

FACT SHEET FOR: OP26S2-023**DATE:****DWEE ID:** 116136**Name of Source:** Sustainable Beef, LLC**Source Classification:** Class II at time of issuance
Area Source of Hazardous Air Pollutants (HAPs)

Regulatory changes may supersede information in this document. If the source should add or change equipment or change processes such that a NESHAP or NSPS subpart becomes an applicable requirement, it is the source's obligation to comply with that subpart and applicable requirements whether or not they are identified in the associated permitting action or Title 129. Also note that the NESHAP and NSPS subparts are subject to change. Detailed information related to NESHAP and NSPS subparts can be found on the DWEE Air Toxics Notebook and DWEE NSPS Notebook located on the DWEE website (<https://dwee.nebraska.gov/>). The DWEE website can also be used to find other permit related and facility specific information that is not identified in this fact sheet.

The source is subject to and will comply with all applicable requirements found in Title 40 Protection of Environment, Code of Federal Regulations that apply to the source including those found at 40 CFR Part 52, Subpart CC or 40 CFR Part 70, Appendix A (federally enforceable requirements); the State Implementation Plan (SIP) approved Title 129 as amended September 28, 2022 cited in this permit and denoted by an asterisk () are federally enforceable; and the Environmental Protection Act, Neb. Rev. Stat. §§ 81-1501 to 81-1532, and Nebraska Administrative Code Title 129 as amended June 28, 2026. When Title 129 as amended June 28, 2026 cited in this permit becomes SIP approved and federally enforceable it will supersede Title 129 as amended September 28, 2022.*

DESCRIPTION OF THE SOURCE OR ACTIVITY:

This initial operating permit, #OP26S2-023, approves the operation of a beef packing and by-product rendering facility near North Platte, Nebraska. The facility produces edible beef products and inedible beef by-products including meat and bone meal (MBM), dried blood meal, tallow, and beef hides.

PERMIT HISTORY

Date Issued	Number	Status
07/28/2023	CP22-042	Not active; superseded by CP23-028
10/30/2023	CP23-028	Partially active; Conditions I, II, III.(A), III.(C), III.(D), III.(F), and III.(G) superseded by CP25-039
07/02/2026	CP25-039	Active
tbd	OP26S2-023	Active

PERMIT ACTION:

Permitted Emission Points are detailed in the table below:

Control Equipment ID# and Description	Emission Unit Description	Applicable NSPS Requirements	Applicable NESHAP Requirements
Emission Point ID#: EP-BLR_01			

Control Equipment ID# and Description	Emission Unit Description	Applicable NSPS Requirements	Applicable NESHAP Requirements
N/a	EU-BLR_01: Boiler #1 with Flue Gas Recirculation; maximum permitted capacity: 43.35 MMBtu/hr; permitted fuel type: natural gas; installed May 2025	40 CFR Part 60, Subpart A; Title 129, Chapter 12, Section <u>001.01</u> *; Title 129, Chapter 12, Section <u>001.01</u>	None
		40 CFR Part 60, Subpart Dc; Title 129, Chapter 12, Section <u>001.05</u> *; Title 129, Chapter 12, Section <u>001.06</u>	
Emission Point ID#: EP-BLR_02			
N/a	EU-BLR_02: Boiler #2 with Flue Gas Recirculation; maximum permitted capacity: 43.35 MMBtu/hr; permitted fuel type: natural gas; installed May 2025	40 CFR Part 60, Subpart A; Title 129, Chapter 12, Section <u>001.01</u> *; Title 129, Chapter 12, Section <u>001.01</u>	None
		40 CFR Part 60, Subpart Dc; Title 129, Chapter 12, Section <u>001.05</u> *; Title 129, Chapter 12, Section <u>001.06</u>	
Emission Point ID#: EP-BLR_03			
N/a	EU-BLR_03: Boiler #3 with Flue Gas Recirculation; maximum permitted capacity: 43.35 MMBtu/hr; permitted fuel type: natural gas; installed May 2025	40 CFR Part 60, Subpart A; Title 129, Chapter 12, Section <u>001.01</u> *; Title 129, Chapter 12, Section <u>001.01</u>	None
		40 CFR Part 60, Subpart Dc; Title 129, Chapter 12, Section <u>001.05</u> *; Title 129, Chapter 12, Section <u>001.06</u>	
Emission Point ID#: EP-ENG3			
N/a	EU-ENG3: Emergency Backup Engine 3; maximum displacement: 1.483 liters/cylinder; 6 cylinder; 240 HP; 1.95 MMBtu/hr; permitted fuel type: natural gas; model year: 2022-2024; installed	40 CFR Part 60, Subpart A; Title 129, Chapter 12, Section <u>001.01</u> *; Title 129, Chapter 12, Section <u>001.01</u>	40 CFR Part 63, NESHAP Subpart A; Title 129, Chapter 13, Section <u>002.01</u> *; Title 129, Chapter 13, Section <u>002.01</u>

Control Equipment ID# and Description	Emission Unit Description	Applicable NSPS Requirements	Applicable NESHAP Requirements
	May 2025	40 CFR Part 60, NSPS Subpart JJJJ; Title 129, Chapter 12, Section <u>001.81</u> *; Title 129, Chapter 12, Section <u>001.82</u>	40 CFR Part 63, NESHAP Subpart <u>ZZZZ</u> ; Title 129, Chapter 13, Section <u>002.78</u> *; Title 129, Chapter 13, Section <u>002.79</u>
Emission Point ID#: EP-PBS3			
CE-VS2: Venturi Scrubber 2, CE-PBS2: Packed Bed Scrubber 2, and CE-PBS3: Packed Bed Scrubber 3; installed May 2025	EU-COOKER: Cooker with Two Pressors; maximum capacity: 21,820 lb/hr; installed: May 2025	None	None
	EU-CENTRIFUGE: Centrifuge; maximum capacity: 21,820 lb/hr; installed: May 2025		
	EU-SCREW1: Screw Press 1; maximum capacity: 21,820 lb/hr; installed: May 2025		
	EU-SCREW2: Screw Press 2; maximum capacity: 21,820 lb/hr; installed: May 2025		
	EU-FATTANK: Fat Work Tank; maximum capacity: 21,820 lb/hr; installed: May 2025		
	EU-SCREEN: SWECO Fat Screen; maximum capacity: 21,820 lb/hr; installed: May 2025		
	EU-CONVEYOR2: Crax Transfer Conveyor 2; maximum capacity: 21,820 lb/hr; installed: May 2025		
	EU-DRAINER: Drainer/Overpress Screw Conveyor; maximum capacity: 21,820 lb/hr; installed: May 2025		
	EU-HEATEX: Shell and Tube Heat Exchanger; maximum capacity: 21,820 lb/hr; installed: May 2025		
CE-CYCLONE: Cyclone, CE-VS3:	EU-ROTSRN: Rotex Screen; maximum capacity: 21,820 lb/hr; installed: May 2025	None	None

Control Equipment ID# and Description	Emission Unit Description	Applicable NSPS Requirements	Applicable NESHAP Requirements
Venturi Scrubber 3, and CE-PBS3: Packed Bed Scrubber 3; installed May 2025	EU-MILL: Hammermill; maximum capacity: 21,820 lb/hr; installed: May 2025		
	EU-CONVEYOR1: Crax Transfer Conveyor; maximum capacity: 21,820 lb/hr; installed: May 2025		
	EU-BIN: Surge Bin; maximum capacity: 21,820 lb/hr; installed: May 2025		
Emission Point ID#: EP-PBS4			
CE-VS1: Venturi Scrubber 1, CE-PBS1: Packed Bed Scrubber 1, and CE-PBS4: Packed Bed Scrubber 4	EU-DRYER: Blood Dryer; permitted fuel type: natural gas; maximum capacity: 7.0 MMBtu/hr; installed May 2025	None	None
	EU-CENTRIFUGE: Centrifuge; maximum capacity: 14,000 lb/hr; installed May 2025		
	EU-COAG: Blood Coagulator; maximum capacity: 14,000 lb/hr; installed May 2025		
	EU-BLDTANK: Raw Blood Tank; maximum capacity: 14,000 lb/hr; installed May 2025		
Emission Point ID#: EP-EVAP1			
N/a	EU-EVAP1: Condensing Evaporator 1; maximum capacity: 1,600 gallons per minute (gpm); installed May 2025	None	None
Emission Point ID#: EP-EVAP2			
N/a	EU-EVAP2: Condensing Evaporator 2; maximum capacity: 1,600 gpm; installed May 2025	None	None
Emission Point ID#: EP-EVAP3			
N/a	EU-EVAP3: Condensing Evaporator 3; maximum capacity: 1,600 gpm; installed May 2025	None	None
Emission Point ID#: EP-EVAP4			
N/a	EU-EVAP4: Condensing Evaporator 4; maximum capacity: 1,600 gpm; installed May 2025	None	None
Emission Point ID#: EP-MBMSHIP			

Control Equipment ID# and Description	Emission Unit Description		Applicable NSPS Requirements	Applicable NESHAP Requirements
N/a	EU-MBMSHIP1: Meat and Bone Shipping Spout 1; installed May 2025	Maximum capacity: 21,820 lb/hr	None	None
	EU-MBMSHIP2_3: Meat and Bone Shipping Spouts 2 and 3; installed May 2025			
	EU-MBMBIN1: Meat and Bone Storage Bin 1; installed May 2025			
	EU-MBMBIN2_3: Meat and Bone Storage Bins 2 and 3; installed May 2025			
Emission Point ID#: EP-BLDSHIP				
N/a	EU-BLDSHIP: Dried Blood Shipping Spout; installed May 2025	Maximum capacity: 1,180 lb/hr	None	None
CE-BLDCYC: Cyclone; installed May 2025	EU-BLDBIN: Dried Blood Storage Bin; installed May 2025			
Emission Point ID#: EP-BLDFLTR				
CE-BLDFLTR: Baghouse; installed May 2025	EU-BLDMILL: Dried Blood Hammermill/Cyclone System; installed May 2025	Maximum capacity: 14,000 lb/hr	None	None
Emission Point ID#: EP-CHEM				
N/a	EU-CHEM: Anti-Bacterial Processing Agent Chemicals		None	None
Emission Point ID#: EP-ROAD				
N/a	EU-ROAD: Paved Road Truck Traffic		None	None
Emission Point ID#: Fab Floor 1				
N/a	EU-Fab Floor 1: Processing Building Makeup Air Unit (MAU); permitted fuel type: natural gas; maximum capacity: 12 MMBtu/hr.		None	None

Control Equipment ID# and Description	Emission Unit Description	Applicable NSPS Requirements	Applicable NESHAP Requirements
Emission Point ID#: EP-Fab Floor 2			
N/a	EU-Fab Floor 2: Processing Building MAU; permitted fuel type: natural gas; maximum capacity: 12 MMBtu/hr.	None	None
Emission Point ID#: Miscellaneous			
N/a	EU-Miscellaneous: Processing Building MAU; permitted fuel type: natural gas; maximum capacity: 10 MMBtu/hr.	None	None
Emission Point ID#: EP-Fab Floor 4			
N/a	EU-Fab Floor 4: Processing Building MAU; permitted fuel type: natural gas; maximum capacity: 13 MMBtu/hr.	None	None
Emission Point ID#: EP-Fab Floor 5			
N/a	EU-Fab Floor 5: Processing Building MAU; permitted fuel type: natural gas; maximum capacity: 13 MMBtu/hr.	None	None

TYPE AND QUANTITY OF AIR CONTAMINANT EMISSIONS ANTICIPATED:

The following table summarizes the potential and actual emissions:

Regulated Pollutant	Potential Emissions as limited by permit (tons/year)	Actual Emissions^[2] (tons/year)
Particulate Matter (PM)	18.97	-
Particulate Matter less than or equal to 10 microns (PM ₁₀)	18.97	-
Particulate Matter less than or equal to 2.5 microns (PM _{2.5})	18.97	-
Sulfur Dioxide (SO ₂)	1.30	-
Oxides of Nitrogen (NO _x)	80.16	-
Carbon Monoxide (CO)	91.28	-
Volatile Organic Compounds (VOCs)	97.98	-
Greenhouse Gases (GHGs) ^[1]	143,145.29	-

Regulated Pollutant	Potential Emissions as limited by permit (tons/year)	Actual Emissions^[2] (tons/year)
Carbon Dioxide Equivalents (CO ₂ e) ^[1]	143,289.76	-
Hazardous Air Pollutants (HAPs)		-
Greatest Individual HAP(s)		
Hexane	2.16	-
Formaldehyde	0.12	-
All Other HAPs	6.73	-
Total HAPs	9.01	-

^[1] The U.S. Supreme Court ruled in 2014 that greenhouse gases (GHGs) may not be used to determine whether a source is a Class I (major) source. Utility Air Regulatory Group v. EPA, 134 S.Ct. 2427 (2014). Therefore, potential emissions of GHGs will not be used to determine a source's operating permit classification at this time. However, GHGs are still regulated air pollutants so GHGs and CO₂e will continue to be calculated and reported in this fact sheet.

^[2] An air emissions inventory has not been submitted. The source commenced operations in mid-2025.

SUPPLEMENTAL INFORMATION:

Title 129, Chapter 4*; Title 129, Chapter 4 - Prevention of Significant Deterioration (PSD) of Air Quality

Sustainable Beef is located in Lincoln County, which is an attainment area for all criteria pollutants. Sustainable Beef is a Slaughter and Meat Packing Facility and is not subject to 100 tpy major New Source Review (NSR) source thresholds, including fugitive emissions, in accordance with Chapter 3, Section 001.04*; Chapter 3, Section 001.04. Therefore, Sustainable Beef is subject to 250 tpy major NSR source thresholds; as permitted, potential emissions for the facility do not exceed the 250 tpy threshold, classifying the facility as a minor source under the NSR program.

Title 129, Chapter 12*; Title 129, Chapter 12 - New Source Performance Standards (NSPS) and Emission Limits for Existing Sources

The three boilers with flue gas recirculation (EP-BLR_01, EP-BLR_02, and EP-BLR_03) are subject to NSPS Subparts A and Dc; and the emergency backup engine (EP-ENG3) is subject to NSPS Subparts A and JJJJ. The subparts which are applicable to Sustainable Beef are discussed below.

40 CFR 60 Subpart A – General Provisions: This subpart, adopted by reference in Title 129, Chapter 12, Section 001.01*; Title 129, Chapter 12, Section 001.01, applies to those units subject to another NSPS subpart unless otherwise stated in the rule. This applies to the boilers and emergency backup engines.

40 CFR 60 Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units: This subpart, adopted by reference in Title 129, Chapter 12, Section 001.05*; Title 129, Chapter 12, Section 001.06, applies to steam generating units with a design rate greater than 10 MMBtu/hr but less than or equal to 100 MMBtu/hr, installed after June 9, 1989. A steam-generating unit is defined as any device which combusts any fuel to produce steam, heat water, or heat any heat transfer medium. This does not include process heaters, which are devices with the primary purpose of heating materials to initiate or promote a chemical reaction in which the heated material participates as a reactant or catalyst. A heat transfer medium is any material which is used to transfer heat from one point to another point.

