

ALLEGHENY COUNTY HEALTH DEPARTMENT AIR QUALITY PROGRAM

September 10, 2026

SUBJECT: U. S. Steel Corporation, Irvin Plant
Camp Hollow Road
West Mifflin, PA 15122

Allegheny County

Installation Permit No. 0050-I010

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FACILITY DESCRIPTION

The U. S. Steel Mon Valley Works - Irvin Plant is a secondary steel processing facility located in West Mifflin Borough, Allegheny County, Pennsylvania. The USS - Irvin Plant receives steel slabs and performs one of several finishing processes on the steel slabs. The finishing processes, commonly referred to as secondary steel processes, include hot and cold rolling, continuous pickling, annealing, and galvanizing. The facility is composed of an 80" hot strip mill, 64" and 84" continuous hydrochloric acid pickle lines, a cold reduction mill, HPH annealing furnaces, open coil annealing furnaces, a continuous annealing furnace, continuous galvanizing line No. 1, continuous galvanizing, and aluminum coating line No. 2, four coke oven gas flares, and four natural gas/coke oven gas fired boilers.

The facility is a major source of nitrogen oxides (NO_x), carbon monoxide (CO), particulate matter, particulate matter < 10 microns in diameter (PM₁₀), sulfur dioxide (SO₂), volatile organic compounds (VOCs) and hazardous air pollutants (HAPs) as defined in section 2101.20 of Article XXI.

INSTALLATION DESCRIPTION

This permit is for the installation of a 97.7 MMBtu/hr, natural gas and coke oven gas fired steam boiler to replace the existing boilers No.3 & No.4. The boiler will be used to supply steam to support the steel finishing processes. The boiler will be supplied with low-NO_x burners and flue gas recirculation (FGR) for control of nitrogen oxides.

The installation resulted in the following potential emissions changes, in tons per year:

Table 1

Pollutant	Boiler No. 5 (Future Emissions) (tons/year)	Net Emissions Changes (tons/year)
PM	4.59	2.49
PM ₁₀	3.29	4.77
PM _{2.5}	2.50	4.18
PM-condensable	2.99	4.18
NO _x	15.39	-0.8
SO _x	52.37	39.97
CO	15.49	10.94
VOC	1.52	1.22

PERMIT APPLICATION COMPONENTS:

1. Installation Permit Application No. 0050-I010, dated May 1, 2026

EMISSION SOURCES:

Table 2
Emissions Sources

I.D.	SOURCE DESCRIPTION	CONTROL DEVICE(S)	MAXIMUM CAPACITY	FUEL/RAW MATERIAL	STACK I.D.
B005	Steam Boiler	LNBS and FGR	97.7 MMBtu/Hr	Coke Oven Gas and Natural Gas	SB5

METHOD OF DEMONSTRATING COMPLIANCE:

Compliance with the emission standards set in this permit will be demonstrated by conducting stack testing, recording the Steam Boiler No. 5 operating hours, monitoring the amount and type of fuel combusted, conduct annual tune up and record and report the fuel combusted and results of the tune up. See Permit No. 0050-I010 for the specific conditions for determining compliance with the applicable requirements.

REGULATORY APPLICABILITY:

1. Article XXI Requirements for Issuance:

See Permit Application No. 0050-I010, Section 5: Applicable Requirements. The requirements of Article XXI, Parts B and C for the issuance of minor modification installation permits have been met for this facility. Article XXI, Part D, Part E & Part H will have the necessary sections addressed individually.

§2105.48 (Areas Subject to §2105.40 through §2105.47): U.S. Steel - Irvin Plant is located outside of the area specified in Article XXI, Section 2105.48.a. Therefore, the requirements of Article XXI, Sections §2105.40 through §2105.47, do not apply to this source.

2. BACT Analysis:

The facility has conducted a BACT analysis for PM, NO_x, SO_x, CO and VOC emissions from the operation of steam boiler No. 5. The top-ranked option, Low NO_x Burners and flue gas recirculation (FGR) with an effective NO_x emission rate of 0.036 lb/MMBtu has been selected as BACT for NO_x for CO.

Good combustion practices and combusting pipeline quality natural gas and low sulfur coke oven gas have been selected as BACT for PM, SO_x, and VOC.

A complete BACT analysis is provided in Section 3 of the application.

3. Testing Requirements:

A one-time compliance testing for Boiler No. 5 for NO_x, SO_x and CO is required within 60 days after achieving full production or 120 days after the boiler's startup, whichever is earlier.

The Department reserves the right to require additional emission testing, if necessary in the future, to ensure compliance with the terms and conditions of Installation Permit No. 0050-I010.

4. New Source Review/Prevention of Significant Deterioration (NSR/PSD):

The facility is a major source of PM, NO_x, SO_x, CO, VOC, and H₂S as defined in §52.21(b)(1)(i)(A). Therefore, this installation must be evaluated for non-attainment NSR and PSD. NSR pollutants include ozone (NO_x and VOC); PSD pollutants are NO₂, SO_x (as SO₂), PM_{2.5}, and CO.

Baseline actual emissions (BAE) for Boiler 3 and Boiler 4 were based on §52.21(b)(48)(ii). The time period chosen was from October 2020 through September 2022.

Based on the net emissions changes between the proposed Boiler No. 5 emission limits ("future emissions") and the decrease in emissions from the existing Boilers No. 3 & No. 4 shown in Table 3 below, the projected emissions increase for all regulated PSD/NSR pollutants are below the applicable Significant Emission Rate (SER) thresholds as defined in 40 CFR §52.21(b)(23)(i). Therefore, the project does not constitute a significant emissions increase under Step 1 of the PSD applicability test.

As a result, Step 2 (netting) which evaluates contemporaneous emissions increases and decreases at the source is not required for PSD pollutants. This is consistent with the two-step applicability process outlined in 40 CFR §52.21(a)(2)(iv)(F) & (G).

