

Commonwealth of Kentucky
Division for Air Quality
STATEMENT OF BASIS / SUMMARY

Title V, Construction / Operating
Permit: V-21-034 R2

6303 State Highway 425
Henderson, KY 42420

November 27, 2023
Jonathon Hughes, Reviewer

SOURCE ID: 21-101-00167
AGENCY INTEREST: 169648
ACTIVITY: APE20230004

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SECTION 1 – SOURCE DESCRIPTION

SIC Code and description: 2631, paperboard mills. 2653, corrugated and solid fiber boxes.

Single Source Det. Yes No If Yes, Affiliated Source AI:

Source-wide Limit Yes No If Yes, See Section 4, Table A

28 Source Category Yes No If Yes, Category: Fossil-fuel boilers, or combination of fossil-fuel boilers, totaling more than 250 million BTUs per hour heat input (Nested source for boilers EU01, EU08 and EU 16, source as a whole is not a 28 source category)

County: Henderson

Nonattainment Area N/A PM₁₀ PM_{2.5} CO NO_x SO₂ Ozone Lead
If yes, list Classification:

PTE* greater than 100 tpy for any criteria air pollutant Yes No
If yes, for what pollutant(s)?
 PM₁₀ PM_{2.5} CO NO_x SO₂ VOC

PTE* greater than 250 tpy for any criteria air pollutant Yes No
If yes, for what pollutant(s)?
 PM₁₀ PM_{2.5} CO NO_x SO₂ VOC

PTE* greater than 10 tpy for any single hazardous air pollutant (HAP) Yes No
If yes, list which pollutant(s):

PTE* greater than 25 tpy for combined HAP Yes No

*PTE does not include self-imposed emission limitations.

Description of Facility:

Operations consist of a paperboard mill and corrugating facility located in adjoining buildings on the same property under common ownership and control (Pratt Industries, Inc.).

The paperboard mill (Pratt Paper (KY), LLC) produces paperboard (medium and linerboard) from 100 percent waste and recycled paper.

The corrugating facility (Pratt (Henderson Corrugating), LLC) manufactures corrugated sheet from paperboard supplied by the mill and then converts sheet to corrugated box products and printed corrugated sheets.

SECTION 2 – CURRENT APPLICATION AND EMISSION SUMMARY FORM

Permit Number: V-21-034 R2

Activities: APE20230004

Received: September 1, 2023

Application Complete Date: November 22, 2023

Permit Action: Initial Renewal Significant Rev Minor Rev Administrative

Construction/Modification Requested? Yes No NSR Applicable? Yes No

Previous 502(b)(10) or Off-Permit Changes incorporated with this permit action Yes No

Description of Action:

Revision to add three (3) rental boilers (EU 16) and modify throughputs of various equipment. An operating limitation of 1,000 hours per 12-month rolling period applies to the rental boilers.

V-21-034 R2 Emission Summary				
Pollutant	2020 Actual (tpy)	Previous PTE V-21-034 R1 (tpy)	Change (tpy)	Revised PTE V-21-034 R2 (tpy)
CO	N/A	111	2	113
NO _x	N/A	82.5	8.9	91.4
PT	N/A	15.8	-0.3	15.5
PM ₁₀	N/A	15.8	-0.3	15.5
PM _{2.5}	N/A	12.9	2.6	15.5
SO ₂	N/A	8.22	-0.05	8.17
VOC	N/A	202	-3	199
Lead	N/A	0.001	0	0.001
Greenhouse Gases (GHGs)				
Carbon Dioxide	N/A	303020	-11096	291924
Methane	N/A	114	0	114
Nitrous Oxide	N/A	5.21	-4.82**	0.538
CO ₂ Equivalent (CO ₂ e)	N/A	307423	-12492	294931
Hazardous Air Pollutants (HAPs)				
Hydrogen Sulfide	N/A	0.08*	0	0.08*
Glycol Ethers	N/A	3.87	-0.18	3.69
Hexane	N/A	4.25	-0.17	4.08
Combined HAPs:	N/A	9.05	-0.41	8.64

* Controlled. Source must operate scrubber and flare at all times emissions are vented from EU 04.