The boilers (EP-BLR_01, EP-BLR_02, and EP-BLR_03) are fired exclusively on natural gas. Each boiler has a design heat input rate of 43.35 MMBtu/hr and are therefore subject to Subpart Dc. Because of their

size, the boilers at Sustainable Beef are not subject to related NSPS subparts such as Subparts D (heat input greater than 250 MMBtu/hr), Da (heat input greater than 250 MMBtu/hr), or Db (heat input greater than 100 MMBtu/hr).

40 CFR 60 Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines: This subpart, adopted by reference in Title 129, Chapter 12, Section 001.81*; Title 129, Chapter 12, Section 001.82, applies to new, modified, and reconstructed spark ignition (SI) internal combustion engines (ICE). New engines are subject to this subpart if construction of the SI ICE commenced after June 12, 2006, and if the engine was manufactured after July 1, 2007, for SI ICE rated at greater than or equal to 500 hp; after January 1, 2007, for lean burn SI ICE rated at greater than or equal to 500 hp but less than 1,350 hp; after July 1, 2008, for SI ICE rated less than 500 hp; and after January 01, 2009, for emergency engines. The emergency backup engine (EP-ENG3) is subject to this subpart since it was manufactured after January 1, 2009.

In order for a stationary engine to be considered an emergency ICE under NSPS Subpart JJJJ, the run time restrictions in 40 CFR §60.4243(d) must be met. There is no restriction on use of an emergency ICE in emergency situations within the requirements of NSPS Subpart JJJJ. The engine is restricted to a maximum of 100 hours per calendar year of operation for non-emergency activities such as maintenance checks and readiness testing. The engine is allowed up to 50 hours per calendar year of non-emergency operation other than maintenance, testing and demand response; however, any non-emergency run time must be counted as part of the 100 hours per calendar year for maintenance and testing.

The NSPS appears to be applicable requirements, but is not:

40 CFR 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines: This subpart, adopted by reference in Title 129, Chapter 12, Section 001.80*; Title 129, Chapter 12, Section 001.81, applies to the owner or operator of stationary compression ignition (CI) internal combustion engines (ICE) that commenced construction or have been modified or reconstructed after July 11, 2005 where the stationary CI ICE are manufactured after April 1, 2006 and are not fire pump engines, or manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006. Subpart IIII is not applicable, because emergency engine, EU-ENG3, is a spark engine.

Title 129, Chapter 13, Sections 002* and 003*; Title 129, Chapter 13, Sections 002 and 003 - National Emission Standards for Hazardous Air Pollutants (NESHAP)

The emergency backup engine (EP-ENG3) is subject to NESHAP Subparts A and ZZZZ. The subparts which are applicable to Sustainable Beef are discussed below.

40 CFR 63 Subpart A – General Provisions: This subpart, adopted by reference in Title 129, Chapter 13, Section 002.01*; Title 129, Chapter 13, Section 002.01, applies to those units subject to another NESHAP subpart unless otherwise stated in the rule. Therefore, this subpart applies to the emergency backup engines.

40 CFR 63 Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines: This subpart, adopted by reference in Title 129, Chapter 13, Section 002.78*; Title 129, Chapter 13, Section 002.79, applies to stationary reciprocating internal combustion engines located at a major (≥ 10 tons/year of individual HAP or ≥ 25 tons/year of combined HAPs) or area (non-major) source of HAPs, except if the stationary RICE is being tested at a stationary RICE test cell/stand. The emergency backup engine (EP-ENG3) is subject to Subpart ZZZZ and will demonstrate compliance with Subpart ZZZZ by complying with NSPS Subpart JJJJ in accordance with 40 CFR 63.6590(c).

The NESHAP appears to be applicable requirements, but is not:

40 CFR 63 Subpart JJJJJJ, National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers, adopted by reference in Title 129, Chapter 13, Section 002.101*:

Title 129, Chapter 13, Section 002.103, applies to boilers at area sources of HAPs except that boilers that burn only gaseous fuels are not subject to the regulation [§63.11195(e) and §63.11237].

Title 129, Chapter 15*; Title 129, Chapter 15 - Compliance

Process Weight Rate

Title 129, Chapter 15, Section 001.01*; Title 129, Chapter 15, Section 001.01, limits PM (filterable) emissions to the amounts shown in Table 15-1 during any one hour. These process weight rate limits, which are based on throughput of the emission units, vary as throughputs change. Since the potential to emit for each emission point is less than the process weight rate limitations, these PM limitations were not included in Condition III of this permit.

Particulate Emissions from Combustion Sources

All of the PM emission points subject to the Chapter 15, Section 001.02*; Chapter 15, Section 001.02 limitations are in compliance with those limitations, as the potential to emit for each emission point is less than the limitations. Therefore, these PM limitations were not included in Condition III of this permit.

Opacity Limitations from Emission Units (Section 001.04)*; (Section 001.04)

Specific Condition I.(J) specifies that no person shall cause or allow emissions, from any source, which has an opacity equal to or greater than twenty percent (20%). Opacity must be determined using an EPA-approved method or recorded by a continuous opacity monitoring system which has been operated and maintained pursuant to 40 CFR Part 60 Appendix B except as provided for in Chapter 15, Sections 001.05 and 001.05E*; Chapter 15, Sections 001.05 and 001.05E ((Title 129, Chapter 15, Section 001.04)*; Title 129, Chapter 15, Section 001.04). Therefore, while not specifically stated in Condition III, this requirement is still applicable to all emission units at the source.

Prevention of Accidental Releases of Title III, Section 112(r)

Sustainable Beef is subject to this section of the Federal Clean Air Act because the source produces, processes, handles, or stores threshold quantities of substances regulated under Section 112(r). Therefore, the operating permit contains conditions for the Prevention of Accidental Releases program (§68.10 and §68.115).

SPECIFIC PERMIT CONDITIONS DISCUSSION:

Condition III includes conditions that are specific to the emissions units and emission points listed in each respective condition. Permit conditions that require no additional discussion are not included in this section.

III.(A) Specific Conditions for Boilers

- III.(A)(1) The source is required to comply with all applicable requirements in NSPS Subpart Dc for emission units EU-BLR_01, EU-BLR_02, and EU-BLR_03.
- III.(A)(2) Boilers EU-BLR_01, EU-BLR_02, and EU-BLR_03 supply steam for facility operations. Initial performance emission testing for PM (filterable), SO₂, NO_x, CO, and VOC is not required to verify the vendor-provided emission factors. The emission factors for these units are derived from EPA AP-42, Section 1.4, for boilers equipped with low-NO_x burners. Because AP-42 emission factors are considered conservative, initial performance testing is not required.

Emission points EP-BLR_01, EP-BLR_02, and EP-BLR_03 are each subject to an opacity limit of less than 20 percent, as specified in Title 129, Chapter 15, Section 001.04. Compliance with this opacity standard is demonstrated through the exclusive use of natural gas as the fuel.
- III.(A)(3) This condition establishes a fuel-use limitation for the three boilers. Boilers EU-BLR_01, EU-BLR_02, and EU-BLR_03 are authorized to combust natural gas exclusively. Since

natural gas combustion does not typically produce visible emissions, opacity surveys are not required for these units.

- III.(A)(4)(a) The permit includes a recordkeeping requirement to ensure the proper operation and maintenance of boilers EU-BLR_01, EU-BLR_02, and EU-BLR_03. The source is required to maintain records documenting all routine maintenance and preventative actions performed on these units. These records must include the date of the activity and a brief description of the maintenance or preventative action completed. This requirement supports verification that the boilers are operated in accordance with good air pollution control practices and helps demonstrate continued compliance with applicable permit conditions.

III.(B) Specific Conditions for Emergency Engines

Sustainable Beef has installed one emergency engine, designated as EU-ENG3. Information regarding this unit was provided in the initial air quality operating permit application OP26S2-023, received May 26, 2026, and supplemented by communications received from the source on June 26, 2026. These communications confirmed that the two emergency engines previously authorized under Construction Permit CP23-028, issued October 30, 2023 (EU-ENG1 and EU-ENG2), were not installed.

DWEE reviewed the potential-to-emit calculations for the installed emergency engine and determined that the installation of EU-ENG3 does not meet or exceed the construction permitting thresholds established in Title 129, Chapter 3*; Title 129, Chapter 3.

- III.(B)(3) The source must comply with the operational and monitoring requirements of 40 CFR 60 Subpart JJJJ for the 240-hp emergency engine (EU-ENG3). Compliance with Subpart JJJJ also satisfies 40 CFR 63 Subpart ZZZZ per 40 CFR 63.6590(c).

The engine is limited to 500 hours of operation in any twelve (12) consecutive months and must be equipped with a non-resettable hour meter to track hours for both Subpart ZZZZ and the 500-hour limit [§63.6625(f); (Title 129, Chapter 6, Section 003.03)*; Title 129, Chapter 6, Section 003.03]. The engine also has a separate 100-hour annual limit for maintenance, readiness testing, and other allowable non-emergency operation under Subpart ZZZZ [§63.6625(f)].

This condition requires verification of fuel used in EU-ENG3 and limits non-emergency operation to 11:00 AM–4:00 PM CDT/CST to ensure the engines qualify as intermittent emergency units and to reduce NO_x impacts. Sustainable Beef must comply with all applicable operating, monitoring, recordkeeping, and reporting requirements of NSPS Subparts A and JJJJ. Per 40 CFR 63.6590(c), compliance with NSPS Subpart JJJJ also satisfies NESHAP Subpart ZZZZ.

DWEE understands that readiness testing typically requires 30 minutes to four (4) hours. The operating window in Condition III.(B)(3)(c) accommodates this testing while allowing other permissible non-emergency operation.

The limitation on the hours of operations for non-emergency situations prescribed in Condition III.(B)(3)(c) align with EPA’s Tyler Fox Memorandum entitled “Additional Clarification Regarding Application of Appendix W modeling Guidance for the 1-hour NO₂ National Ambient Air Quality Standard” dated March 1, 2011:

“Another aspect of intermittent emissions worth noting is the distinction between intermittent emissions that can be scheduled with some degree of flexibility vs. intermittent emissions that cannot be scheduled. For example, a portion of emissions from an emergency generator are likely to be associated with regular testing of the equipment that may be required to ensure its reliable operation, while that portion of emergency generator emissions associated with actual emergency use typically cannot be scheduled.

In this case it may be appropriate to include a permit condition that restricts operation of the emergency generator during testing certain hours of the day, which may mitigate that source's contribution to ambient NO₂ levels based on dispersion conditions."

When establishing these limitations, DWEE also considers local meteorological conditions to minimize air quality impacts. Restricting non-emergency operation to no earlier than 11:00 AM and no later than 4:00 PM aligns with the period of strongest convective vertical mixing. Operating during these hours helps disperse emissions more effectively and reduces ground-level NO₂ concentrations from the emergency engine.

III.(C) Specific Conditions for Rendering Operations

- III.(C)(2) To ensure compliance with the permitted emission limits for filterable PM, SO_x, VOC, and Total HAP, this permitting action requires ongoing performance testing to be conducted at intervals not to exceed four (4) years from the date of the most recent valid performance test. Emission Points EP-PBS3 and EP-PBS4 are subject to combined VOC and Total HAP emission limits; therefore, performance testing for these pollutants must be conducted concurrently for all emission units subject to the applicable group limit. For the purposes of this requirement, "concurrently" means during the same testing event when the contracted testing firm is onsite.

Emission Points EP-PBS3 and EP-PBS4 are jointly subject to group emission limits of 2.63 lb/hr VOC and 1.42 lb/hr Total HAP. Pursuant to Condition IV.(A), concurrent performance testing of EP-PBS3 and EP-PBS4 is required to demonstrate that the emission points collectively comply with the applicable group emission limits at the time of testing.

- III.(C)(3) This condition applies to the emission units and control equipment used in the rendering operations, including emission point EP-PBS3. The associated control devices include Venturi Scrubbers CE-VS2 and CE-VS3, Packed Bed Scrubbers CE-PBS2 and CE-PBS3, and the cyclone (CE-CYCLONE). These devices are required to control emissions from the rendering process.

Sustainable Beef must monitor key scrubber operating parameters—such as liquid temperature, flow rate, chemical addition rate, pressure differential, and recirculation rate, as applicable. These parameters must be maintained within the manufacturer's recommended ranges or within the levels established during the most recent compliant performance test. Monitoring must occur continuously.

- III.(C)(3)(c) Sustainable Beef estimated meat and bone meal (MBM) production at 10.91 dry tons per hour in the CP25-039 application. This rate was converted into an annual operational throughput limit of 95,571.60 tons of dried product over any twelve-month period. Compliance will be demonstrated through facility recordkeeping.

- III.(C)(3)(f) To verify compliance with the opacity standard, the source is required to conduct visible emissions surveys.

III.(D) Specific Conditions for Blood Drying

- III.(D)(2) To ensure compliance with the permitted emission limits for filterable PM, VOC, and Total HAP, this permitting action requires ongoing performance testing to be conducted at intervals not to exceed four (4) years from the date of the most recent valid performance test. Emission Points EP-PBS3 and EP-PBS4 are subject to combined VOC and Total HAP emission limits; therefore, performance testing for these pollutants must be conducted concurrently for all emission units subject to the applicable group limit. For the purposes of this requirement, "concurrently" means during the same testing event when the contracted testing firm is onsite.

Emission Points EP-PBS3 and EP-PBS4 are jointly subject to group emission limits of 2.63 lb/hr VOC and 1.42 lb/hr Total HAP. Pursuant to Condition IV.(A), concurrent performance

- testing of EP-PBS3 and EP-PBS4 is required to demonstrate that the emission points collectively comply with the applicable group emission limits at the time of testing.
- III.(D)(3) This condition applies to the emission units and control equipment for the blood-drying operations, including Venturi Scrubber CE-VS1 and Packed Bed Scrubbers CE-PBS1 and CE-PBS4. The Venturi scrubber controls emissions directly from the blood dryer, and the exhaust stream is then treated in series by the packed bed scrubbers for additional pollutant removal.
- Sustainable Beef must monitor key scrubber operating parameters, including liquid temperature, liquid flow rate, chemical-addition flow rate, pressure differential, and recirculation rate, where applicable. These parameters must be maintained within the manufacturer's recommended ranges or at the levels recorded during the most recent compliant performance test. Monitoring must occur continuously.
- III.(D)(3)(d) In construction permit application for CP25-039, Sustainable Beef estimated that the blood-drying operation would produce 0.59 dry tons of dried blood per hour. This production rate was converted into an operational limit of 5,168.4 tons of dried product in any twelve (12) consecutive months. Compliance with this limit will be demonstrated through facility recordkeeping.
- III.(D)(3)(g) To verify compliance with the opacity standard, the source is required to conduct visible emissions surveys.
- III.(E) Specific Conditions for Evaporators**
- III.(E)(3) Four condensing evaporators (EP-EVAP1 through EP-EVAP4) provide cooling for process water and use biocide and antiscalant additives to support proper operation and reduce cleaning frequency. This condition specifies the methodology for calculating VOC and HAP emissions from these additives. For conservatism, both additives are assumed to contain 100 percent VOC; the biocide is assumed to contain no HAPs, and the antiscalant is assumed to contain up to 100 percent HAPs as ethylene glycol. These calculation methods establish enforceable limits on VOC and HAP emissions from the evaporators.
- Daily observations are required for each day the evaporators operate to ensure proper operation and maintenance. Compliance with the assumed HAP content of the biocide must be verified using manufacturer-supplied Safety Data Sheets. Emissions from the evaporators are expected to contribute only minimally to the facility's overall VOC and HAP totals.
- III.(F) Specific Conditions for Dried Blood Hammermill, Product Storage, and Shipping**
- III.(F)(2) Construction Permit CP25-039 did not require initial performance testing for the baghouse (CE-BLDFLTR). This is because the emission factors used for this unit are sourced from EPA's AP-42, Section 9.9.1, which provides conservative and standardized emission estimates. As a result, separate performance testing was not necessary for permitting purposes. However, the Department may require testing in the future if needed to verify continued compliance with applicable emission limits.
- III.(F)(3) This condition applies to the rendering-operation emission units and control equipment, including EP-MBMSHIP, EP-BLDSHIP, and EP-BLDFLTR. Emissions from the dried blood hammermill, product storage, and shipping processes are controlled by the cyclone (CE-BLDCYC) and the baghouse (CE-BLDFLTR).