According to 25 Pa. Code §127.203a(a)(2), Step 2 to account for contemporaneous period is still required for NSR pollutants even if the emissions increase from a project does not exceed the listed applicable emissions rate that is significant.

A review of permitting activity indicates that there were no installation permits issued during the contemporaneous period (May 2016 – May 2026) that would result in an emissions increase or decrease. Therefore, no further analysis is required for Prevention of Significant Deterioration (PSD) or New Source Review (NSR) pollutants.

Table 3
PSD/NSR Step 1 Evaluation

Pollutant**	Boiler No. 5 (Future Emissions) (tons/year)	Baseline Actual Emissions (from Boilers No. 3 & 4) (tons/year)*	Net Emission Changes	PSD Significant Threshold/ NNSR	PSD/NSR Threshold (tpy)	Subject to PSD/NSR
PM	4.59	2.10	2.49	PSD	25	NO
PM ₁₀	6.28	1.51	4.77	PSD	15	NO
PM _{2.5}	5.48	1.30	4.18	PSD	10	NO
NO _x /NO ₂	15.39	16.19	-0.8	PSD/NNSR (precursor)	40	NO
SO _x	52.37	12.40	39.97	PSD/NNSR	40	NO
CO	15.49	4.55	10.94	PSD	100	NO
VOC	1.52	0.30	1.22	NNSR	40	NO

*A baseline period of October 2020 through September 2022 was used for this analysis

**PM₁₀ & PM_{2.5} include both filterable and condensable.

5. **New Source Performance Standards (NSPS):**

- **40 CFR Part 60, Subpart D: Standards of Performance for Fossil-Fuel-Fired Steam Generators.** Steam boiler No.5 is not applicable to this rule because it applies to fossil fuel-fired steam generating units with a heat input rating greater than 250 MMBtu/hr that commenced construction or reconstruction after August 7, 1971. The proposed boiler is not greater than 250 MMBtu/hr.
- **40 CFR Part 60, Subpart Da: Standards of Performance for Electric Utility Steam Generating Units.** This subpart is not applicable to the proposed Boiler 5 because it is not an electric generating unit.
- **40 CFR Part 60, Subpart Db: Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units.** This subpart is not applicable to the proposed Boiler No.5 because it only applies to steam generating units that commence construction, modification, or reconstruction after June 19, 1984, and have a heat input capacity greater than 100 MMBtu/hr. The proposed Boiler is less than 100 MMBtu/hr.

- **40 CFR Part 60, Subpart Dc: Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units.** This subpart is applicable to the proposed Boiler No.5 because construction commenced after June 9, 1989, and has a heat input capacity greater than or equal to 10 MMBtu/hr and less than 100 MMBtu/hr. This includes, but is not limited to, the following sections:

- **40 CFR §60.48c(g)(1)** – Maintain records of the amount of each fuel combusted.
- **40 CFR §60.48c(i)** – Maintain records of fuel consumption for a period of two (2) years.
- **40 CFR §60.48c(j)** – Report records of fuel consumption semi-annually.
- **40 CFR §60.48c(a)** – Report notification of the date of construction and actual startup.

6. **NESHAP and MACT Standards:**

- **40 CFR Part 63, Subpart DDDDD: National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters.** This rule is applicable to the proposed boiler, including the following section:
 - **40 CFR §63.7540(a)(10):** Requires the facility to conduct tune-up and keep records of the results

7. **Risk Management Plan; CAA Section 112(r):**

No materials stored at the facility meet the threshold for CAA §112(r). Therefore, the facility is not subject to CAA §112(r).

8. **Greenhouse Gas Reporting (40 CFR Part 98):**

U.S. Steel Corporation – Irvin Plant is a major source of greenhouse gas (CO₂) emissions. However, the Greenhouse Gas (GHG) reporting rules under 40 CFR Part 98 are not considered applicable requirements under the Title V regulations at this time. Therefore, there are presently no greenhouse gas requirements at the facility.

EMISSIONS CALCULATIONS:

Steam Boiler

Emission calculations for PM, PM₁₀, PM_{2.5}, NO_x, CO, SO_x and VOC are based on vendor specific emission factors and converted based on fuel/heat requirements.

Table 4
Natural Gas Boiler Emissions

Pollutant	Emissions Factor		Source**	Short-Term Emissions (lb/hr)	Long-Term Emissions (tons/yr)*	Long-Term Emissions (tons/yr)** *
PM	2.1	lb/MMscf	AP-42 Table	0.20	0.24	0.9
PM ₁₀	2.1	lb/MMscf		0.20	0.24	0.9
PM _{2.5}	2.1	lb/MMscf		0.20	0.24	0.9
PM _{condensable}	6.56	lb/MMscf		0.60	0.71	2.62

Pollutant	Emissions Factor		Source**	Short-Term Emissions (lb/hr)	Long-Term Emissions (tons/yr)*	Long-Term Emissions (tons/yr)** *
SO _x	0.69	lb/MMscf	Vendor Guarantee	0.06	0.07	0.28
VOC	6.33	lb/MMscf		0.57	0.68	2.53
NO _x	0.036	lb/MMBtu		3.52	4.14	15.4
CO	0.036	lb/MMBtu		3.54	4.17	15.5

*A year is defined as any consecutive 12-month period. Emissions represented are reflective of COG and NG combustion blend.