** Change due to using 40 CFR Part 1098 emission factors instead of AP-42 for greenhouse gases for the boilers.

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS

Emission Unit 01: Mill Boiler #1 (Rentech)				
Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
PM	0.10 lb/MMBtu	401 KAR 59:015, Section 4(1)(c)	0.002 lb/MMBtu From Boiler Manufacturer	Assumed based upon natural gas combustion
Opacity	20% opacity	401 KAR 59:015, Section 4(2)	N/A	Assumed based upon natural gas combustion
SO ₂	0.8 lbs/MMBtu	401 KAR 59:015, Section 5(1)	0.6 lb/MMscf, AP-42 Chapter 1.4.	Assumed based upon natural gas combustion
NO _x	0.2 lbs/MMBtu	40 CFR Part 60 Subpart Db	0.018 lb/MMBtu From Boiler Manufacturer	Performance testing, 40 CFR 60.46b(e)
NO _x	50 tons per year	401 KAR 51:160	Established during performance testing	Annual recordkeeping

Initial Construction Date: 9/2022

Process Description:

Provides process steam to the paper machine pre- and after-dryer cylinders
 Maximum Continuous Rating: 428.0 MMBtu/hr
 Fuels: Natural gas and biogas (produced from anaerobic digester (EU 04))
 Control: Low NO_x burners, FGR and O₂ Trim System

Applicable Regulations:

401 KAR 51:160, NO_x requirements for large utility and industrial boilers

401 KAR 51:190, Banking and trading NO_x allowances

401 KAR 59:015, New indirect heat exchangers

401 KAR 60:005, Section 2(2)(c) 40 C.F.R. 60.40b through 60.49b (Subpart Db), Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units

Non-applicable Regulation:

401 KAR 51:017, Prevention of significant deterioration of air quality is not applicable since unrestricted potential to emit of all criteria air pollutants for this emission unit is below that of a major source threshold.

401 KAR 63:002 Section 2(4)(jjjj) 40 C.F.R. 63.11193 through 63.11237, Tables 1 through 8 (Subpart JJJJJ), National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources is not applicable since the boiler combust only gaseous fuels.

Comments:

EU01 Mill Boiler has capacity 428 MMBtu/hour which is one of the PSD 28 source categories (fossil fuel boilers, or combinations thereof, with a heat input greater than 250 MMBtu/hr). The facility boilers (EU01 Mill Boiler, EU 08 Corrugating Boiler and EU 16 Three (3) Rental Boilers) are together considered a nested source for PSD. For the nested source on their own, major stationary source status is defined at 100 tpy or

Emission Unit 01: Mill Boiler #1 (Rentech)

more potential emissions for a regulated NSR pollutant. The unrestricted potential to emit for this nested source is below the major PSD source thresholds.

The stack test results of NO_x and CO emissions will be used to verify the potential emissions of NO_x and CO to ensure they are below 100 tpy PSD thresholds.

Emission Unit 02: Stock Prep/Hydropulping

Initial Construction Date: 7/2023

Process Description:

The new recycle mill produces linerboard and medium from 100 percent waste/recycled paper. The input stream consists of recycled old corrugated containers (OCC) and mixed waste paper. Mixed waste paper primarily consists of residential paper waste and traditional industrial and commercial waste paper. Waste paper is processed (slushed, screened, and cleaned) through a series of steps to separate usable paper fiber from rejects and sludge. Various paper-making chemicals are added to the fiber/water mixture to form the stock slurry. The stock slurry is then pumped from the storage chest to the head box of the paper machine.

Applicable Regulations:

None

Comments:

VOC emissions were estimated using the same emission factor Pratt used for its Wapakoneta, Ohio and Valparaiso, Indiana recycle mills. The original factor was based on information provided by an industry group and represented total VOC loss from an OCC prep area and hydropulping operation. The factor used is 0.015 lb VOC per ODTP (oven-dried ton of pulp). Maximum annual ODTP is 827,820 tons.

Emission Unit 03: Paper Machine

Initial Construction Date: 12/2022

Process Description:

Stock slurry is prepared in emission unit 02 and stored in the stock storage chest. The stock slurry is then pumped from the storage chest to the head box of the paper machine and is sprayed onto the wire. The stock slurry proceeds through the press section and proceeds over the pre-dryer vacuum roll and through the steam-heated pre-dryer drying cylinders. After the pre-dryer, a dilute starch slurry is sprayed onto the partially dried paperboard as a sizing agent. The paperboard then passes over the after-dryer vacuum roll and through the steam-heated after-dryer drying cylinders. The dried paperboard proceeds through a calendar and then wound in rolls for shipment. The paper machine will be capable of producing 2,182 ADTFP per day and 796,430 ADTFP per year.

Applicable Regulations:

401 KAR 50:012, General application

Comments:

VOC emissions were estimated using an emission factor derived from source testing of the paper machine at Pratt's Valparaiso recycle mill. The emission factor used is 0.30 lb VOC per ADTFP. The factor is based

Emission Unit 03: Paper Machine

on the highest per test-run emission rate measured during test programs conducted in February 2016 and August 2017 and includes a 10 percent safety factor.