The condition requires Sustainable Beef to maintain and routinely observe the particulate control equipment to ensure proper operation. Key operating parameters—such as pressure differential and opacity—must be monitored to verify effective cyclone and baghouse performance. The control equipment must be properly installed, operated, and maintained,

and the manufacturer's operation and maintenance manual (or an equivalent resource) must be kept on site. Operating parameters must remain within manufacturer-recommended ranges or levels documented during the most recent compliant performance test. Monitoring must occur continuously.

III.(G) Specific Conditions for Sanitation

III.(G)(3) This condition establishes usage limits for the acetic acid and/or peroxyacetic acid mixture applied in the EU-CHEM sanitation process over any rolling twelve (12)-month period. The source shall not use more than 14,229 gallons of cleaning or disinfectant solution, limited to no more than twenty percent (20%) peroxyacetic acid and/or acetic acid, within any twelve (12) consecutive calendar months.

Initial VOC performance testing is not required. Compliance will be demonstrated through recordkeeping of the quantity of antibacterial agents used. Records must document the total gallons of cleaning or disinfectant solution, limited to no more than twenty percent (20%) peroxyacetic acid and/or acetic acid, not exceeding 14,229 gallons in any twelve (12) consecutive calendar-month period.

III.(H) Specific Conditions for Haul Roads

This condition establishes the requirements for the production-related haul roads (EU-ROAD) at the facility. Haul roads at Sustainable Beef are required to be paved and best management practices (BMPs) are required to be utilized in order to demonstrate compliance with the general particulate matter requirements specified in Title 129, Chapter 15*; Title 129, Chapter 15. Visible fugitive emissions surveys are required to be conducted at least once daily to ensure particulate matter is not leaving the plant property.

III.(I) Specific Conditions for Miscellaneous Combustion Unit

III.(I)(3) This condition restricts EU-Fab Floor 1, EU-Fab Floor 2, EU-Miscellaneous, EU-Fab Floor 4, and EU-Fab Floor 5, to the exclusive use of natural gas. Limiting these units to natural gas enables compliance with Title 129, Chapter 15, Section 001.04*; Title 129, Chapter 15, Section 001.04 and eliminates the requirement for visible emissions surveys.

Insignificant Activities

The following table contains a description of insignificant activities at the source at the time of permit issuance, in accordance with operating permit application, #OP26S2-023, received May 26, 2026, including any supporting information received prior to issuance of the permit:

Insignificant Activity ID	Unit Description	Insignificance Criteria
Hide on 1	Processing Building Makeup Air Unit (MAU); maximum capacity: 7.5 MMBtu/hr ^[1]	< 10 MMBtu/hr heat input capacity
Hide on 2	Processing Building MAU; maximum capacity: 7.5 MMBtu/hr ^[1]	< 10 MMBtu/hr heat input capacity
Hide off 1	Processing Building MAU and RTU; maximum capacity: 7.5 MMBtu/hr ^[1]	< 10 MMBtu/hr heat input capacity
Hide off 2	Processing Building MAU; maximum capacity: 7.5 MMBtu/hr ^[1]	< 10 MMBtu/hr heat input capacity
Offal	Processing Building MAU; maximum capacity: 5.0 MMBtu/hr ^[1]	< 10 MMBtu/hr heat input capacity
Tripe Room	Processing Building MAU; maximum capacity: 5.0 MMBtu/hr ^[1]	< 10 MMBtu/hr heat input capacity
Hot Cattle	Processing Building MAU; maximum capacity: 2.5 MMBtu/hr ^[1]	< 10 MMBtu/hr heat input capacity

Insignificant Activity ID	Unit Description	Insignificance Criteria
Basement	Processing Building MAU; maximum capacity: 7.5 MMBtu/hr ^[1]	< 10 MMBtu/hr heat input capacity
Rendering 1	Processing Building MAU; maximum capacity: 5.0 MMBtu/hr ^[1]	< 10 MMBtu/hr heat input capacity
Rendering 2	Processing Building MAU; maximum capacity: 5.0 MMBtu/hr ^[1]	< 10 MMBtu/hr heat input capacity
Hides	Processing Building MAU; maximum capacity: 7.5 MMBtu/hr ^[1]	< 10 MMBtu/hr heat input capacity
Test & Hold	Processing Building MAU; maximum capacity: 0.5 MMBtu/hr ^[1]	< 10 MMBtu/hr heat input capacity
Red Offal	Processing Building MAU; maximum capacity: 1.0 MMBtu/hr ^[1]	< 10 MMBtu/hr heat input capacity
Fab Floor 3	Processing Building MAU; maximum capacity: 3.0 MMBtu/hr ^[1]	< 10 MMBtu/hr heat input capacity
Red Offal	Processing Building MAU; maximum capacity: 4.5 MMBtu/hr ^[1]	< 10 MMBtu/hr heat input capacity
Rooftop Unit	Processing Building Rooftop Unit; maximum capacity: 4.8 MMBtu/hr ^[1]	< 10 MMBtu/hr heat input capacity
Miscgas	Hot Water Heater; maximum capacity: 0.66 MMBtu/hr ^[1]	< 10 MMBtu/hr heat input capacity
	Miscellaneous Space Heaters (combined); maximum capacity: 0.26 MMBtu/hr ^[1]	< 10 MMBtu/hr heat input capacity

^[1] Combustion units burn natural gas

Although not required, DWEE recommends that the source submit a written notification to DWEE if there are additions or changes to the list of insignificant activities identified above, containing the following suggested information:

- A brief description of the addition or change within the permitted source;
- The date on which the addition or change occurred;
- Any change in potential emissions; and
- The criteria, as defined in the Operating Permit Application Forms, used to determine that the addition or change to the list of insignificant activities qualifies as insignificant.

This notification helps the DWEE keep an up to date list on file for compliance purposes. In addition, because emissions from insignificant activities must be counted toward major source (Class I) applicability, it is important to know if a source makes additions or changes to the list of insignificant activities that would cause a change in potential to emit at the source, and ultimately whether the source has a change in classification (i.e., Class I vs. Class II).

The following terms and conditions from the construction permit(s) listed were not incorporated into this permit, or have been modified as discussed below:

Permit Number and Issuance Date	Specific Condition	Reason Modified or Not Included In Operating Permit
#CP23-028 October 30, 2023	III.(B)	Sustainable Beef has installed one emergency engine (EU-ENG3). Information was provided in OP26S2-023 (received May 26, 2026) and in communications received June 26, 2026. These communications confirmed that

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		EU-ENG1 and EU-ENG2 authorized under CP23-028 were not installed. DWEE determined that EU-ENG3 does not meet construction permitting thresholds under Title 129, Chapter 3.
#CP25-039 July 2, 2026	III.(C)(2)(b) III.(C)(2)(c)	This condition was removed subsequent to the completion of the scheduled initial performance testing in August 2026.
#CP25-039 July 2, 2026	III.(D)(2)(b) III.(D)(2)(c)	This condition was removed subsequent to the completion of the scheduled initial performance testing in August 2026.
#CP25-039 July 2, 2026	III.(G)(1) III.(G)(2)(a) III.(G)(3)(a) III.(G)(3)(a)(i) III.(G)(3)(a)(iii) III.(G)(5)(a)(i) III.(G)(5)(a)(iii)	These conditions were removed because the source reduced the amount of sanitation chemicals used for sanitation activities. As a result, lowering the construction permit limit will keep the source below the Class I thresholds.

Fact Sheet Attachment

Facility-Wide Potential to Emit: Criteria and Other Pollutants

Emission Point	Process Description	Pollutant																	
		PM		PM ₁₀		PM _{2.5}		H ₂ S		SO _x		NO _x		CO		Lead		VOCs	
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
EP-BLR 01	Natural Gas Boiler 1	0.32	1.41	0.32	1.41	0.32	1.41	-	-	0.03	0.11	2.13	9.31	3.57	15.64	2.13E-05	9.31E-05	0.45	1.97
EP-BLR 02	Natural Gas Boiler 2	0.32	1.41	0.32	1.41	0.32	1.41	-	-	0.03	0.11	2.13	9.31	3.57	15.64	2.13E-05	9.31E-05	0.45	1.97
EP-BLR 03	Natural Gas Boiler 3	0.32	1.41	0.32	1.41	0.32	1.41	-	-	0.03	0.11	2.13	9.31	3.57	15.64	2.13E-05	9.31E-05	0.45	1.97
EP-ENG3	Emergency Backup Engine	1.90E-05	4.74E-06	1.90E-05	4.74E-06	1.90E-05	4.74E-06	-	-	1.13E-06	2.82E-07	1.06	0.26	2.12	0.53	-	-	0.53	0.13
EP-PBS3	Rendering Process	1.14	4.99	1.14	4.99	1.14	4.99	-	-	0.13	0.58	0.07	0.30	0.06	0.28	-	-	2.63	11.53
EP-PBS4	Blood Dryer Process	1.08	4.73	1.08	4.73	1.08	4.73	0.05	0.21	4.12E-03	0.02	0.69	3.01	0.58	2.52	3.43E-06	1.50E-05	-	-
EP-EVAP1	Condensing Evaporator 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.43	1.90
EP-EVAP2	Condensing Evaporator 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
EP-EVAP3	Condensing Evaporator 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
EP-EVAP4	Condensing Evaporator 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
EP-CHEM	Anti-Bacterial Processing Agent Chemicals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17.15	75.13
EP-BLDFLTR	Dried Blood Hammermill Baghouse	0.08	0.37	0.08	0.37	0.08	0.37	-	-	-	-	-	-	-	-	-	-	-	-
EP-MISCGAS	Miscellaneous Space Heaters	6.83E-03	0.03	6.83E-03	0.03	6.83E-03	0.03	-	-	5.39E-04	2.36E-03	0.09	0.39	0.08	0.33	4.50E-07	1.97E-06	4.94E-03	0.02
EP-MUA RTU	Makeup Air Units and Rooftop Units	1.05	4.61	1.05	4.61	1.05	4.61	-	-	0.08	0.36	11.02	48.27	9.29	40.71	6.93E-05	3.03E-04	0.76	3.34
EP-MBMSHIP	Meat and Bone Storage and Shipping	1.21	5.30	0.39	1.69	0.07	0.29	-	-	-	-	-	-	-	-	-	-	-	-
EP-BLDSHIP	Dried Blood Storage and Shipping	0.03	0.14	0.01	0.05	1.77E-03	7.75E-03	-	-	-	-	-	-	-	-	-	-	-	-
EP-ROAD	Haul Roads	5.81	25.46	1.16	5.09	0.29	1.25	-	-	-	-	-	-	-	-	-	-	-	-
Facility-Wide PTE		11.39	49.88	5.89	25.80	4.68	20.52	0.05	0.21	0.30	1.30	19.30	80.16	22.84	91.28	1.37E-04	6.00E-04	22.87	97.98
Facility-Wide PTE (excluding fugitives)		4.33	18.97	4.33	18.97	4.33	18.97	0.05	0.21	0.30	1.30	19.30	80.16	22.84	91.28	1.37E-04	6.00E-04	22.87	97.98
Previous Facility-Wide PTE ^[1]		11.31	49.52	5.81	25.43	4.60	20.15	0.05	0.21	0.30	1.30	18.25	74.51	18.89	71.90	1.37E-04	6.00E-04	6.18	24.36
Previous Facility-Wide PTE ^[1] (excluding fugitives)		4.25	18.61	4.25	18.61	4.25	18.61	0.05	0.21	0.30	1.30	18.25	74.51	18.89	71.90	1.37E-04	6.00E-04	6.18	24.36
Change in Emissions		0.08	0.36	0.08	0.37	0.08	0.37	-	-	-	-	1.05	5.65	3.95	19.38	-	-	16.69	73.62
Change in Emissions (excluing fugitives)		0.08	0.36	0.08	0.36	0.08	0.36	-	-	-	-	1.05	5.65	3.95	19.38	-	-	16.69	73.62

^[1] Previous PTE obtained from CP23-028.