**the AP-42 emission factors include 15% variability.

*** Emissions are reflective of 100% natural gas combustion.

Table 5
Coke Oven Gas Boiler Emissions

Pollutant	Emissions Factor		Source	Short-Term Emissions (lb/hr)	Long-Term Emissions (tons/yr)*
PM	7.13	lb/MMscf	FIRE v6.25	1.36	4.35
PM ₁₀	5.00	lb/MMscf		0.96	3.06
PM _{2.5}	3.70	lb/MMscf		0.71	2.26
PM _{condensable}	3.74	lb/MMscf	ACME Steel Staff Correspondence (Sep-1997)	0.71	2.26
NO _x	0.036	lb/MMBtu	Vendor Guarantee	3.52	11.25
CO	0.036	lb/MMBtu	Vendor Guarantee	3.54	11.33
SO _x	85.63	lb/MMscf	Mass balance**	11.94	52.29
VOC	1.38	lb/MMscf	FIRE v6.25	0.19	0.84

*A year is defined as any consecutive 12-month period.

**based on coke oven gas grain loading of 30 gr/100 scf COG (30 gr/100 scf × 64/32.1/7000*1000000). MW of SO₂ = 64 & MW of sulfur = 32.065

Example Calculation:**Boiler Information**

		Potential Throughput*	Potential Throughput (Natural Gas Firing Only)**
Capacity:	97.7 MMBtu/hr	855,852 MMBtu/yr	855,852 MMBtu/yr
Operating Hours	8760	-	-
Natural Gas Capacity	-	230,000 MMBtu/yr	855,852 MMBtu/yr
Coke Oven Gas Capacity	-	625,000 MMBtu/yr	-
NG High Heating Value	1,069 Btu/scf	-	-
COG Higher Heating Value	511.7 Btu/ scf	-	-
Natural Gas Combustion		215 MMscf/yr	801 MMscf/yr
Coke Oven Gas Combustion		1,221 MMscf/yr	-

*Coke oven gas accounts for approximately 73% of the boiler's total fuel throughput, while natural gas accounts for 27%. Natural gas combustion = (230,000 MMBtu/yr × scf/1,069 Btu)

Coke oven gas combustion = (625,000 MMBtu/yr × scf/511.7 Btu)

** Throughputs represent No. 5 Boiler firing only on natural gas.

NO_x Emissions (using manufacturer guarantee):

NO_x = 97.7 MMBtu/hr × 0.036 lb/MMBtu = **3.52 lb/hr**

NO_x (NG) = 0.036 lb/MMBtu × 1,069 Btu/scf × 215 MMscf/yr ÷ 2,000 lb/ton = **4.14 ton/yr**

NO_x (COG) = 0.036 lb/MMBtu × 511.7 Btu/scf × 1,221 MMscf/yr ÷ 2,000 lb/ton = **11.25 ton/yr**

Total NO_x = 15.39 ton/yr

GHG Mass and CO₂e Emissions:

GHG emissions from the boiler is not included in the mandatory greenhouse gas reporting rule. Therefore, estimated emissions are included here for informational purposes only.

Total rated heat input capacity of the boiler = 97.7 MMBtu/hr × 8,760 hr/yr = 855,852 MMBtu/yr

NG High Heating values (HHV) = 1,069 Btu/ft³

COG High Heating values (HHV) = 511.7 Btu/ft³

Emission Factors from 40 CFR 98 Subpart C, Table C1 & C2:

	Natural Gas	Coke Oven Gas
CO₂	53.06 kg/MMBtu	46.85 kg/MMBtu
N₂O	0.0001 kg/MMBtu	1.0 × 10 ⁻⁰⁴ kg/MMBtu
CH₄	0.001 kg/MMBtu	4.8 × 10 ⁻⁰⁴ kg/MMBtu

Natural Gas Fuel:

CO₂: 215 MMscf/yr × 1,069 Btu/scf × 53.06 kg/MMBtu ÷ 1,000 kg/metric ton = 12,195.05 metric tons/yr

NO₂: 215 MMscf/yr × 1,069 Btu/scf × 1×10⁻⁴ kg/MMBtu ÷ 1,000 kg/metric ton = 0.023 metric tons/yr

CH₄: 215 MMscf/yr × 1,069 Btu/scf × 1×10⁻³ kg/MMBtu ÷ 1,000 kg/metric ton = 0.23 metric tons/yr

$\text{CO}_2\text{e} = (12,195.05 \times 1) + (0.023 \times 265) + (0.23 \times 28) = \mathbf{12,208.12 \text{ metric tons/year of CO}_2\text{e}}$
 $= \mathbf{13,457.14 \text{ tpy of CO}_2\text{e}}$
 $\text{CO}_2\text{e for the steam boiler} = \mathbf{13,457.14 \text{ tpy of CO}_2\text{e}}$

Coke Oven Gas Fuel :

$\text{CO}_2: 1,221 \text{ MMscf/yr} \times 511.7 \text{ Btu/scf} \times 46.85 \text{ kg/MMBtu} \div 1,000 \text{ kg/metric ton} =$
 $29,031.48 \text{ metric tons/yr}$
 $\text{NO}_2: 1,221 \text{ MMscf/yr} \times 511.7 \text{ Btu/scf} \times 1 \times 10^{-4} \text{ kg/MMBtu} \div 1,000 \text{ kg/metric ton} = 0.063 \text{ metric tons/yr}$
 $\text{CH}_4: 1,221 \text{ MMscf/yr} \times 511.7 \text{ Btu/scf} \times 4.8 \times 10^{-4} \text{ kg/MMBtu} \div 1,000 \text{ kg/metric ton} = 0.30 \text{ metric tons/yr}$

$\text{CO}_2\text{e} = (29,031.48 \times 1) + (0.063 \times 265) + (0.30 \times 28) = \mathbf{29,056.10 \text{ metric tons/year of CO}_2\text{e}}$
 $= \mathbf{32,028.87 \text{ tpy of CO}_2\text{e}}$

The total CO_2e from the Boiler = $13,457.14 + 32,028.87 = \mathbf{45,486.01 \text{ tpy of CO}_2\text{e metric tons.}}$

$45,486.01 \times 1.10 = \mathbf{50,0034.61 \text{ tons}}$

See Appendix A for the emissions calculation details

EMISSIONS SUMMARY:

Boiler No 6
Emission Limitations Summary

POLLUTANT**	ANNUAL EMISSION LIMIT (tons/year)*
PM	4.59
PM ₁₀	6.28
PM _{2.5}	4.54
Nitrogen Oxides (NO _x)	15.39
Sulfur Oxides (SO _x)	52.37
Carbon Monoxide (CO)	15.49
Volatile Organic Compounds (VOC)	1.52
Greenhouse Gases (CO ₂ e)	50,0034.61

*A year is defined as any consecutive 12-month period.

