rate: 0.415 MMBtu/hr. [Additional information dated December 14, 2023] *Makeup unit
0.115 MMBtu/hr. [Additional information dated December 14, 2023] *Comfort unit
0.108 MMBtu/hr. [Additional information dated December 14, 2023] *Comfort unit

Date Constructed:

*Low Nox not specified

Allowable Emissions

PM

TAPCR 1200-03-06-.02(2)(a): Non-process particulate, "New" design

$$E = 0.600 \left(\frac{10}{Q} \right)^{0.5566}$$

Q = 0.415 MMBtu/hr
E = 3.527 lb/MMBtu

$$\text{PM (lbs./hr.)} = [E \text{ (lb/MMBtu)}] \times [\text{Heat Input Capacity (MMBtu/hr.)}] = 1.46 \text{ lbs./hr.}$$

$$\text{PM (tons/yr.)} = \frac{[\text{PM}_{\text{allow.}} \text{ (lbs./hr.)}] \times [\text{Potential Hours (hrs./yr.)}]}{2000 \text{ lbs./ton}} = 6.41 \text{ ton/yr.}$$

SO₂

TAPCR 1200-03-14-.02(2)(a)

Class VI County 5.0 lbs. / MMBtu

$$\text{SO}_2 \text{ (lbs./hr.)} = [\text{Emission Standard (lbs./MMBtu)}] \times [\text{Heat Input Capacity (MMBtu/hr.)}] = 2.075 \text{ lbs./hr.}$$

$$\text{SO}_2 \text{ (ton/yr.)} = \frac{[\text{SO}_{2\text{allow.}} \text{ (lbs./hr.)}] \times [\text{Potential Hours (hrs./yr.)}]}{2000 \text{ lbs./ton}} = 9.09 \text{ ton/yr.}$$

Potential Emissions (Assuming NG)

Pollutant		MMBtu/hr.		lb./MMBtu		lbs./hr.		hr./yr.		lbs./ton		ton/yr.
PM	=	0.415	x	0.00745098	=	0.00	x	8,760	/	2,000	=	0.01
SO ₂	=	0.415	x	0.000588235	=	0.0002	x	8,760	/	2,000	=	0.001
CO	=	0.415	x	0.082352941	=	0.03	x	8,760	/	2,000	=	0.15
VOC	=	0.415	x	0.005392157	=	0.00	x	8,760	/	2,000	=	0.01
NO _x	=	0.415	x	0.098039216	=	0.04	x	8,760	/	2,000	=	0.18

Pollutant		MMBtu/hr.		lb./MMBtu		lbs./hr.		hr./yr.		lbs./ton		ton/yr.
PM	=	0.115	x	0.00745098	=	0.00	x	8,760	/	2,000	=	0.00
SO ₂	=	0.115	x	0.000588235	=	0.0001	x	8,760	/	2,000	=	0.000
CO	=	0.115	x	0.082352941	=	0.01	x	8,760	/	2,000	=	0.04
VOC	=	0.115	x	0.005392157	=	0.00	x	8,760	/	2,000	=	0.00
NO _x	=	0.115	x	0.098039216	=	0.01	x	8,760	/	2,000	=	0.05

Pollutant		MMBtu/hr.		lb./MMBtu		lbs./hr.		hr./yr.		lbs./ton		ton/yr.
PM	=	0.108	x	0.00745098	=	0.00	x	8,760	/	2,000	=	0.00
SO ₂	=	0.108	x	0.000588235	=	0.0001	x	8,760	/	2,000	=	0.000
CO	=	0.108	x	0.082352941	=	0.01	x	8,760	/	2,000	=	0.04
VOC	=	0.108	x	0.005392157	=	0.00	x	8,760	/	2,000	=	0.00
NO _x	=	0.108	x	0.098039216	=	0.01	x	8,760	/	2,000	=	0.05

AP 42, Chapter 1.4: Natural Gas Combustion

Tables 1.4-1 and 1.4-2

Pollutant	Emission Factor (lbs./10 ⁶ scf)		Coverison Factor (Btu/ft ³)	Emission Factor (lbs./MMBtu)
PM	7.6	/	1020	0.00745098
SO ₂	0.6	/	1020	0.000588235
CO	84	/	1020	0.082352941
VOC	5.5	/	1020	0.005392157
NO _x	100	/	1020	0.098039216

* Nox EF for uncontrolled