Fact Sheet Attachment

Facility-Wide Potential to Emit: Hazardous Air Pollutants (HAPs)

Emission Point	Process Description	Hazardous Air Pollutant																	
		Acetaldehyde		Benzene		Chromium		Formaldehyde		Hexane ^[1]		Napthalene		Toluene		Other HAPs		Total HAPs	
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
EP-BLR 01	Natural Gas Boiler 1	-	-	8.93E-05	3.91E-04	5.95E-05	2.61E-04	3.19E-03	1.40E-02	0.08	0.34	2.59E-05	1.14E-04	1.45E-04	6.33E-04	3.42E-03	1.50E-02	0.08	0.37
EP-BLR 02	Natural Gas Boiler 2	-	-	8.93E-05	3.91E-04	5.95E-05	2.61E-04	3.19E-03	1.40E-02	0.08	0.34	2.59E-05	1.14E-04	1.45E-04	6.33E-04	3.42E-03	1.50E-02	0.08	0.37
EP-BLR 03	Natural Gas Boiler 3	-	-	8.93E-05	3.91E-04	5.95E-05	2.61E-04	3.19E-03	1.40E-02	0.08	0.34	2.59E-05	1.14E-04	1.45E-04	6.33E-04	3.42E-03	1.50E-02	0.08	0.37
EP-ENG3	Emergency Backup Engine	1.52E-02	3.79E-03	3.79E-03	9.47E-04	-	-	0.10	0.03	2.17E-03	5.42E-04	1.45E-04	3.63E-05	7.97E-04	1.99E-04	3.36E-02	8.41E-03	0.16	0.04
EP-PBS3	Rendering Process	-	-	1.44E-05	6.31E-05	9.61E-06	4.21E-05	5.15E-04	2.25E-03	1.24E-02	0.05	4.19E-06	1.83E-05	2.33E-05	1.02E-04	0.30	1.33	1.42	6.22
EP-PBS4	Blood Dryer Process	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.11	0.50	0.11	0.50
EP-EVAP1	Condensing Evaporator 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
EP-EVAP2	Condensing Evaporator 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
EP-EVAP3	Condensing Evaporator 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
EP-EVAP4	Condensing Evaporator 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EP-CHEM	Anit-Bacterial Processing Agent Chemicals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EP-BLDFLTR	Dried Blood Hammermill Baghouse	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EP-MISCGAS	Miscellaneous Space Heaters	-	-	1.89E-06	8.27E-06	1.26E-06	5.51E-06	6.74E-05	2.95E-04	1.62E-03	7.09E-03	5.48E-07	2.40E-06	3.06E-06	1.34E-05	6.63E-06	2.91E-05	1.70E-03	7.44E-03
EP-MUA RTU	Makeup Air Units and Rooftop Units	-	-	2.91E-04	1.27E-03	1.94E-04	8.49E-04	1.04E-02	0.05	0.25	1.09	8.45E-05	3.70E-04	4.71E-04	2.06E-03	1.02E-03	4.48E-03	0.26	1.15
EP-MBMSHIP	Meat and Bone Storage and Shipping	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EP-BLDSHIP	Dried Blood Storage and Shipping	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EP-ROAD	Haul Roads	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Facility-Wide PTE		1.52E-02	3.79E-03	4.36E-03	3.47E-03	3.83E-04	1.68E-03	0.12	0.12	0.49	2.16	3.12E-04	7.68E-04	1.73E-03	4.28E-03	0.46	1.89	2.21	9.01
Previous Facility-Wide PTE ^[2]		1.77E-02	4.42E-03	4.99E-03	3.62E-03	3.98E-04	1.72E-03	0.14	0.12	0.50	2.16	3.36E-04	7.74E-04	1.86E-03	4.31E-03	0.47	1.89	1.13	4.19
Change in Emissions		-2.51E-03	-6.27E-04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.08	4.82

^[1] Highest individual HAP.

^[2] Previous PTE obtained from CP23-028.

Fact Sheet Attachment

Facility-Wide Potential to Emit: Greenhouse Gases (GHGs)

Emission Point	Process Description	Greenhouse Gas									
		CO ₂		CH ₄		N ₂ O		Total GHGs (mass basis)		Total GHGs (CO ₂ e)	
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
EP-BLR 01	Natural Gas Boiler 1	5,070.96	22,210.80	0.10	0.42	9.56E-03	4.19E-02	5,071.06	22,211.26	5,076.17	22,233.61
EP-BLR 02	Natural Gas Boiler 2	5,070.96	22,210.80	0.10	0.42	9.56E-03	4.19E-02	5,071.06	22,211.26	5,076.17	22,233.61
EP-BLR 03	Natural Gas Boiler 3	5,070.96	22,210.80	0.10	0.42	9.56E-03	4.19E-02	5,071.06	22,211.26	5,076.17	22,233.61
EP-ENG3	Emergency Backup Engine	228.49	57.12	4.31E-03	1.08E-03	4.31E-04	1.08E-04	228.50	57.12	228.73	57.18
EP-PBS3	Rendering Process	-	-	-	-	-	-	-	-	-	-
EP-PBS4	Blood Dryer Process	818.84	3,586.52	0.02	0.07	1.54E-03	6.76E-03	818.86	3,586.59	819.68	3,590.20
EP-EVAP1	Condensing Evaporator 1	-	-	-	-	-	-	-	-	-	-
EP-EVAP2	Condensing Evaporator 2	-	-	-	-	-	-	-	-	-	-
EP-EVAP3	Condensing Evaporator 3	-	-	-	-	-	-	-	-	-	-
EP-EVAP4	Condensing Evaporator 4	-	-	-	-	-	-	-	-	-	-
EP-CHEM	Anti-Bacterial Processing Agent Chemicals	-	-	-	-	-	-	-	-	-	-
EP-BLDFLTR	Dried Blood Hammermill Baghouse	-	-	-	-	-	-	-	-	-	-
EP-MISCGAS	Miscellaneous Space Heaters	107.27	469.83	2.02E-03	8.85E-03	2.02E-04	8.85E-04	107.27	469.84	107.38	470.32
EP-MUA RTU	Makeup Air Units and Rooftop Units	16,528.87	72,396.45	0.31	1.36	0.03	0.14	16,529.21	72,397.95	16,545.85	72,471.22
EP-MBMSHIP	Meat and Bone Storage and Shipping	-	-	-	-	-	-	-	-	-	-
EP-BLDSHIP	Dried Blood Storage and Shipping	-	-	-	-	-	-	-	-	-	-
EP-ROAD	Haul Roads	-	-	-	-	-	-	-	-	-	-
Facility-Wide PTE (including fugitives)		32,896.35	143,142.32	0.62	2.70	0.06	0.27	32,897.03	143,145.29	32,930.14	143,289.76
Facility-Wide PTE (excluding fugitives)		32,896.35	143,142.32	0.62	2.70	0.06	0.27	32,897.03	143,145.29	32,930.14	143,289.76
Previous Facility-Wide PTE (including fugitives)		32,934.17	143,151.78	0.62	2.70	0.06	0.27	32,934.85	143,154.75	32,968.18	143,299.63
Previous Facility-Wide PTE (excluding fugitives)		32,934.17	143,151.78	0.62	2.70	0.06	0.27	32,934.85	143,154.75	32,968.18	143,299.63
Change in Emissions		-	-	-	-	-	-	-	-	-38.04	-9.87
Change in Emissions (excluing fugitives)		-	-	-	-	-	-	-	-	-38.04	-9.87

⁽¹⁾ Previous PTE obtained from CP23-028.

Fact Sheet Attachment

Emission Unit Summary

Emission Point ID#	Control Equipment	Emission Unit ID#	Emission Unit Description
EP-EVAP1	-	EU-EVAP1	Condensing Evaporator 1
EP-EVAP2	-	EU-EVAP2	Condensing Evaporator 2
EP-EVAP3	-	EU-EVAP3	Condensing Evaporator 3
EP-EVAP4	-	EU-EVAP4	Condensing Evaporator 4
EP-ENG3	-	EU-ENG3	Emergency Backup Engine
EP-CHEM	-	EU-CHEM	Anti-Bacterial Processing Agent Chemicals
EP-PBS3	CE-VS2: Venturi Scrubber 2	EU-COOKER	Cooker with Two Pressors
		EU-CENTRIFUGE	Centrifuge
		EU-SCREW1	Screw Press 1
		EU-SCREW2	Screw Press 2
		EU-FATTANK	Fat Work Tank
		EU-SCREEN	SWECO FatScreen
		EU-CONVEYOR2	Crax Transfer Conveyor 2
		EU-DRAINER	Drainer / Overpress Screw Conveyor
	CE-CYCLONE: Cyclone	EU-HEATEX	Shell and Tube Heat Exchanger
		EU-ROTSCRN	Rotex Screen
		EU-MILL	Hammermill
		EU-CONVEYOR1	Crax Transfer Conveyor
	CE-VS3: Venturi Scrubber 3	EU-BIN	Surge Bin
	CE-PBS2: Packed Bed Scrubber 2	CE-CYCLONE	Cyclone
EP-PBS4	CE-VS1: Venturi Scrubber 1	CE-VS2	Venturi Scrubber 2
		CE-VS3	Venturi Scrubber 3
		CE-PBS2	Packed Bed Scrubber 2
		EU-DRYER	Blood Dryer
	CE-PBS1: Packed Bed Scrubber 1	EU-CENTRIFUGE	Centrifuge
		EU-COAG	Blood Coagulator
		EU-BLDTANK	Raw Blood Tank
		EU-BLDSHIP	Dried Blood Shipping Spout
EP-BLR 01	-	CE-VS1	Venturi Scrubber 1
EP-BLR 02	-	CE-PBS1	Packed Bed Scrubber 1
EP-BLR 03	-	EU-BLR 01	Natural Gas Boiler 1
EP-BLR 03	-	EU-BLR 02	Natural Gas Boiler 2
EP-BLR 03	-	EU-BLR 03	Natural Gas Boiler 3
EP-MISCGAS	-	EU-MISCGAS	Miscellaneous Space Heater
EP-ROAD	-	EU-ROAD	Haul Roads
EP-MBMSHIP	-	EU-MBMSHIP1	Meat and Bone Shipping Spout 1
		EU-MBMSHIP2 3	Meat and Bone Shipping Spout 2 and 3
		EU-MBMBIN1	Meat and Bone Storage Bin 1
		EU-MBMBIN2 3	Meat and Bone Storage Bin 2 and 3
EP-BLDSHIP	-	EU-BLDSHIP	Dried Blood Shipping Spout
EP-BLDFLTR	CE-BLDCYC	EU-BLDBIN	Dried Blood Storage Bin
EP-BLDFLTR	CE-BLDFLTR	EU-BLDMILL	Dried Blood Hammermill/Cyclone System
EP-MUA RTU	-	EU-MUA RTU	Makeup Air Units and Rooftop Units

Fact Sheet Attachment

Boiler: EP-BLR_01

Maximum Capacity	43.35	MMBtu/hr
Fuel Type	Natural Gas	
Annual Fuel Use	372.30	MMscf
Natural Gas Heat Content	1,020	Btu/scf
Hours of Operation	8,760	hr/yr

Potential to Emit: Criteria Pollutants and GHGs					
Pollutant	Emission Factor		Potential Emissions		Emission Factor Source
	lb/MMscf	lb/MMBtu	lb/hr	tpy	
PM ^[1]	7.6	-	0.32	1.41	AP-42 Table 1.4-2 (07/98)
PM ₁₀	7.6	-	0.32	1.41	AP-42 Table 1.4-2 (07/98)
PM _{2.5}	7.6	-	0.32	1.41	AP-42 Table 1.4-2 (07/98)
SO ₂	0.60	-	0.03	0.11	AP-42 Table 1.4-2 (07/98)
NO _x	50	-	2.13	9.31	AP-42 Table 1.4-1 (07/98)
CO	84	-	3.57	15.64	AP-42 Table 1.4-1 (07/98)
Lead	5.00E-04	-	2.13E-05	9.31E-05	AP-42 Table 1.4-2 (07/98)
VOC	-	8.00E-03	0.45	1.97	Vendor Supplied with SF ^[2]
CO ₂	-	116.98	5,070.96	22,210.80	40 CFR Part 98 Subpart C Table C-1
CH ₄	-	2.20E-03	0.10	0.42	40 CFR Part 98 Subpart C Table C-2
N ₂ O	-	2.20E-04	9.56E-03	4.19E-02	40 CFR Part 98 Subpart C Table C-2
Total GHGs (mass basis)			5,071.06	22,211.26	-
Total GHGs (CO ₂ e) ^[3]			5,076.17	22,233.61	-

^[1]For the purposes of these calculations, it is assumed PM = PM₁₀ = PM_{2.5}

^[2]Vendor supplied with 30% safety factor.

^[3]CO₂e calculated based on Global Warming Potentials (GWPs) obtained from 40 CFR Part 98 Subpart A Table A-1 (January 1, 2025). The CO₂e for CO₂ = 1, for CH₄ = 28, and for N₂O = 265.

Fact Sheet Attachment

Boiler: EP-BLR_01

Potential to Emit: HAPs					
Pollutant	Emission Factor		Potential Emissions		Emission Factor Source
	lb/MMscf	lb/MMBtu	lb/hr	tpy	
Arsenic	2.00E-04	-	8.50E-06	3.72E-05	AP-42 Table 1.4-4 (07/98)
Benzene	2.10E-03	-	8.93E-05	3.91E-04	AP-42 Table 1.4-3 (07/98)
Beryllium	1.20E-05	-	5.10E-07	2.23E-06	AP-42 Table 1.4-4 (07/98)
Cadmium	1.10E-03	-	4.68E-05	2.05E-04	AP-42 Table 1.4-4 (07/98)
Chromium	1.40E-03	-	5.95E-05	2.61E-04	AP-42 Table 1.4-4 (07/98)
Cobalt	8.40E-05	-	3.57E-06	1.56E-05	AP-42 Table 1.4-4 (07/98)
Formaldehyde	7.50E-02	-	3.19E-03	1.40E-02	AP-42 Table 1.4-3 (07/98)
Hexane	1.80	-	0.08	0.34	AP-42 Table 1.4-3 (07/98)
Manganese	3.80E-04	-	1.62E-05	7.07E-05	AP-42 Table 1.4-4 (07/98)
Mercury	2.60E-04	-	1.11E-05	4.84E-05	AP-42 Table 1.4-4 (07/98)
Naphthalene	6.10E-04	-	2.59E-05	1.14E-04	AP-42 Table 1.4-3 (07/98)
Nickel	2.10E-03	-	8.93E-05	3.91E-04	AP-42 Table 1.4-4 (07/98)
Selenium	2.40E-05	-	1.02E-06	4.47E-06	AP-42 Table 1.4-4 (07/98)
Toluene	3.40E-03	-	1.45E-04	6.33E-04	AP-42 Table 1.4-3 (07/98)
Benz(a)anthracene	1.80E-06	-	7.65E-08	3.35E-07	AP-42 Table 1.4-3 (07/98)
Benzo(a)pyrene	1.20E-06	-	5.10E-08	2.23E-07	AP-42 Table 1.4-3 (07/98)
Benzo(b)fluoranthene	1.80E-06	-	7.65E-08	3.35E-07	AP-42 Table 1.4-3 (07/98)
Chrysene	1.80E-06	-	7.65E-08	3.35E-07	AP-42 Table 1.4-3 (07/98)
Dibenzo(a,h)anthracene	1.20E-06	-	5.10E-08	2.23E-07	AP-42 Table 1.4-3 (07/98)
Indeno(1,2,3-cd)pyrene	1.80E-06	-	7.65E-08	3.35E-07	AP-42 Table 1.4-3 (07/98)
Dichlorobenzene	1.20E-03	-	5.10E-05	2.23E-04	AP-42 Table 1.4-3 (07/98)
Total HAPs			0.08	0.35	-

Fact Sheet Attachment

Boiler: EP-BLR_02

Maximum Capacity	43.35	MMBtu/hr
Fuel Type	Natural Gas	
Annual Fuel Use	372.30	MMscf
Natural Gas Heat Content	1,020	Btu/scf
Hours of Operation	8,760	hr/yr

Potential to Emit: Criteria Pollutants and GHGs					
Pollutant	Emission Factor		Potential Emissions		Emission Factor Source
	lb/MMscf	lb/MMBtu	lb/hr	tpy	
PM ^[1]	7.6	-	0.32	1.41	AP-42 Table 1.4-2 (07/98)
PM ₁₀	7.6	-	0.32	1.41	AP-42 Table 1.4-2 (07/98)
PM _{2.5}	7.6	-	0.32	1.41	AP-42 Table 1.4-2 (07/98)
SO ₂	0.60	-	0.03	0.11	AP-42 Table 1.4-2 (07/98)
NO _x	50	-	2.13	9.31	AP-42 Table 1.4-1 (07/98)
CO	84	-	3.57	15.64	AP-42 Table 1.4-1 (07/98)
Lead	5.00E-04	-	2.13E-05	9.31E-05	AP-42 Table 1.4-2 (07/98)
VOC	-	8.00E-03	0.45	1.97	Vendor Supplied with SF ^[2]
CO ₂	-	116.98	5,070.96	22,210.80	40 CFR Part 98 Subpart C Table C-1
CH ₄	-	2.20E-03	0.10	0.42	40 CFR Part 98 Subpart C Table C-2
N ₂ O	-	2.20E-04	9.56E-03	4.19E-02	40 CFR Part 98 Subpart C Table C-2
Total GHGs (mass basis)			5,071.06	22,211.26	-
Total GHGs (CO ₂ e) ^[3]			5,076.17	22,233.61	-

^[1]For the purposes of these calculations, it is assumed PM = PM₁₀ = PM_{2.5}

^[2]Vendor supplied with 30% safety factor.