**PM₁₀ & PM_{2.5} include both filterable & condensable PM.

RECOMMENDATION:

All applicable Federal, State, and County regulations have been addressed in the permit application.

The facility is not subject to the restrictions of §2102.04.k of Article XXI because there have been no Notices of Violation issued for this facility in Allegheny County during the last 18 months. The installation permit for the U.S. Steel – Irvin should be approved with the emission limitations and terms & conditions in Installation Permit No. 0050-I010.

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APPENDIX A

[Emission spreadsheets and tables in this Appendix are from the Installation Permit Application for the Proposed Boiler No. 5 Project, May 2026]

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Table 7 Production Data

Company Name:	U. S. Steel Corp.								
Site Name:	Irvin Plant								
Description:	Boiler Installation Permit								
TABLE 1. Key Inputs Summary									
Production Data									
Unit ID	Source Description	Control Device	Max. Capacity/Rate		Operating Hours		PAE Throughput		
B003	Boiler No. 3	None	41.6	MMBtu/hr	8,760	hours/year	0	MMBtu/yr	Shut down
B004	Boiler No. 4	None	41.6	MMBtu/hr	8,760	hours/year	0	MMBtu/yr	Shut down
B005	Boiler No. 5	LNB/FGR	97.7	MMBtu/hr	8,760	hours/year	855,852	MMBtu/yr	MMBtu/yr
B005	Boiler No. 5						230,000	MMBtu/yr	Natural Gas
B005	Boiler No. 5						625,000	MMBtu/yr	Coke Oven Gas
Fuel Characteristics									
Fuel Type	Parameter	Value	Units	Source					
Natural Gas	Heating Value	1,069	Btu/scf	Max Heating Value per prior TVR Application					
Coke Oven Gas	Heating Value	511.7	Btu/scf	Max Heating Value per prior TVR Application					
New Boiler Factors									
Constituent	Natural Gas Emission Factor (lb/MMBtu)	Coke Oven Gas Emission Factor (lb/MMBtu)							
NOx	0.036	0.036							
CO	0.036	0.036	50 ppm CO converted to lb/MMBtu						
Constants									
Constituent	Global Warming Potentials ³								
CO ₂	1								
CH ₄	28								
N ₂ O	265								
³ GHGs are calculated in CO ₂ e using Global Warming Potentials (GWP) from 40 CFR 98, Subpart A, Table A-1 and the following equation: CO ₂ e (tpy) = CO ₂ (tpy) * CO ₂ GWP (1) + CH ₄ (tpy) * CH ₄ GWP (28) + N ₂ O (tpy) * N ₂ O GWP (265)									
Grains S equiv. est. / 100 scf COG:	30								
New Boiler PTE Factor:	85.63								
***Molecular Weight of SO ₂	64.066								
****Molecular Weight of S	32.065								
Baseline: 9/1/2022									

Table 8
Boiler No. 5 Emissions Limits

Emission Unit	Boiler No. 5			
Emission Unit ID	TBD			
Stack ID	TBD			
Hours of Operation	8,760	hrs/yr		
Control Device	None			
Max. Heat Input Rating	97.7	MMBtu/hr		
Natural Gas Combustion	9.14E-02	MMscf/hr		
Coke Oven Gas Combustion	1.91E-01	MMscf/hr		
Natural Gas Combustion	215	MMscf/yr	(based on user inputs)	
Coke Oven Gas Combustion	1,221	MMscf/yr	(based on user inputs)	

Combustion Emissions (All Fuels)

Pollutant	Potential Emissions (lb/hr)	Potential Emissions (tpy)	Emission Factor	Emission Factor Units	Emission Factor Source
Criteria Pollutants:					
Filterable Particulate Matter (PM)	1.36	4.59	---	---	Max from All Fuels for Hourly, Sum of Fuels for Annual (see below)
Filt. Particulate Matter <10 microns (PM ₁₀)	0.96	3.29	---	---	Max from All Fuels for Hourly, Sum of Fuels for Annual (see below)
Filt. Particulate Matter < 2.5 microns (PM _{2.5})	0.71	2.50	---	---	Max from All Fuels for Hourly, Sum of Fuels for Annual (see below)
Condensable Particulate Matter (CPM)	0.71	2.99	---	---	Max from All Fuels for Hourly, Sum of Fuels for Annual (see below)
Nitrogen Oxides (NO _x)	3.52	15.39	---	---	Max from All Fuels for Hourly, Sum of Fuels for Annual (see below)
Volatile Organic Compounds (VOC)	0.58	1.52	---	---	Max from All Fuels for Hourly, Sum of Fuels for Annual (see below)
Sulfur Dioxide (SO ₂)	11.94	52.37	---	---	Max from All Fuels for Hourly, Sum of Fuels for Annual (see below)
Carbon Monoxide (CO)	3.54	15.49	---	---	Max from All Fuels for Hourly, Sum of Fuels for Annual (see below)
Hydrochloric Acid (HCl)	0.87	2.78	---	---	Max from All Fuels for Hourly, Sum of Fuels for Annual (see below)

Table 9
BOILER NO. 5 NATURAL GAS COMBUSTION EMISSIONS

Combustion Emissions (Natural Gas)

Pollutant	Potential Emissions (lb/hr)	Potential Emissions (tpy)	Emission Factor	Emission Factor Units	Emission Factor Source
Criteria Pollutants:					
Condensable Particulate Matter (CPM)	0.60	0.71	6.56	lb/MMscf	AP-42 Table 1.4-2, April 2026
Filterable Particulate Matter (PM)	0.20	0.24	2.19	lb/MMscf	AP-42 Table 1.4-2, April 2026
Filt. Particulate Matter <10 microns (PM ₁₀)	0.20	0.24	2.19	lb/MMscf	AP-42 Table 1.4-2, April 2026
Filt. Particulate Matter < 2.5 microns (PM _{2.5})	0.20	0.24	2.19	lb/MMscf	AP-42 Table 1.4-2, April 2026
Nitrogen Oxides (NO _x)	3.52	4.14	0.036	lb/MMBtu	Vendor Guarantee
Volatile Organic Compounds (VOC)	0.58	0.68	6.33	lb/MMscf	AP-42 Table 1.4-2, April 2026
Sulfur Dioxide (SO ₂)	0.06	0.07	0.69	lb/MMscf	AP-42 Table 1.4-2, April 2026
Carbon Monoxide (CO)	3.54	4.17	0.036	lb/MMBtu	Vendor Guarantee

Table 10
BOILER NO. 5 COKE OVEN GAS COMBUSTION EMISSIONS

Combustion Emissions (Coke Oven Gas)

Pollutant	Potential Emissions (lb/hr)	Potential Emissions (tpy)	Emission Factor	Emission Factor Units	Emission Factor Source
Criteria Pollutants:					
Condensable Particulate Matter (CPM)	0.71	2.28	3.74	lb/MMscf	ACME Steel Staff Correspondence (Sep-1997)
Filterable Particulate Matter (PM)	1.36	4.35	7.13	lb/MMscf	FIRE v6.25 (1-02-007-07) (same method as EI calculations)
Filt. Particulate Matter <10 microns (PM ₁₀)	0.96	3.06	5.00	lb/MMscf	FIRE v6.25 (1-02-007-07) (same method as EI calculations)
Filt. Particulate Matter < 2.5 microns (PM _{2.5})	0.71	2.26	3.70	lb/MMscf	FIRE v6.25 (1-02-007-07) (same method as EI calculations)
Nitrogen Oxides (NO _x)	3.52	11.25	0.036	lb/MMBtu	Vendor Guarantee
Volatile Organic Compounds (VOC)	0.19	0.84	1.38	lb/MMscf	FIRE v6.25 (1-02-007-07) (same method as EI calculations)
Sulfur Dioxide (SO ₂)	11.94	52.29	85.63	lb/MMscf	Mass balance
Carbon Monoxide (CO)	3.54	11.33	0.036	lb/MMBtu	Vendor Guarantee

Table 11
PROJECT EMISSIONS SUMMARY -NSR

Potential Emissions (tpy)										
Emission Unit/Pollutant	PM (filterable)	PM10	CO	Lead	SO ₂	NO _x	CO _{2e}	PM2.5	NH ₃	VOC
Boiler No. 5 (New)	4.59	6.28	15.49	-	52.37	15.39	45,770.77	5.48	0.49	1.52
Baseline Actual Emission Reductions (tpy)										
Emission Unit/Pollutant	PM (filterable)	PM10	CO	Lead	SO ₂	NO _x	CO _{2e}	PM2.5	NH ₃	VOC
Boiler No. 3	1.04	0.75	2.27	3.41E-06	6.24	8.06	5,425	0.65	0.04	0.15
Boiler No. 4	1.05	0.76	2.28	3.35E-06	6.16	8.13	5,463	0.65	0.04	0.15
Total	2.10	1.51	4.55	0.00	12.40	16.19	10,889	1.30	0.07	0.30
Emission Unit/Pollutant	PM (filterable)	PM10	CO	Lead	SO ₂	NO _x	CO _{2e}	PM2.5	NH ₃	VOC
Total (new - shutdowns)	2.49	4.77	10.95	-6.76E-06	39.97	-0.80	34,881.84	4.18	0.42	1.23
NSR SER*	25.00	15.00	100.00	0.60	40.00	40.00	75,000.00	10.00	40.00	40.00
Increase > SER? Trigger Netting	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

*Per 40 CFR 52.21(b)(49)(iv)(B), the 75,000 tpy CO_{2e} threshold is only applicable for existing major stationary sources if there is also a significant emissions increase of a regulated NSR pollutant, which is not the case for this project

TABLE 12
PM BASELINE EMISSIONS

		Monthly Emissions (tons)				2-Year Average of Emissions (tons)			
Year	Month	Boiler #3 - COG	Boiler #3 - NG	Boiler #4 - COG	Boiler #4 - NG	Boiler #3 - COG	Boiler #3 - NG	Boiler #4 - COG	Boiler #4 - NG
		COG (MCF)	NAT GAS (MCF)	COG (MCF)	NAT GAS (MCF)				
		#3 Boiler	#3 Boiler	#4 Boiler	#4 Boiler				
2020	October	0.040	0.004	0.092	0.009	--	--	--	--
2020	November	0.086	0.011	0.130	0.017	--	--	--	--
2020	December	0.086	0.011	0.130	0.017	--	--	--	--
2021	January	0.125	0.005	0.155	0.007	--	--	--	--
2021	February	0.085	0.008	0.116	0.010	--	--	--	--
2021	March	0.177	0.012	0.122	0.009	--	--	--	--
2021	April	0.079	0.005	0.116	0.007	--	--	--	--
2021	May	0.058	0.003	0.112	0.006	--	--	--	--
2021	June	0.026	0.001	0.053	0.002	--	--	--	--
2021	July	0.059	0.002	0.066	0.002	--	--	--	--
2021	August	0.071	0.006	0.061	0.005	--	--	--	--
2021	September	0.042	0.003	0.034	0.002	--	--	--	--
2021	October	0.045	0.003	0.037	0.002	--	--	--	--
2021	November	0.143	0.014	0.130	0.013	--	--	--	--
2021	December	0.086	0.008	0.083	0.008	--	--	--	--
2022	January	0.092	0.011	0.081	0.010	--	--	--	--
2022	February	0.087	0.010	0.059	0.007	--	--	--	--
2022	March	0.101	0.010	0.048	0.005	--	--	--	--
2022	April	0.104	0.011	0.084	0.009	--	--	--	--
2022	May	0.071	0.008	0.041	0.005	--	--	--	--
2022	June	0.018	0.002	0.013	0.002	--	--	--	--
2022	July	0.053	0.007	0.050	0.007	--	--	--	--
2022	August	0.133	0.013	0.097	0.010	--	--	--	--
2022	September	0.046	0.006	0.026	0.003	0.957	0.088	0.968	0.086