^[3]CO₂e calculated based on Global Warming Potentials (GWPs) obtained from 40 CFR Part 98 Subpart A Table A-1 (January 1, 2025). The CO₂e for CO₂ = 1, for CH₄ = 28, and for N₂O = 265.

Fact Sheet Attachment

Boiler: EP-BLR_02

Potential to Emit: HAPs					
Pollutant	Emission Factor		Potential Emissions		Emission Factor Source
	lb/MMscf	lb/MMBtu	lb/hr	tpy	
Arsenic	2.00E-04	-	8.50E-06	3.72E-05	AP-42 Table 1.4-4 (07/98)
Benzene	2.10E-03	-	8.93E-05	3.91E-04	AP-42 Table 1.4-3 (07/98)
Beryllium	1.20E-05	-	5.10E-07	2.23E-06	AP-42 Table 1.4-4 (07/98)
Cadmium	1.10E-03	-	4.68E-05	2.05E-04	AP-42 Table 1.4-4 (07/98)
Chromium	1.40E-03	-	5.95E-05	2.61E-04	AP-42 Table 1.4-4 (07/98)
Cobalt	8.40E-05	-	3.57E-06	1.56E-05	AP-42 Table 1.4-4 (07/98)
Formaldehyde	7.50E-02	-	3.19E-03	1.40E-02	AP-42 Table 1.4-3 (07/98)
Hexane	1.80	-	0.08	0.34	AP-42 Table 1.4-3 (07/98)
Manganese	3.80E-04	-	1.62E-05	7.07E-05	AP-42 Table 1.4-4 (07/98)
Mercury	2.60E-04	-	1.11E-05	4.84E-05	AP-42 Table 1.4-4 (07/98)
Naphthalene	6.10E-04	-	2.59E-05	1.14E-04	AP-42 Table 1.4-3 (07/98)
Nickel	2.10E-03	-	8.93E-05	3.91E-04	AP-42 Table 1.4-4 (07/98)
Selenium	2.40E-05	-	1.02E-06	4.47E-06	AP-42 Table 1.4-4 (07/98)
Toluene	3.40E-03	-	1.45E-04	6.33E-04	AP-42 Table 1.4-3 (07/98)
Benz(a)anthracene	1.80E-06	-	7.65E-08	3.35E-07	AP-42 Table 1.4-3 (07/98)
Benzo(a)pyrene	1.20E-06	-	5.10E-08	2.23E-07	AP-42 Table 1.4-3 (07/98)
Benzo(b)fluoranthene	1.80E-06	-	7.65E-08	3.35E-07	AP-42 Table 1.4-3 (07/98)
Chrysene	1.80E-06	-	7.65E-08	3.35E-07	AP-42 Table 1.4-3 (07/98)
Dibenzo(a,h)anthracene	1.20E-06	-	5.10E-08	2.23E-07	AP-42 Table 1.4-3 (07/98)
Indeno(1,2,3-cd)pyrene	1.80E-06	-	7.65E-08	3.35E-07	AP-42 Table 1.4-3 (07/98)
Dichlorobenzene	1.20E-03	-	5.10E-05	2.23E-04	AP-42 Table 1.4-3 (07/98)
Total HAPs			0.08	0.35	-

Fact Sheet Attachment

Boiler: EP-BLR_03

Maximum Capacity	43.35	MMBtu/hr
Fuel Type	Natural Gas	
Annual Fuel Use	372.30	MMscf
Natural Gas Heat Content	1,020	Btu/scf
Hours of Operation	8,760	hr/yr

Potential to Emit: Criteria Pollutants and GHGs					
Pollutant	Emission Factor		Potential Emissions		Emission Factor Source
	lb/MMscf	lb/MMBtu	lb/hr	tpy	
PM ^[1]	7.6	-	0.32	1.41	AP-42 Table 1.4-2 (07/98)
PM ₁₀	7.6	-	0.32	1.41	AP-42 Table 1.4-2 (07/98)
PM _{2.5}	7.6	-	0.32	1.41	AP-42 Table 1.4-2 (07/98)
SO ₂	0.60	-	0.03	0.11	AP-42 Table 1.4-2 (07/98)
NO _x	50	-	2.13	9.31	AP-42 Table 1.4-1 (07/98)
CO	84.0000	-	3.57	15.64	AP-42 Table 1.4-1 (07/98)
Lead	0.0005	-	2.13E-05	9.31E-05	AP-42 Table 1.4-2 (07/98)
VOC	-	0.008	0.45	1.97	Vendor Supplied with SF ^[2]
CO ₂	-	116.98	5,070.96	22,210.80	40 CFR Part 98 Subpart C Table C-1
CH ₄	-	2.20E-03	0.10	0.42	40 CFR Part 98 Subpart C Table C-2
N ₂ O	-	2.20E-04	9.56E-03	4.19E-02	40 CFR Part 98 Subpart C Table C-2
Total GHGs (mass basis)			5,071.06	22,211.26	-
Total GHGs (CO ₂ e) ^[3]			5,076.17	22,233.61	-

^[1]For the purposes of these calculations, it is assumed PM = PM₁₀ = PM_{2.5}

^[2]Vendor supplied with 30% safety factor.

^[3]CO₂e calculated based on Global Warming Potentials (GWPs) obtained from 40 CFR Part 98 Subpart A Table A-1 (January 1, 2025). The CO₂e for CO₂ = 1, for CH₄ = 28, and for N₂O = 265.

Fact Sheet Attachment

Boiler: EP-BLR_03

Potential to Emit: HAPs					
Pollutant	Emission Factor		Potential Emissions		Emission Factor Source
	lb/MMscf	lb/MMBtu	lb/hr	tpy	
Arsenic	2.00E-04	-	8.50E-06	3.72E-05	AP-42 Table 1.4-4 (07/98)
Benzene	2.10E-03	-	8.93E-05	3.91E-04	AP-42 Table 1.4-3 (07/98)
Beryllium	1.20E-05	-	5.10E-07	2.23E-06	AP-42 Table 1.4-4 (07/98)
Cadmium	1.10E-03	-	4.68E-05	2.05E-04	AP-42 Table 1.4-4 (07/98)
Chromium	1.40E-03	-	5.95E-05	2.61E-04	AP-42 Table 1.4-4 (07/98)
Cobalt	8.40E-05	-	3.57E-06	1.56E-05	AP-42 Table 1.4-4 (07/98)
Formaldehyde	7.50E-02	-	3.19E-03	1.40E-02	AP-42 Table 1.4-3 (07/98)
Hexane	1.80	-	0.08	0.34	AP-42 Table 1.4-3 (07/98)
Manganese	3.80E-04	-	1.62E-05	7.07E-05	AP-42 Table 1.4-4 (07/98)
Mercury	2.60E-04	-	1.11E-05	4.84E-05	AP-42 Table 1.4-4 (07/98)
Naphthalene	6.10E-04	-	2.59E-05	1.14E-04	AP-42 Table 1.4-3 (07/98)
Nickel	2.10E-03	-	8.93E-05	3.91E-04	AP-42 Table 1.4-4 (07/98)
Selenium	2.40E-05	-	1.02E-06	4.47E-06	AP-42 Table 1.4-4 (07/98)
Toluene	3.40E-03	-	1.45E-04	6.33E-04	AP-42 Table 1.4-3 (07/98)
Benz(a)anthracene	1.80E-06	-	7.65E-08	3.35E-07	AP-42 Table 1.4-3 (07/98)
Benzo(a)pyrene	1.20E-06	-	5.10E-08	2.23E-07	AP-42 Table 1.4-3 (07/98)
Benzo(b)fluoranthene	1.80E-06	-	7.65E-08	3.35E-07	AP-42 Table 1.4-3 (07/98)
Chrysene	1.80E-06	-	7.65E-08	3.35E-07	AP-42 Table 1.4-3 (07/98)
Dibenzo(a,h)anthracene	1.20E-06	-	5.10E-08	2.23E-07	AP-42 Table 1.4-3 (07/98)
Indeno(1,2,3-cd)pyrene	1.80E-06	-	7.65E-08	3.35E-07	AP-42 Table 1.4-3 (07/98)
Dichlorobenzene	1.20E-03	-	5.10E-05	2.23E-04	AP-42 Table 1.4-3 (07/98)
Total HAPs			0.08	0.35	-

Fact Sheet Attachment

Nested Source Applicability Summary for Boilers: EP-BLR_01, EP-BLR_02, EP-BLR_03

Emission Point #	Emission Unit and Description	Maximum Heat Capacity
		MMBtu/hr
EP-BLR_01	EU-BLR_01: Natural Gas Boiler 1	43.35
EP-BLR_02	EU-BLR_02: Natural Gas Boiler 2	43.35
EP-BLR_03	EU-BLR_03: Natural Gas Boiler 3	43.35
Total ¹¹ =		130.05

¹¹Title 129, Chapter 2, Section 902.56J references 40 CFR §52.21(c)(1)(vii), which defines a stationary source for this source category as "Fossil-fuel boilers (or combination thereof) totaling more than 250 million British thermal units per hour heat input."

Potential Emissions Summary

Emission Point ID#	Potential Emissions (tpy)									
	PM ₁₀	PM _{2.5}	SO _x	NO _x	CO	Lead	VOC	GHGs	CO ₂ e	Total HAPs
EP-BLR_01	1.41	1.41	0.11	9.31	15.64	9.31E-05	1.97	22,211	22,234	0.34
EP-BLR_02	1.41	1.41	0.11	9.31	15.64	9.31E-05	1.97	22,211	22,234	0.34
EP-BLR_03	1.41	1.41	0.11	9.31	15.64	9.31E-05	1.97	22,211	22,234	0.34
Total Emissions	4.24	4.24	0.34	27.92	46.91	2.79E-04	5.92	66,634	66,701	1.01

100 tpy source category per 40 CFR Part 52.21(b)(1)(i)(a) only pertains to indirect-fired combustion units with cumulative maximum heat input capacity greater than 250 MMBtu/hr.

The combination of boiler heat inputs does not exceed 250 MMBtu/hour; thus, the boilers do not meet the definition of a stationary source for the source category defined in Title 129, Chapter 1, Section 002.56J*;
Title 129, Chapter 1, Section 002.58J for NSR purposes.

Fact Sheet Attachment

Emergency Engines: EP-ENG3

Firing Rate (each)	1.95	MMBtu/hr
Engine Size (each)	240	bhp
Fuel Type	Natural Gas	
Fuel Heating Value	1,020	Btu/scf
Hours of Operation	500	hr/yr

Potential to Emit: Criteria Pollutants and GHGs						
Pollutant	Emission Factor			Potential Emissions		Emission Factor Source
	lb/MMscf	lb/MMBtu	g/kW-hr ^[1]	lb/hr	tpy	
PM ^[2]	9.91E-03	-	-	1.90E-05	4.74E-06	AP-42 Table 3.2-2 (08/00)
PM ₁₀	9.91E-03	-	-	1.90E-05	4.74E-06	AP-42 Table 3.2-2 (08/00)
PM _{2.5}	9.91E-03	-	-	1.90E-05	4.74E-06	AP-42 Table 3.2-2 (08/00)
SO ₂	5.88E-04	-	-	1.13E-06	2.82E-07	AP-42 Table 3.2-2 (08/00)
NO _x	-	-	2.7	1.06	0.26	NSPS Subpart JJJJ Table 1 ^[3]
CO	-	-	5.4	2.12	0.53	NSPS Subpart JJJJ Table 1 ^[3]
VOC	-	-	1.3	0.53	0.13	NSPS Subpart JJJJ Table 1 ^[3]
CO ₂	-	116.98	-	228.49	57.12	40 CFR Part 98 Subpart C Table C-1
CH ₄	-	2.20E-03	-	4.31E-03	1.08E-03	40 CFR Part 98 Subpart C Table C-2
N ₂ O	-	2.20E-04	-	4.31E-04	1.08E-04	40 CFR Part 98 Subpart C Table C-3
Total GHGs (mass basis)				228.50	57.12	-
Total GHGs (CO ₂ e) ^[4]				228.73	57.18	-

^[1]Potential emissions (lb/hr) calculated using the following formula with assumed 0.746 kW/bhp and 453.6 g/lb:

Potential Emissions $\left(\frac{\text{lb}}{\text{hr}}\right) = \text{Engine Size (bhp)} \times \text{EF} \left(\frac{\text{g}}{\text{kW-hr}}\right) \times 0.746 \left(\frac{\text{kW}}{\text{bhp}}\right) \times \frac{1}{453.6} \left(\frac{\text{lb}}{\text{g}}\right)$

^[2]For the purposes of these calculations, it is assumed PM = PM₁₀ = PM_{2.5}.

^[3]Emission factors obtained from 40 CFR Part 60 Subpart JJJJ Standards of Performance for Stationary Spark Ignition Internal Combustion Engines Table 1 - NO_x, CO, and VOC Emission Standards for Stationary Non-Emergency SI Engines ≥100 HP (Except Gasoline and Rich Burn LPG), Stationary SI Landfill/Digester Gas Engines, and Stationary Emergency Engines >25 HP for Emergency Engines with hp ≥ 130 and converted from g/bp-hr to g/kW-hr assuming 0.746 kW/bhp.

^[4]CO₂e calculated based on Global Warming Potentials (GWPs) obtained from 40 CFR Part 98 Subpart A Table A-1. The CO₂e for CO₂ = 1, for CH₄ = 25, and for N₂O = 298.