TABLE 13
PM₁₀ BASELINE EMISSIONS

Year	Month	Monthly Emissions (tons)				2-Year Average of Emissions (tons)			
		Boiler #3 - COG	Boiler #3 - NG	Boiler #4 - COG	Boiler #4 - NG	Boiler #3 - COG	Boiler #3 - NG	Boiler #4 - COG	Boiler #4 - NG
		COG (MCF)	NAT GAS (MCF)	COG (MCF)	NAT GAS (MCF)				
		#3 Boiler	#3 Boiler	#4 Boiler	#4 Boiler				
2020	October	0.029	0.002	0.068	0.005	--	--	--	--
2020	November	0.063	0.007	0.095	0.010	--	--	--	--
2020	December	0.063	0.007	0.095	0.010	--	--	--	--
2021	January	0.091	0.003	0.113	0.004	--	--	--	--
2021	February	0.062	0.005	0.085	0.006	--	--	--	--
2021	March	0.130	0.007	0.090	0.005	--	--	--	--
2021	April	0.058	0.003	0.085	0.004	--	--	--	--
2021	May	0.042	0.002	0.082	0.003	--	--	--	--
2021	June	0.019	0.001	0.039	0.001	--	--	--	--
2021	July	0.043	0.001	0.048	0.001	--	--	--	--
2021	August	0.052	0.003	0.044	0.003	--	--	--	--
2021	September	0.031	0.002	0.025	0.001	--	--	--	--
2021	October	0.033	0.002	0.027	0.001	--	--	--	--
2021	November	0.105	0.008	0.095	0.008	--	--	--	--
2021	December	0.063	0.005	0.061	0.005	--	--	--	--
2022	January	0.067	0.007	0.060	0.006	--	--	--	--
2022	February	0.064	0.006	0.043	0.004	--	--	--	--
2022	March	0.074	0.006	0.035	0.003	--	--	--	--
2022	April	0.076	0.007	0.061	0.005	--	--	--	--
2022	May	0.052	0.005	0.030	0.003	--	--	--	--
2022	June	0.013	0.001	0.009	0.001	--	--	--	--
2022	July	0.039	0.004	0.036	0.004	--	--	--	--
2022	August	0.098	0.008	0.071	0.006	--	--	--	--
2022	September	0.033	0.003	0.019	0.002	0.701	0.052	0.709	0.051

TABLE 14
PM_{2.5} BASELINE EMISSIONS

Year	Month	Monthly Emissions (tons)				2-Year Average of Emissions (tons)			
		Boiler #3 - COG	Boiler #3 - NG	Boiler #4 - COG	Boiler #4 - NG	Boiler #3 - COG	Boiler #3 - NG	Boiler #4 - COG	Boiler #4 - NG
		COG (MCF)	NAT GAS (MCF)	COG (MCF)	NAT GAS (MCF)				
		#3 Boiler	#3 Boiler	#4 Boiler	#4 Boiler				
2020	October	0.025	0.002	0.058	0.005	--	--	--	--
2020	November	0.054	0.007	0.081	0.010	--	--	--	--
2020	December	0.054	0.007	0.081	0.010	--	--	--	--
2021	January	0.078	0.003	0.096	0.004	--	--	--	--
2021	February	0.053	0.005	0.072	0.006	--	--	--	--
2021	March	0.110	0.007	0.076	0.005	--	--	--	--
2021	April	0.050	0.003	0.073	0.004	--	--	--	--
2021	May	0.036	0.002	0.070	0.003	--	--	--	--
2021	June	0.016	0.001	0.033	0.001	--	--	--	--
2021	July	0.037	0.001	0.041	0.001	--	--	--	--
2021	August	0.044	0.003	0.038	0.003	--	--	--	--
2021	September	0.026	0.002	0.021	0.001	--	--	--	--
2021	October	0.028	0.002	0.023	0.001	--	--	--	--
2021	November	0.089	0.008	0.081	0.008	--	--	--	--
2021	December	0.053	0.005	0.052	0.005	--	--	--	--
2022	January	0.057	0.007	0.051	0.006	--	--	--	--
2022	February	0.054	0.006	0.036	0.004	--	--	--	--
2022	March	0.063	0.006	0.030	0.003	--	--	--	--
2022	April	0.065	0.007	0.052	0.005	--	--	--	--
2022	May	0.044	0.005	0.026	0.003	--	--	--	--
2022	June	0.011	0.001	0.008	0.001	--	--	--	--
2022	July	0.033	0.004	0.031	0.004	--	--	--	--
2022	August	0.083	0.008	0.060	0.006	--	--	--	--
2022	September	0.028	0.003	0.016	0.002	0.596	0.052	0.603	0.051