Fact Sheet Attachment
Emergency Engines: EP-ENG3

Potential to Emit: HAPs					
Pollutant	Emission Factor		Potential Emissions		Emission Factor Source
	lb/MMscf	lb/MMBtu	lb/hr	tpy	
1,2,3-Trimethylbenzene	-	3.54E-05	6.91E-05	1.73E-05	AP-42 Table 3.2-2 (08/00)
1,2,4-Trimethylbenzene	-	1.11E-04	2.17E-04	5.42E-05	AP-42 Table 3.2-2 (08/00)
1,3,5-Trimethylbenzene	-	1.80E-05	3.52E-05	8.79E-06	AP-42 Table 3.2-2 (08/00)
1,3-Butadiene	-	8.20E-04	1.60E-03	4.00E-04	AP-42 Table 3.2-2 (08/00)
2,2,4-Trimethylpentane	-	8.46E-04	1.65E-03	4.13E-04	AP-42 Table 3.2-2 (08/00)
Acenaphthene	-	1.33E-06	2.60E-06	6.49E-07	AP-42 Table 3.2-2 (08/00)
Acenaphthylene	-	3.17E-06	6.19E-06	1.55E-06	AP-42 Table 3.2-2 (08/00)
Acetaldehyde	-	7.76E-03	1.52E-02	3.79E-03	AP-42 Table 3.2-2 (08/00)
Acrolein	-	7.78E-03	1.52E-02	3.80E-03	AP-42 Table 3.2-2 (08/00)
Anthracene	-	7.18E-07	1.40E-06	3.51E-07	AP-42 Table 3.2-2 (08/00)
Benzene	-	1.94E-03	3.79E-03	9.47E-04	AP-42 Table 3.2-2 (08/00)
Benzo(c)pyrene	-	4.15E-07	8.11E-07	2.03E-07	AP-42 Table 3.2-2 (08/00)
Benzo(g,h,i)perylene	-	4.14E-07	8.09E-07	2.02E-07	AP-42 Table 3.2-2 (08/00)
Biphenyl	-	2.12E-04	4.14E-04	1.04E-04	AP-42 Table 3.2-2 (08/00)
Cyclopentane	-	2.27E-04	4.43E-04	1.11E-04	AP-42 Table 3.2-2 (08/00)
Ethylbenzene	-	3.97E-05	7.75E-05	1.94E-05	AP-42 Table 3.2-2 (08/00)
Fluoranthene	-	1.11E-06	2.17E-06	5.42E-07	AP-42 Table 3.2-2 (08/00)
Fluorene	-	5.67E-06	1.11E-05	2.77E-06	AP-42 Table 3.2-2 (08/00)
Formaldehyde	-	5.28E-02	1.03E-01	2.58E-02	AP-42 Table 3.2-2 (08/00)
Methanol	-	2.50E-03	4.88E-03	1.22E-03	AP-42 Table 3.2-2 (08/00)
Methyleyclohexane	-	1.23E-03	2.40E-03	6.01E-04	AP-42 Table 3.2-2 (08/00)
Methylene Chloride	-	2.00E-05	3.91E-05	9.77E-06	AP-42 Table 3.2-2 (08/00)
n-Hexane	-	1.11E-03	2.17E-03	5.42E-04	AP-42 Table 3.2-2 (08/00)
n-Nonane	-	1.10E-04	2.15E-04	5.37E-05	AP-42 Table 3.2-2 (08/00)
n-Octane	-	3.51E-04	6.86E-04	1.71E-04	AP-42 Table 3.2-2 (08/00)
n-Pentane	-	2.60E-03	5.08E-03	1.27E-03	AP-42 Table 3.2-2 (08/00)
Naphthalene	-	7.44E-05	1.45E-04	3.63E-05	AP-42 Table 3.2-2 (08/00)
Phenol	-	2.40E-05	4.69E-05	1.17E-05	AP-42 Table 3.2-2 (08/00)
Phenanthrene	-	1.04E-05	2.03E-05	5.08E-06	AP-42 Table 3.2-2 (08/00)
Pyrene	-	1.36E-06	2.66E-06	6.64E-07	AP-42 Table 3.2-2 (08/00)
Tetrachloroethane	-	2.48E-06	4.84E-06	1.21E-06	AP-42 Table 3.2-2 (08/00)
Toluene	-	4.08E-04	7.97E-04	1.99E-04	AP-42 Table 3.2-2 (08/00)
Vinyl Chloride	-	1.49E-05	2.91E-05	7.28E-06	AP-42 Table 3.2-2 (08/00)
Xylene	-	1.84E-04	3.59E-04	8.99E-05	AP-42 Table 3.2-2 (08/00)
Benzo(a)anthracene	-	7.63E-08	1.49E-07	3.73E-08	^[1]
Benzo(a)pyrene	-	3.48E-08	6.80E-08	1.70E-08	^[1]
Benzo(b)fluoranthene	-	1.66E-07	3.24E-07	8.11E-08	AP-42 Table 3.2-2 (08/00)
Benzo(k)fluoranthene	-	5.20E-07	1.02E-06	2.54E-07	^[1]
Chrysene	-	6.93E-07	1.35E-06	3.38E-07	AP-42 Table 3.2-2 (08/00)
Dibenz(a,h)anthracene	-	1.07E-08	2.09E-08	5.23E-09	^[1]
Indeno(1,2,3-cd)pyrene	-	1.18E-07	2.30E-07	5.76E-08	^[1]
Total HAPs			0.16	0.04	-

^[1]Emission factors obtained from CATEF Database for 4-Stroke Lean Burn Engines (<650 HP) (January 2011).

Fact Sheet Attachment

Rendering EP-PBS3
Blood Drying EP-PBS4

Throughput	Rendering [meat and bone meal (MBM)]	10.91	dry ton/hr		
		95,571.6	dry ton/yr		
		21,820.0	lb/hr		
	Blood Dryer (blood meal)	0.59	dry ton/hr		
		5,168.4	dry ton/yr		
1,180.0		lb/hr			
Fuel Type		Natural Gas			
Blood Dryer Firing Rate		7.00	MMBtu/hr		
Scrubbers	16,000 cfm Venturi	2	scrubbers	CE-VS1	CE-VS2
	16,000 cfm Packed Bed	2	scrubbers	CE-PBS1	CE-PBS2
	24,000 cfm Venturi	1	scrubber	CE-VS3	
	100,000 cfm Packed Bed	2	scrubbers	CE-PBS3	CE-PBS4
Hours of Operation	MBM	8,760	hr/yr		
	Blood Dryer	8,760	hr/yr		
Fuel Heating Value		1,020	Btu/scf		
Venturi Scrubber min PM Control Efficiency		85%	percent		

CE-PBS3: 100,000 cfm Packed Bed Scrubber				
MBM Stream				
Pollutant	Emission Factor	Potential Emissions		Emission Factor Source
	lb/dry ton MBM	lb/hr	tpy	
PM ^[1]	0.10	1.14	4.99	^[2]
PM ₁₀	0.10	1.14	4.99	^[2]
PM _{2.5}	0.10	1.14	4.99	^[2]
SO ₂	0.012	0.13	0.58	^[2]
NO _x	0.0064	0.07	0.30	^[2]
CO	0.0058	0.06	0.28	^[2]
VOC	0.222	2.42	10.60	^[2]

^[1]For the purposes of these calculations, it is assumed PM = PM₁₀ = PM_{2.5}. A safety factor of 50% was applied to calculate PM emissions.

^[2]Emission factors obtained from "AP-42 Section 9.5.3 Meat Rendering Plants - Compliance emissions testing of the Supercooker at IPB, Inc., Dakota City, NE (TRC Environmental Corporation for IBP, Inc.) (July 1998)". A safety factor of 50% was applied to calculate VOC emissions.

CE-PBS4: 100,000 cfm Packed Bed Scrubber						
Blood Dryer Stream						
Pollutant	Emission Factor			Potential Emissions		Emission Factor Source
	lb/dry ton blood meal	lb/MMscf	lb/MMBtu	lb/hr	tpy	
PM ^[1]	1.83	-	-	1.08	4.73	AP-42 Table 9.5.3-2 (09/95)
PM ₁₀	1.83	-	-	1.08	4.73	AP-42 Table 9.5.3-2 (09/95)
PM _{2.5}	1.83	-	-	1.08	4.73	AP-42 Table 9.5.3-2 (09/95)
H ₂ S	0.08	-	-	0.05	0.21	AP-42 Table 9.5.3-2 (09/95)
SO ₂	-	0.60	-	4.12E-03	0.02	AP-42 Table 1.4-2 (07/98)
NO _x	-	100	-	0.69	3.01	AP-42 Table 1.4-1 (07/98)
CO	-	84	-	0.58	2.52	AP-42 Table 1.4-1 (07/98)
Lead	-	0.0005	-	3.43E-06	1.50E-05	AP-42 Table 1.4-2 (07/98)
VOC	0.36	-	-	0.21	0.93	^[2]
CO ₂	-	-	116.98	818.84	3,586.52	40 CFR Part 98 Subpart C Table C-1
CH ₄	-	-	2.20E-03	0.02	0.07	40 CFR Part 98 Subpart C Table C-2
N ₂ O	-	-	2.20E-04	1.54E-03	6.76E-03	40 CFR Part 98 Subpart C Table C-2
Total GHGs (mass basis)				818.86	3,586.59	-
Total GHGs (CO ₂ e) ^[3]				819.68	3,590.20	-

^[1]For the purposes of these calculations, it is assumed PM = PM₁₀ = PM_{2.5}. A safety factor of 50% was applied to calculate PM emissions.

^[2]VOC emission factor obtained from "AP-42 Section 9.5.3 Meat Rendering Plants - Total Hydrocarbon emissions of the blood drier stack (TRC Environmental Corporation for IBP, Inc., Dakota City, NE) (September 1997)". A safety factor of 50% was applied to calculate VOC emissions.

^[3]CO₂e calculated based on Global Warming Potentials (GWPs) obtained from 40 CFR Part 98 Subpart A Table A-1 (January 1, 2025). The CO₂e for CO₂ = 1, for CH₄ = 28, and for N₂O = 265.

Fact Sheet Attachment

Rendering EP-PBS3
Blood Drying EP-PBS4

CE-PBS4: 100,000 cfm Packed Bed Scrubber					
Blood Dryer Stream					
Pollutant	Emission Factor		Potential Emissions		Emission Factor Source
	lb/MMscf	lb/ton dry blood meal	lb/hr	tpy	
Benzene	2.10E-03	-	1.44E-05	6.31E-05	AP-42 Table 1.4-3 (07/98)
Dichlorobenzene	1.20E-03	-	8.24E-06	3.61E-05	AP-42 Table 1.4-3 (07/98)
Formaldehyde	7.50E-02	-	5.15E-04	2.25E-03	AP-42 Table 1.4-3 (07/98)
Hexane	1.80	-	0.01	0.05	AP-42 Table 1.4-3 (07/98)
Naphthalene	6.10E-04	-	4.19E-06	1.83E-05	AP-42 Table 1.4-3 (07/98)
Toluene	3.40E-03	-	2.33E-05	1.02E-04	AP-42 Table 1.4-3 (07/98)
Carbonyl Sulfide	-	7.00E-03	0.08	0.35	^[1]
Quinoline	-	-	0.22	0.98	^[2]
Benzo(a)pyrene	1.20E-06	-	8.24E-09	3.61E-08	AP-42 Table 1.4-3 (07/98)
Benzo(b)fluoranthene	1.80E-06	-	1.24E-08	5.41E-08	AP-42 Table 1.4-3 (07/98)
Chrysene	1.80E-06	-	1.24E-08	5.41E-08	AP-42 Table 1.4-3 (07/98)
Dibenzo(a,h)anthracene	1.20E-06	-	8.24E-09	3.61E-08	AP-42 Table 1.4-3 (07/98)
Indeno(1,2,3-cd)pyrene	1.80E-06	-	1.24E-08	5.41E-08	AP-42 Table 1.4-3 (07/98)
Arsenic Compounds	2.00E-04	-	1.37E-06	6.01E-06	AP-42 Table 1.4-4 (07/98)
Beryllium Compounds	1.20E-05	-	8.24E-08	3.61E-07	AP-42 Table 1.4-4 (07/98)
Cadmium Compounds	1.10E-03	-	7.55E-06	3.31E-05	AP-42 Table 1.4-4 (07/98)
Chromium Compounds	1.40E-03	-	9.61E-06	4.21E-05	AP-42 Table 1.4-4 (07/98)
Cobalt Compounds	8.40E-05	-	5.76E-07	2.52E-06	AP-42 Table 1.4-4 (07/98)
Manganese Compounds	3.80E-04	-	2.61E-06	1.14E-05	AP-42 Table 1.4-4 (07/98)
Mercury Compounds	2.60E-04	-	1.78E-06	7.82E-06	AP-42 Table 1.4-4 (07/98)
Nickel Compounds	2.10E-03	-	1.44E-05	6.31E-05	AP-42 Table 1.4-4 (07/98)
Selenium Compounds	2.40E-05	-	1.65E-07	7.21E-07	AP-42 Table 1.4-4 (07/98)
Total HAPs			1.42	6.22	^[3]

^[1]Carbonyl sulfide emission factor obtained from stack test conducted at IBP, Inc., Dakota City, NE (November 1997).

^[2]Quinoline emission factor derived from assumed VOC mass fraction and throughputs of both the rendering (MBM) and blood dryer streams.

^[3] Listed totals are the permitted limit for total HAP emissions from EP-PBS3 and EP-PBS4 as permitted in CP25-039.

VOC Constituents in Rendering Emission Exhaust			
VOC Constituent	Major or Lesser	Assumed VOC Mass Fraction	HAP?
Quinoline	Major	0.085	Yes
Organic Sulfides	Major	0.085	No
Disulfides	Major	0.085	No
C-4 to C-7 Aldehydes	Major	0.085	No
Trimethylamine	Major	0.085	No
C-4 Amines	Major	0.085	No
Dimethyl Pyrazine	Major	0.085	No
Other Pyrazines	Major	0.085	No
C-3 to C-4 Organic Acids	Major	0.085	No
C-4 to C-7 Alcohols	Lesser	0.06	No
Ketones	Lesser	0.06	No
Aliphatic Hydrocarbons	Lesser	0.06	No
Aromatic Compounds	Lesser	0.06	No
Total:		1.0050	-

Fact Sheet Attachment

Evaporators: EP-EVAP1, EP-EVAP2, EP-EVAP3, EP-EVAP4

Additive Parameters			
	Biocide	Antiscalant	Units
Throughput	280	100	gal/yr
Density	10	10	lb/gal
VOC Fraction	1	1	-
HAP Fraction ^[1]	-	1	-

^[1]HAP as Ethylene Glycol

Pollutant	Potential Emissions	
	lb/hr	tpy
Biocide VOC	0.32	1.40
Antiscalant VOC	0.11	0.50
Antiscalant HAP	0.11	0.50
Total VOC	0.43	1.90
Total HAP	0.11	0.50

Fact Sheet Attachment
MBM and Blood Shipping: EP-MBMSHIP, EP-BLDSHIP

MBM Transfer		
Maximum Throughput (meat and bone meat (MBM))	10.91	ton/hr
	21,820	lb/hr
	95,571.60	tpy
Control Equipment	None	
Hours of Operation	8,760	hr/yr

Dried Blood Transfer		
Maximum Throughput (blood meat)	0.59	ton/hr
	1,180	lb/hr
	5,168.40	tpy
Control Equipment	CE-BLDCYC	
Hours of Operation	8,760	hr/yr

MBM Transfer ^[1]					
Pollutant	Emission Factor ^[2]	Control Efficiency	Potential Emissions		Emission Factor Source
	lb/ton		lb/hr	tpy	
PM	0.111	0	1.21	5.30	AP-42 Table 9.9.1-1 (03/03)
PM ₁₀	0.035	0	0.39	1.69	AP-42 Table 9.9.1-1 (03/03)
PM _{2.5}	0.006	0	0.07	0.29	AP-42 Table 9.9.1-1 (03/03)

^[1]Accounts for the storage and shipment of MBM.
^[2]Emission factors used to calculate potential emissions are the sum of the storage bin (vent) and the grain shipping (truck) emission factors.