TABLE 15
PM CONDENSABLE BASELINE EMISSIONS

Year	Month	Monthly Emissions (tons)				2-Year Average of Emissions (tons)			
		Boiler #3 - COG	Boiler #3 - NG	Boiler #4 - COG	Boiler #4 - NG	Boiler #3 - COG	Boiler #3 - NG	Boiler #4 - COG	Boiler #4 - NG
		COG (MCF)	NAT GAS (MCF)	COG (MCF)	NAT GAS (MCF)				
		#3 Boiler	#3 Boiler	#4 Boiler	#4 Boiler				
2020	October	0.012	0.002	0.029	0.004	--	--	--	--
2020	November	0.027	0.005	0.041	0.007	--	--	--	--
2020	December	0.027	0.005	0.041	0.007	--	--	--	--
2021	January	0.039	0.002	0.048	0.003	--	--	--	--
2021	February	0.027	0.003	0.036	0.005	--	--	--	--
2021	March	0.055	0.006	0.038	0.004	--	--	--	--
2021	April	0.025	0.002	0.036	0.003	--	--	--	--
2021	May	0.018	0.001	0.035	0.003	--	--	--	--
2021	June	0.008	0.000	0.017	0.001	--	--	--	--
2021	July	0.018	0.001	0.021	0.001	--	--	--	--
2021	August	0.022	0.003	0.019	0.002	--	--	--	--
2021	September	0.013	0.001	0.011	0.001	--	--	--	--
2021	October	0.014	0.001	0.012	0.001	--	--	--	--
2021	November	0.045	0.006	0.041	0.006	--	--	--	--
2021	December	0.027	0.004	0.026	0.003	--	--	--	--
2022	January	0.029	0.005	0.025	0.005	--	--	--	--
2022	February	0.027	0.004	0.018	0.003	--	--	--	--
2022	March	0.032	0.005	0.015	0.002	--	--	--	--
2022	April	0.032	0.005	0.026	0.004	--	--	--	--
2022	May	0.022	0.004	0.013	0.002	--	--	--	--
2022	June	0.006	0.001	0.004	0.001	--	--	--	--
2022	July	0.017	0.003	0.016	0.003	--	--	--	--
2022	August	0.042	0.006	0.030	0.004	--	--	--	--
2022	September	0.014	0.002	0.008	0.001	0.300	0.039	0.303	0.038

TABLE 16
NO_x BASELINE EMISSIONS

Year	Month	Monthly Emissions (tons)				2-Year Average of Emissions (tons)			
		Boiler #3 - COG	Boiler #3 - NG	Boiler #4 - COG	Boiler #4 - NG	Boiler #3 - COG	Boiler #3 - NG	Boiler #4 - COG	Boiler #4 - NG
		COG (MCF)	NAT GAS (MCF)	COG (MCF)	NAT GAS (MCF)				
		#3 Boiler	#3 Boiler	#4 Boiler	#4 Boiler				
2020	October	0.307	0.030	0.711	0.069	--	--	--	--
2020	November	0.663	0.086	1.003	0.131	--	--	--	--
2020	December	0.663	0.086	1.003	0.131	--	--	--	--
2021	January	0.962	0.041	1.192	0.051	--	--	--	--
2021	February	0.653	0.059	0.895	0.081	--	--	--	--
2021	March	1.365	0.097	0.943	0.067	--	--	--	--
2021	April	0.612	0.036	0.896	0.052	--	--	--	--
2021	May	0.447	0.023	0.863	0.045	--	--	--	--
2021	June	0.203	0.008	0.411	0.016	--	--	--	--
2021	July	0.454	0.014	0.507	0.015	--	--	--	--
2021	August	0.547	0.045	0.467	0.039	--	--	--	--
2021	September	0.327	0.024	0.261	0.019	--	--	--	--
2021	October	0.350	0.023	0.285	0.019	--	--	--	--
2021	November	1.102	0.110	1.004	0.100	--	--	--	--
2021	December	0.661	0.063	0.642	0.061	--	--	--	--
2022	January	0.706	0.089	0.627	0.079	--	--	--	--
2022	February	0.673	0.076	0.451	0.051	--	--	--	--
2022	March	0.780	0.079	0.369	0.037	--	--	--	--
2022	April	0.799	0.089	0.645	0.072	--	--	--	--
2022	May	0.550	0.064	0.319	0.037	--	--	--	--
2022	June	0.140	0.017	0.097	0.012	--	--	--	--
2022	July	0.406	0.057	0.384	0.054	--	--	--	--
2022	August	1.029	0.103	0.747	0.074	--	--	--	--
2022	September	0.351	0.044	0.199	0.025	7.375	0.683	7.461	0.670

TABLE 17
CO BASELINE EMISSIONS

Year	Month	Monthly Emissions (tons)				2-Year Average of Emissions (tons)			
		Boiler #3 - COG	Boiler #3 - NG	Boiler #4 - COG	Boiler #4 - NG	Boiler #3 - COG	Boiler #3 - NG	Boiler #4 - COG	Boiler #4 - NG
		COG (MCF)	NAT GAS (MCF)	COG (MCF)	NAT GAS (MCF)				
		#3 Boiler	#3 Boiler	#4 Boiler	#4 Boiler				
2020	October	0.071	0.025	0.164	0.058	--	--	--	--
2020	November	0.152	0.072	0.231	0.110	--	--	--	--
2020	December	0.152	0.072	0.231	0.110	--	--	--	--
2021	January	0.221	0.034	0.274	0.043	--	--	--	--
2021	February	0.150	0.050	0.206	0.068	--	--	--	--
2021	March	0.314	0.082	0.217	0.056	--	--	--	--
2021	April	0.141	0.030	0.206	0.044	--	--	--	--
2021	May	0.103	0.020	0.198	0.038	--	--	--	--
2021	June	0.047	0.007	0.095	0.014	--	--	--	--
2021	July	0.104	0.011	0.117	0.013	--	--	--	--
2021	August	0.126	0.038	0.107	0.033	--	--	--	--
2021	September	0.075	0.020	0.060	0.016	--	--	--	--
2021	October	0.080	0.020	0.066	0.016	--	--	--	--
2021	November	0.254	0.092	0.231	0.084	--	--	--	--
2021	December	0.152	0.053	0.148	0.051	--	--	--	--
2022	January	0.162	0.075	0.144	0.067	--	--	--	--
2022	February	0.155	0.064	0.104	0.043	--	--	--	--
2022	March	0.179	0.066	0.085	0.031	--	--	--	--
2022	April	0.184	0.075	0.148	0.061	--	--	--	--
2022	May	0.126	0.054	0.073	0.031	--	--	--	--
2022	June	0.032	0.014	0.022	0.010	--	--	--	--
2022	July	0.093	0.048	0.088	0.045	--	--	--	--
2022	August	0.237	0.086	0.172	0.063	--	--	--	--
2022	September	0.081	0.037	0.046	0.021	1.696	0.573	1.716	0.562

TABLE 18
SO_x BASELINE EMISSIONS

Year	Month	Monthly Emissions (tons)				2-Year Average of Emissions (tons)			
		Boiler #3 - COG	Boiler #3 - NG	Boiler #4 - COG	Boiler #4 - NG	Boiler #3 - COG	Boiler #3 - NG	Boiler #4 - COG	Boiler #4 - NG
		COG (MCF)	NAT GAS (MCF)	COG (MCF)	NAT GAS (MCF)				
		#3 Boiler	#3 Boiler	#4 Boiler	#4 Boiler				
2020	October	0.236	0.000	0.543	0.000	--	--	--	--
2020	November	0.510	0.001	0.767	0.001	--	--	--	--
2020	December	0.510	0.001	0.767	0.001	--	--	--	--
2021	January	0.758	0.000	0.937	0.000	--	--	--	--
2021	February	0.514	0.000	0.704	0.000	--	--	--	--
2021	March	1.075	0.001	0.741	0.000	--	--	--	--
2021	April	0.482	0.000	0.705	0.000	--	--	--	--
2021	May	0.352	0.000	0.678	0.000	--	--	--	--
2021	June	0.160	0.000	0.323	0.000	--	--	--	--
2021	July	0.358	0.000	0.399	0.000	--	--	--	--
2021	August	0.431	0.000	0.367	0.000	--	--	--	--
2021	September	0.258	0.000	0.205	0.000	--	--	--	--
2021	October	0.276	0.000	0.224	0.000	--	--	--	--
2021	November	0.868	0.001	0.790	0.001	--	--	--	--
2021	December	0.521	0.000	0.505	0.000	--	--	--	--
2022	January	0.670	0.001	0.597	0.000	--	--	--	--
2022	February	0.639	0.000	0.429	0.000	--	--	--	--
2022	March	0.740	0.000	0.351	0.000	--	--	--	--
2022	April	0.759	0.001	0.613	0.000	--	--	--	--
2022	May	0.522	0.000	0.303	0.000	--	--	--	--
2022	June	0.133	0.000	0.092	0.000	--	--	--	--
2022	July	0.386	0.000	0.366	0.000	--	--	--	--
2022	August	0.977	0.001	0.711	0.000	--	--	--	--
2022	September	0.333	0.000	0.189	0.000	6.235	0.004	6.153	0.004

TABLE 19
VOC BASELINE EMISSIONS

Year	Month	Monthly Emissions (tons)				2-Year Average of Emissions (tons)			
		Boiler #3 - COG	Boiler #3 - NG	Boiler #4 - COG	Boiler #4 - NG	Boiler #3 - COG	Boiler #3 - NG	Boiler #4 - COG	Boiler #4 - NG
		COG (MCF)	NAT GAS (MCF)	COG (MCF)	NAT GAS (MCF)				
		#3 Boiler	#3 Boiler	#4 Boiler	#4 Boiler				
2020	October	0.005	0.002	0.011	0.004	--	--	--	--
2020	November	0.010	0.005	0.015	0.007	--	--	--	--
2020	December	0.010	0.005	0.015	0.007	--	--	--	--
2021	January	0.014	0.002	0.018	0.003	--	--	--	--
2021	February	0.010	0.003	0.013	0.004	--	--	--	--
2021	March	0.020	0.005	0.014	0.004	--	--	--	--
2021	April	0.009	0.002	0.013	0.003	--	--	--	--
2021	May	0.007	0.001	0.013	0.002	--	--	--	--
2021	June	0.003	0.000	0.006	0.001	--	--	--	--
2021	July	0.007	0.001	0.008	0.001	--	--	--	--
2021	August	0.008	0.003	0.007	0.002	--	--	--	--
2021	September	0.005	0.001	0.004	0.001	--	--	--	--
2021	October	0.005	0.001	0.004	0.001	--	--	--	--
2021	November	0.017	0.006	0.015	0.006	--	--	--	--
2021	December	0.010	0.003	0.010	0.003	--	--	--	--
2022	January	0.011	0.005	0.009	0.004	--	--	--	--
2022	February	0.010	0.004	0.007	0.003	--	--	--	--
2022	March	0.012	0.004	0.006	0.002	--	--	--	--
2022	April	0.012	0.005	0.010	0.004	--	--	--	--
2022	May	0.008	0.004	0.005	0.002	--	--	--	--
2022	June	0.002	0.001	0.001	0.001	--	--	--	--
2022	July	0.006	0.003	0.006	0.003	--	--	--	--
2022	August	0.015	0.006	0.011	0.004	--	--	--	--
2022	September	0.005	0.002	0.003	0.001	0.111	0.038	0.112	0.037