Dried Blood Transfer ^[1]					
Pollutant	Emission Factor ^[2]	Control Efficiency	Potential Emissions		Emission Factor Source
	lb/ton		lb/hr	tpy	
PM	0.111	50%	0.03	0.14	AP-42 Table 9.9.1-1 (03/03)
PM ₁₀	0.035	50%	0.01	0.05	AP-42 Table 9.9.1-1 (03/03)
PM _{2.5}	0.006	50%	1.77E-03	7.75E-03	AP-42 Table 9.9.1-1 (03/03)

^[1]Accounts for the storage and shipment of dried blood.
^[2]Emission factors used to calculate potential emissions are the sum of the storage bin (vent) and the grain shipping (truck) emission factors.

Fact Sheet Attachment
Dried Blood Hammermill/Cyclone System Baghouse: EP-BLDFLTR

Maximum Hourly Throughput 7 ton/hr

Pollutant	Emission Factor ^[1]	Total PTE	
	lb/ton	lb/hr	ton/yr
PM	0.012	0.08	0.37
PM ₁₀	0.012	0.08	0.37
PM _{2.5}	0.012	0.08	0.37

^[1] Few rendering emission factors exist, so emission factors from AP-42, Chapter 9.9.1 , Grain Elevators and Processing, Table 9.9.1-2 (05/2003) were used as an approximation.

Fact Sheet Attachment

Anti-Bacterial Processing Agent Chemicals: EP-CHEM

Peroxyacetic Acid Solution			Cattle	Solution Throughput		Acid Throughput	
per head	concentration	density	Throughput				
L	ppmv		head/day	gal/day	gal/yr	gal/yr	lb/gal
1308.56	75	1.27	1,500	518,584	189,283,118	14,229	10.56

Pollutant	Potential Emissions	
	lb/hr	tpy
VOC	17.15	75.13

Fact Sheet Attachment
Miscellaneous Natural Gas Combustion: EP-MISCGAS

Total Firing Rate	0.92	MMBtu/hr
Fuel Type	Natural Gas	
Hot Water Heater	0.66	MMBtu/hr
Space Heaters	0.26	MMBtu/hr
Fuel Heating Value	1,020	Btu/scf
Hours of Operation	8,760	hr/yr

Potential to Emit: Criteria Pollutants and GHGs					
Pollutant	Emission Factor		Potential Emissions		Emission Factor Source
	lb/MMscf	lb/MMBtu	lb/hr	tpy	
PM ^[1]	7.6	-	6.83E-03	0.03	AP-42 Table 1.4-2 (07/98)
PM ₁₀	7.6	-	6.83E-03	0.03	AP-42 Table 1.4-2 (07/98)
PM _{2.5}	7.6	-	6.83E-03	0.03	AP-42 Table 1.4-2 (07/98)
SO ₂	0.60	-	5.39E-04	2.36E-03	AP-42 Table 1.4-2 (07/98)
NO _x	100	-	0.09	0.39	AP-42 Table 1.4-1 (07/98)
CO	84	-	0.08	0.33	AP-42 Table 1.4-1 (07/98)
Lead	0.0005	-	4.50E-07	1.97E-06	AP-42 Table 1.4-2 (07/98)
VOC	5.5	-	4.94E-03	0.02	AP-42 Table 1.4-2 (07/98)
CO _e	-	116.98	107.27	469.83	40 CFR Part 98 Subpart C Table C-1
CH ₄	-	2.20E-03	2.02E-03	8.85E-03	40 CFR Part 98 Subpart C Table C-2
N ₂ O	-	2.20E-04	2.02E-04	8.85E-04	40 CFR Part 98 Subpart C Table C-3
Total GHGs (mass basis)			107.27	469.84	-
Total GHGs (tons CO ₂ e/yr) ^[2]			107.38	470.32	-

^[1]For the purposes of these calculations, it is assumed PM = PM₁₀ = PM_{2.5}.

^[2]CO₂e calculated based on Global Warming Potentials (GWPs) obtained from 40 CFR Part 98 Subpart A Table A-1 (January 1, 2025). The CO₂e for CO₂ = 1, for CH₄ = 28, and for N₂O = 265.

Potential to Emit: HAPs					
Pollutant	Emission Factor		Potential Emissions		Emission Factor Source
	lb/MMscf	lb/MMBtu	lb/hr	tpy	
Arsenic	2.00E-04	-	1.80E-07	7.88E-07	AP-42 Table 1.4-4 (07/98)
Benzene	2.10E-03	-	1.89E-06	8.27E-06	AP-42 Table 1.4-3 (07/98)
Beryllium	1.20E-05	-	1.08E-08	4.73E-08	AP-42 Table 1.4-4 (07/98)
Cadmium	1.10E-03	-	9.89E-07	4.33E-06	AP-42 Table 1.4-4 (07/98)
Chromium	1.40E-03	-	1.26E-06	5.51E-06	AP-42 Table 1.4-4 (07/98)
Cobalt	8.40E-05	-	7.55E-08	3.31E-07	AP-42 Table 1.4-4 (07/98)
Formaldehyde	7.50E-02	-	6.74E-05	2.95E-04	AP-42 Table 1.4-3 (07/98)
Hexane	1.80	-	1.62E-03	7.09E-03	AP-42 Table 1.4-3 (07/98)
Manganese	3.80E-04	-	3.42E-07	1.50E-06	AP-42 Table 1.4-4 (07/98)
Mercury	2.60E-04	-	2.34E-07	1.02E-06	AP-42 Table 1.4-4 (07/98)
Naphthalene	6.10E-04	-	5.48E-07	2.40E-06	AP-42 Table 1.4-3 (07/98)
Nickel	2.10E-03	-	1.89E-06	8.27E-06	AP-42 Table 1.4-4 (07/98)
Selenium	2.40E-05	-	2.16E-08	9.45E-08	AP-42 Table 1.4-4 (07/98)
Toluene	3.40E-03	-	3.06E-06	1.34E-05	AP-42 Table 1.4-3 (07/98)
Benz(a)anthracene	1.80E-06	-	1.62E-09	7.09E-09	AP-42 Table 1.4-3 (07/98)
Benzo(a)pyrene	1.20E-06	-	1.08E-09	4.73E-09	AP-42 Table 1.4-3 (07/98)
Benzo(b)fluoranthene	1.80E-06	-	1.62E-09	7.09E-09	AP-42 Table 1.4-3 (07/98)
Chrysene	1.80E-06	-	1.62E-09	7.09E-09	AP-42 Table 1.4-3 (07/98)
Dibenzo(a,h)anthracene	1.20E-06	-	1.08E-09	4.73E-09	AP-42 Table 1.4-3 (07/98)
Indeno(1,2,3-cd)pyrene	1.80E-06	-	1.62E-09	7.09E-09	AP-42 Table 1.4-3 (07/98)
Dichlorobenzene	1.20E-03	-	1.08E-06	4.73E-06	AP-42 Table 1.4-3 (07/98)
Total HAPs			1.70E-03	7.43E-03	-

Fact Sheet Attachment

Makeup Air Units (MUAs) and Rooftop Units (RTUs): EP-MUA_RTU

Total Firing Rate	141.30	MMBtu/hr
Fuel Type	Natural Gas	
Fuel Heating Value	1,020	Btu/scf
F _d Factor ^[1]	8,710	dscf/MMBtu
Hours of Operation	8,760	hr/yr

^[1] F_d Factor used in 40 CFR Part 60, Appendix A, Method 19

Exhaust Flow Rates	Roof Vents	634,500	cfm
	CE-PBS3	60,000	cfm
	CE-PBS4	84,000	cfm
	Total	778,500	cfm
Exhaust Flow Rate Fraction ^[1]		0.18	^[2]

^[1] 18% of total MUA emissions emitted through EP-PBS3 and EP-PBS4

^[2] Exhaust Flow Rate Fraction limited by both flow and heat input:

$$\text{rendering scf} / \text{total scf} \quad \text{and} \quad \text{rendering Btu} / \text{total Btu}$$

Emission Point ID#	Emission Point Description	Exhaust Flow Rate	
		m ³ /s	cfm
VENT01	Vent 01 for MUAs/RTUs	4.72	10,000
VENT02	Vent 02 for MUAs/RTUs	8.50	18,000
VENT03	Vent 03 for MUAs/RTUs	9.44	20,000
VENT04	Vent 04 for MUAs/RTUs	8.50	18,000
VENT05	Vent 05 for MUAs/RTUs	9.44	20,000
VENT06	Vent 06 for MUAs/RTUs	3.54	7,500
VENT07	Vent 07 for MUAs/RTUs	3.54	7,500
VENT08	Vent 08 for MUAs/RTUs	8.50	18,000
VENT09	Vent 09 for MUAs/RTUs	7.08	15,000
VENT10	Vent 10 for MUAs/RTUs	8.50	18,000
VENT11	Vent 11 for MUAs/RTUs	8.50	18,000
VENT12	Vent 12 for MUAs/RTUs	8.50	18,000
VENT13	Vent 13 for MUAs/RTUs	8.50	18,000
VENT14	Vent 14 for MUAs/RTUs	4.72	10,000
VENT15	Vent 15 for MUAs/RTUs	4.72	10,000
VENT16	Vent 16 for MUAs/RTUs	7.08	15,000
VENT17	Vent 17 for MUAs/RTUs	9.44	20,000
VENT18	Vent 18 for MUAs/RTUs	9.44	20,000
VENT19	Vent 19 for MUAs/RTUs	9.44	20,000
VENT20	Vent 20 for MUAs/RTUs	11.80	25,000
VENT21	Vent 21 for MUAs/RTUs	11.80	25,000
VENT22	Vent 22 for MUAs/RTUs	11.80	25,000
VENT23	Vent 23 for MUAs/RTUs	11.80	24,000
VENT24	Vent 24 for MUAs/RTUs	11.33	20,000
VENT25	Vent 25 for MUAs/RTUs	9.44	20,000
VENT26	Vent 26 for MUAs/RTUs	9.44	20,000
VENT27	Vent 27 for MUAs/RTUs	9.44	20,000
VENT28	Vent 28 for MUAs/RTUs	9.44	20,000
VENT29	Vent 29 for MUAs/RTUs	9.44	20,000
VENT30	Vent 30 for MUAs/RTUs	9.44	20,000
VENT31	Vent 31 for MUAs/RTUs	9.44	20,000
VENT32	Vent 32 for MUAs/RTUs	9.44	20,000
VENT33	Vent 33 for MUAs/RTUs	9.44	20,000
VENT34	Vent 34 for MUAs/RTUs	5.66	12,000
VENT35	Vent 35 for MUAs/RTUs	9.44	20,000
VENT36	Vent 36 for MUAs/RTUs	1.18	2,500

MUA	Heat Input MMBtu/hr
Hide On 1	7.5
Hide On 2	7.5
Hide Off 1	7.5
Hide Off 2	7.5
Offal	5
Tripe Room	5
Hot Cattle	2.5
Basement	7.5
Fab Floor 1	12
Fab Floor 2	12
Rendering 1	5
Rendering 2	5
Hides	7.5
Miscellaneous	10
Test & Hold	0.5
Red Offal	1
Fab Floor	3
Fab Floor	13
Fab Floor	13
Red Offal	4.5
RTU	4.8

Fact Sheet Attachment

Makeup Air Units (MUAs) and Rooftop Units (RTUs): EP-MUA_RTU

Potential to Emit: Criteria Pollutants and GHGs					
Pollutant	Emission Factor		Potential Emissions		Emission Factor Source
	lb/MMscf	lb/MMBtu	lb/hr	tpy	
PM ^[1]	7.6	-	1.05	4.61	AP-42 Table 1.4-2 (07/98)
PM ₁₀	7.6	-	1.05	4.61	AP-42 Table 1.4-2 (07/98)
PM _{2.5}	7.6	-	1.05	4.61	AP-42 Table 1.4-2 (07/98)
SO ₂	0.60	-	0.08	0.36	AP-42 Table 1.4-2 (07/98)
NO _x	100	-	11.02	48.27	[2]
CO	84	-	9.29	40.71	[3]
Pb	0.0005	-	6.93E-05	3.03E-04	AP-42 Table 1.4-3 (07/98)
VOC	5.5	-	0.76	3.34	AP-42 Table 1.4-2 (07/98)
CO ₂	-	116.98	16,528.87	72,396.45	40 CFR Part 98 Subpart C Table C-1
CH ₄	-	2.20E-03	0.31	1.36	40 CFR Part 98 Subpart C Table C-3
N ₂ O	-	2.20E-04	0.03	0.14	40 CFR Part 98 Subpart C Table C-3
Total GHGs (mass basis)			16,529.21	72,397.95	-
Total GHGs (tons CO ₂ e/yr) ^[4]			16,545.85	72,471.22	-

^[1] For the purposes of these calculations, it is assumed PM = PM₁₀ = PM_{2.5}.^[2] NO_x emissions calculated per unit. See MUA/RTU NO_x Emissions Table for more details.^[3] CO emissions calculated per unit. See MUA/RTU CO Emissions Table for more details.^[4] CO₂e calculated based on Global Warming Potentials (GWPs) obtained from 40 CFR Part 98 Subpart A Table A-1 (January 1, 2025). The CO₂e for CO₂ = 1, for CH₄ = 28, and for N₂O = 265.

Potential to Emit: HAPs					
Pollutant	Emission Factor		Potential Emissions		Emission Factor Source
	lb/MMscf	lb/MMBtu	lb/hr	tpy	
Arsenic	2.00E-04	-	2.77E-05	1.21E-04	AP-42 Table 1.4-4 (07/98)
Benzene	2.10E-03	-	2.91E-04	1.27E-03	AP-42 Table 1.4-3 (07/98)
Beryllium	1.20E-05	-	1.66E-06	7.28E-06	AP-42 Table 1.4-4 (07/98)
Cadmium	1.10E-03	-	1.52E-04	6.67E-04	AP-42 Table 1.4-4 (07/98)
Chromium	1.40E-03	-	1.94E-04	8.49E-04	AP-42 Table 1.4-4 (07/98)
Cobalt	8.40E-05	-	1.16E-05	5.10E-05	AP-42 Table 1.4-4 (07/98)
Formaldehyde	7.50E-02	-	1.04E-02	0.05	AP-42 Table 1.4-3 (07/98)
Hexane	1.80	-	0.25	1.09	AP-42 Table 1.4-3 (07/98)
Manganese	3.80E-04	-	5.26E-05	2.31E-04	AP-42 Table 1.4-4 (07/98)
Mercury	2.60E-04	-	3.60E-05	1.58E-04	AP-42 Table 1.4-4 (07/98)
Naphthalene	6.10E-04	-	8.45E-05	3.70E-04	AP-42 Table 1.4-3 (07/98)
Nickel	2.10E-03	-	2.91E-04	1.27E-03	AP-42 Table 1.4-4 (07/98)
Selenium	2.40E-05	-	3.32E-06	1.46E-05	AP-42 Table 1.4-4 (07/98)
Toluene	3.40E-03	-	4.71E-04	2.06E-03	AP-42 Table 1.4-3 (07/98)
Benz(a)anthracene	1.80E-06	-	2.49E-07	1.09E-06	AP-42 Table 1.4-3 (07/98)
Benzo(a)pyrene	1.20E-06	-	1.66E-07	7.28E-07	AP-42 Table 1.4-3 (07/98)
Benzo(b)fluoranthene	1.80E-06	-	2.49E-07	1.09E-06	AP-42 Table 1.4-3 (07/98)
Chrysene	1.80E-06	-	2.49E-07	1.09E-06	AP-42 Table 1.4-3 (07/98)
Dibenzo(a,h)anthracene	1.20E-06	-	1.66E-07	7.28E-07	AP-42 Table 1.4-3 (07/98)
Indeno(1,2,3-cd)pyrene	1.80E-06	-	2.49E-07	1.09E-06	AP-42 Table 1.4-3 (07/98)
Dichlorobenzene	1.20E-03	-	1.66E-04	7.28E-04	AP-42 Table 1.4-3 (07/98)
Total HAPs			0.26	1.15	-

Fact Sheet Attachment

Makeup Air Units (MUAs) and Rooftop Units (RTUs): EP-MUA_RTU

MUA/RTU PM Emissions					
MUA	Heat Input MMBtu/hr	Emission Factor		Potential Emissions	
		lb/MMscf ^[1]	ppmv	lb/hr	tpy
Hide On 1	7.5	7.6	-	0.06	0.24
Hide On 2	7.5	7.6	-	0.06	0.24
Hide Off 1	7.5	7.6	-	0.06	0.24
Hide Off 2	7.5	7.6	-	0.06	0.24
Offal	5	7.6	-	0.04	0.16
Tripe Room	5	7.6	-	0.04	0.16
Hot Cattle	2.5	7.6	-	0.02	0.08
Basement	7.5	7.6	-	0.06	0.24
Fab Floor 1	12	7.6	-	0.09	0.39
Fab Floor 2	12	7.6	-	0.09	0.39
Rendering 1	5	7.6	-	0.04	0.16
Rendering 2	5	7.6	-	0.04	0.16
Hides	7.5	7.6	-	0.06	0.24
Miscellaneous	10	7.6	-	0.07	0.33
Test & Hold	0.5	7.6	-	3.73E-03	0.02
Red Offal	1	7.6	-	7.45E-03	0.03
Fab Floor	3	7.6	-	0.02	0.10
Fab Floor	13	7.6	-	0.10	0.42
Fab Floor	13	7.6	-	0.10	0.42
Red Offal	4.5	7.6	-	0.03	0.15
RTU	4.8	7.6	-	0.04	0.16
Total PM Emissions				1.05	4.61

^[1]Emission factors obtained from AP-42 Table 1.4-1 (07/98).

MUA/RTU NO _x Emissions					
MUA	Heat Input MMBtu/hr	Emission Factor		Potential Emissions	
		lb/MMscf ^[1]	ppmv ^[2]	lb/hr	tpy
Hide On 1	7.5	100	-	0.74	3.22
Hide On 2	7.5	100	-	0.74	3.22
Hide Off 1	7.5	100	-	0.74	3.22
Hide Off 2	7.5	100	-	0.74	3.22
Offal ^[3]	5	-	0.33	1.74E-03	7.64E-03
Tripe Room	5	100	-	0.49	2.15
Hot Cattle	2.5	100	-	0.25	1.07
Basement	7.5	100	-	0.74	3.22
Fab Floor 1 ^[3]	12	-	0.33	4.19E-03	0.02
Fab Floor 2 ^[3]	12	-	0.33	4.19E-03	0.02
Rendering 1	5	100	-	0.49	2.15
Rendering 2	5	100	-	0.49	2.15
Hides	7.5	100	-	0.74	3.22
Miscellaneous	10	100	-	0.98	4.29
Test & Hold	0.5	100	-	0.05	0.21
Red Offal	1	100	-	0.10	0.43
Fab Floor	3	100	-	0.29	1.29
Fab Floor	13	100	-	1.27	5.58
Fab Floor	13	100	-	1.27	5.58
Red Offal	4.5	100	-	0.44	1.93
RTU	4.8	100	-	0.47	2.06
Total NO_x Emissions				11.02	48.27

^[1]Emission factors obtained from AP-42 Table 1.4-1 (07/98).^[2]Emission factors obtained from vendor with assumed 80°F temperature increase.^[3]Potential emissions (lb/hr) calculated using the following formula with assumed 379 scf of gas at 60°F and 1 atm and 46.01 lb/lb-mol:

$$\text{Potential Emissions} \left(\frac{\text{lb}}{\text{hr}} \right) = \text{Heat Input} \left(\frac{\text{MMBtu}}{\text{hr}} \right) \times \text{F}_d \text{ factor} \left(\frac{\text{lb}}{\text{MMBtu}} \right) \times \text{EF} \left(\frac{\text{lb}}{\text{scf}} \right) \times \frac{1}{10^6} \times \frac{1}{379} \times \text{MW} \left(\frac{\text{lb}}{\text{lb-mol}} \right)$$

Fact Sheet Attachment
Makeup Air Units (MUAs) and Rooftop Units (RTUs): EP-MUA_RTU

MUA	MUA/RTU CO Emissions				
	Heat Input	Emission Factor		Potential Emissions	
		MMBtu/hr	lb/MMscf ⁽¹⁾	ppmv ⁽²⁾	
Hide On 1	7.5	84	-	0.62	2.71
Hide On 2	7.5	84	-	0.62	2.71
Hide Off 1	7.5	84	-	0.62	2.71
Hide Off 2	7.5	84	-	0.62	2.71
Offal ⁽³⁾	5	-	1.5	7.93E-03	0.03
Tripe Room	5	84	-	0.41	1.80
Hot Cattle	2.5	84	-	0.21	0.90
Basement	7.5	84	-	0.62	2.71
Fab Floor 1 ⁽³⁾	12	-	1.5	0.02	0.08
Fab Floor 2 ⁽³⁾	12	-	1.5	0.02	0.08
Rendering 1	5	84	-	0.41	1.80
Rendering 2	5	84	-	0.41	1.80
Hides	7.5	84	-	0.62	2.71
Miscellaneous	10	84	-	0.82	3.61
Test & Hold	0.5	84	-	0.04	0.18
Red Offal	1	84	-	0.08	0.36
Fab Floor	3	84	-	0.25	1.08
Fab Floor	13	84	-	1.07	4.69
Fab Floor	13	84	-	1.07	4.69
Red Offal	4.5	84	-	0.37	1.62
RTU	4.8	84	-	0.40	1.73
Total CO Emissions				9.29	40.71

⁽¹⁾Emission factors obtained from AP-42 Table 1.4-1 (07/98).
⁽²⁾Emission factors obtained from vendor with assumed 80°F temperature increase.
⁽³⁾Potential emissions (lb/hr) calculated using the following formula with assumed 379 scf of gas at 60°F and 1 atm and 46.01 lb/lb-mol:
Potential Emissions $\left(\frac{lb}{hr}\right) = \text{Heat Input} \left(\frac{MMBtu}{hr}\right) \times F_d \text{ factor} \left(\frac{lb/scf}{MMBtu}\right) \times EF \text{ (ppmv)} \times \frac{1}{10^6} \times \frac{1}{379} \left(\frac{lb/mol}{scf}\right) \times MW \left(\frac{lb}{lb/mol}\right)$

Fact Sheet Attachment
Haul Roads: EP-ROAD

Paved roads {AP-42 Chapter 13.2.1 (1/11)}

Equation (2): $E = k \times (sL)^{0.91} \times (W)^{1.02} \times \left(1 - \frac{P}{4 \times 365}\right)$

	<i>k</i>
PM	0.011
PM ₁₀	0.0022
PM _{2.5}	0.00054

Unpaved roads {AP-42 Chapter 13.2.2 (11/06)}

Equation (1a): $E = k \times \left(\frac{sC}{12}\right)^a \times \left(\frac{W}{3}\right)^b \times \left(\frac{365-P}{365}\right) \times \left(\frac{S}{30}\right)^d \times (1-CE)$
(Modified)

	<i>k</i>	<i>a</i>	<i>b</i>	<i>d</i>
PM	4.9	0.7	0.45	0.3
PM ₁₀	1.5	0.9	0.45	0.5
PM _{2.5}	0.15	0.9	0.45	0.5

Haul Road / Traffic Parameters											
Activity / Road Description	Road Type	Silt Value	Roundtrip Length (feet)		Truck Weight (tons)			Ave. Speed (mph)	Unrestricted Maximum Throughput (units/yr)	Ave. Truck Capacity (units/truck)	Annual VMT
			empty	full	empty	full	Ave.				
18 Wheel Cattle Trucks	p	6.00	#####	2,487.5	15	44	29.5	30	423,400	29 ton	13,757
Goose-Neck Cattle Trucks	p	6.00	#####	2,487.5	15	44	29.5	30	105,850	29 ton	3,439
18 Wheel Refrigerated Trucks	p	6.00	#####	2,487.5	15	44	29.5	30	222,285	29 ton	7,222
Rendering Finished Product Trucks	p	6.00	#####	2,487.5	15	44	29.5	30	63,510	29 ton	2,063
Hide Trucks	p	6.00	#####	2,487.5	15	44	29.5	30	21,170	29 ton	688
Delivery Trucks	p	6.00	#####	2,487.5	15	44	29.5	30	105,850	29 ton	3,439
											-
											-
											-
											-

Emission Calculations						
	Emission Factors (lb/VMT)			Potential Emissions (ton/yr)		
	PM	PM ₁₀	PM _{2.5}	PM	PM ₁₀	PM _{2.5}
18 Wheel Cattle Trucks	1.66	0.33	0.08	11.44	2.29	0.56
Goose-Neck Cattle Trucks	1.66	0.33	0.08	2.86	0.57	0.14
18 Wheel Refrigerated Trucks	1.66	0.33	0.08	6.01	1.20	0.29
Rendering Finished Product Trucks	1.66	0.33	0.08	1.72	0.34	0.08
Hide Trucks	1.66	0.33	0.08	0.57	0.11	0.03
Delivery Trucks	1.66	0.33	0.08	2.86	0.57	0.14
Total Annual Emissions (tpy):				25.46	5.09	1.25
Total Hourly Emissions (lb/hr):				5.81	1.16	0.29

Description of Constants/Variables

E: haul road emissions (lb/VMT)
k, d: dimensionless constants from Draft AP-42 Chapter 13.IV (paved)
k, a, b, c, d: dimensionless constants from AP-42 Tables 13.2.1-1 & 13.2.2-2 (unpaved)
sL: silt loading (g/m²) of paved road surface
sC: silt content (%) of unpaved road surface
W: average vehicle weight (tons)
P: days/yr with at least 0.01" of precipitation
P = 90 default = 90
S: mean vehicle speed on road (mph)
default = 30, minimum = 15
CE: unpaved road dust control efficiency
CE = 0 % default = 0%
VMT: vehicle miles traveled

Fact Sheet AttachmentTitle 129, Chapter 15, Section **001***; Title 129, Chapter 15, Section **001** ApplicabilityChapter 15, Section **001.01** *; Chapter 15, Section **001.01**For process weight rates up to 60,000 lb/hr: $E = 4.10 \times p^{0.67}$ For process weights in excess of 60,000 lb/hr: $E = 55.0 \times p^{0.11} - 40$

where E = rate of emissions in lb/hr and p = process weight rate in ton/hr

Emission Point ID#	Emission Unit / Process Description	Throughput	p	E	Unit PM Emission Rate
		lb/hr	ton/hr	lb/hr	lb/hr
EP-PBS3	Rendering	21,820	10.91	20.33	1.14
EP-PBS4	Blood Drying	1,180	0.59	2.88	1.08
EP-MBMSHIP	EU-MBMSHIP1	21,820	10.91	20.33	1.21
EP-BLDSHIP	EU-BLDSHIP	1,180	0.59	2.88	0.03

Chapter 15, Section **001.02** *; Chapter 15, Section **001.02**

Total Heat Input	Maximum Allowable Emissions of PM
MMBtu/hr	lb/MMBtu
10 or less	0.60
Between 10 and 10,000	$1.0261^{0.233}$
10,000 or more	0.12

Emission Point ID#	Emission Unit Description	Heat Input	Allowable PM Emissions	Unit PM Emission Rate	
		MMBtu/hr	lb/MMBtu	lb/hr	lb/MMBtu
EP-BLR_01	Natural Gas Boiler 1	43.35	0.43	0.32	7.45E-03
EP-BLR_02	Natural Gas Boiler 2	43.35	0.43	0.32	7.45E-03
EP-BLR_03	Natural Gas Boiler 3	43.35	0.43	0.32	7.45E-03
EP-ENG3	Emergency Backup Engine	1.95	0.60	1.90E-05	9.72E-06
EP-PBS4	Blood Dryer	7.00	0.60	1.08	0.15
EP-MISCGAS	Miscellaneous Space Heater	0.92	0.60	6.83E-03	7.45E-03
EP-MUA_RTU	Makeup Air Units and Rooftop Units	141.30	-	1.05	7.45E-03
	Hide On 1	7.50	0.60	0.06	7.45E-03
	Hide On 2	7.50	0.60	0.06	7.45E-03
	Hide Off 1	7.50	0.60	0.06	7.45E-03
	Hide Off 2	7.50	0.60	0.06	7.45E-03
	Offal	5.00	0.60	0.04	7.45E-03
	Tripe Room	5.00	0.60	0.04	7.45E-03
	Hot Cattle	2.50	0.60	0.02	7.45E-03
	Basement	7.50	0.60	0.06	7.45E-03
	Fab Floor 1	12.00	0.58	0.09	7.45E-03
	Fab Floor 2	12.00	0.58	0.09	7.45E-03
	Rendering 1	5.00	0.60	0.04	7.45E-03
	Rendering 2	5.00	0.60	0.04	7.45E-03
	Hides	7.50	0.60	0.06	7.45E-03
	Miscellaneous	10.00	0.60	0.07	7.45E-03
	Test & Hold	0.50	0.60	3.73E-03	7.45E-03
	Red Offal	1.00	0.60	7.45E-03	7.45E-03
	Fab Floor	3.00	0.60	0.02	7.45E-03
	Fab Floor	13.00	0.56	0.10	7.45E-03
	Fab Floor	13.00	0.56	0.10	7.45E-03
	Red Offal	4.50	0.60	0.03	7.45E-03
	RTU	4.80	0.60	0.04	7.45E-03