Regarding particulate emissions from the paper machine, facility respond that they do not consider the paper machine a source of PM/PM10 emissions and there are no unit operations along the paper machine that would explicitly generate PM/PM10 emissions. The exhausts from the paper machine; i.e., pre- and after-dryer vacuum rolls and pre- and after-dryer hoods are intended to capture and exhaust warm air containing moisture from the incremental drying of the paper as it proceeds through the machine.

RAP Determination:

The proposed paper machine is considered a major contaminant source with potential VOC emissions greater than 100 tpy (119.5 tpy). The KAR does not include provisions for a specific VOC emission standard for paper machine.

The Paper Machine at the proposed Henderson recycle mill will be larger than the paper machines Pratt installed at recycle mills in Valparaiso, Indiana and Wapakoneta, Ohio but will operate in the same manner as those machines and use the same basic paper-making chemicals and additives. This analysis is using those existing sources as a benchmark.

The technical feasibility and cost evaluation of add-on controls assumed one device would be used for the combined exhaust gas flows from the pre-dryer vacuum roll and hoods and the after-dryer vacuum roll and hoods. Five control technologies were reviewed: oxidation systems (thermal and catalytic, recuperative and regenerative), adsorption, absorption, biofiltration, and condensation. Good design and operating practices were considered the base case control option. Adsorption, absorption, and condensation were eliminated as technically infeasible. Oxidation systems, biofiltration, and good design and operating practices were identified as technically feasible add-on control methods. Budget-level cost estimates were developed for the add-on control technologies to determine if any of these types of control are economically feasible. The cost estimates were based on guidance adapted from the U.S. EPA Office of Air Quality Planning and Standards (OAQPS) Control Cost Manual (EPA 452/B-02-001, Sixth Edition, and January 2002). A VOC emission control efficiency of 95 percent was used for the oxidation and biofiltration control options.

The result of the VOC BACT analysis found that the use of add on control equipment to reduce VOC emissions was beyond the range generally considered economically reasonable. The cost-effectiveness values ranged from \$54,000 per ton of VOC reduced for biofiltration to \$138,000 per ton of VOC reduced for recuperative thermal oxidation. This result was consistent with the RBL search that showed that add on control technology has not been put into operation for any U.S. paper machines.

The RBL search entries showed either no control or the use of good design and operating practices such as the use of lower VOC containing materials. The additives Pratt uses in the paper making process include, but are not limited to, biocides, dyes, polymers, defoamers, sizing agents, and felt washes. Paper-making chemicals and materials used by Pratt are water based and/or contain low levels of VOC.

Pratt proposes operation of the Henderson paper machine as it is currently designed with the use of water-based and lower VOC containing materials and additives as RAP and a VOC emission factor of 0.30 pound per ADTFP.

Emission Unit 04: WWTP anaerobic digester/reactor				
Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
Opacity	20% opacity	401 KAR 63:015, Section 3	N/A	Weekly visual observation
H ₂ S	≤ 250 ppmv inlet concentration to the flare	401 KAR 53:010	N/A	Daily monitoring, unless ≤ 225 ppmv for 180 consecutive days, then weekly monitoring. If weekly reading > 225 ppmv then revert to daily monitoring

Initial Construction Date: 7/2022

Process Description:

Wastewater from the mill is collected in an equalization (EQ) tank. Treatment chemicals (caustic, ferric chloride, phosphoric acid, etc.) are added in the EQ-tank. From the EQ tank wastewater goes through the WWTP Cooling Tower for temperature control to maintain a constant temperature of the influent to the anaerobic reactor/digester. Pratt will install an upflow anaerobic sludge blanket (UASB) reactor. From the anaerobic reactor/digester, wastewater proceeds through an oxidation basin, clarifier, and ozone reactor before being discharged. Waste solids and sludge produced in the anaerobic reactor and the clarifier are returned to the mill.

Biogas (a mixture of methane and CO₂) is produced by the anaerobic conversion of BOD (biological oxygen demand) and COD (chemical oxygen demand) present in the mill wastewater effluent. Raw biogas is conditioned by absorption systems prior to being combusted. Biogas from the anaerobic reactor/digester is passed through a multi-stage scrubbing system for hydrogen sulfide (H₂S) removal and is combusted in a candle-stick type flare or the mill boiler. The design peak raw biogas generation rate is 760 ft³/min. The maximum daily and annual biogas generation is estimated at 1,008,000 ft³/day and 368 million ft³/year. The biogas will be comprised of about 70 percent methane and 30 percent CO₂ and contain a maximum of 15,000 ppm H₂S.

Applicable Regulation:

401 KAR 53:010, Ambient air quality standards. Applies to emissions of H₂S.

401 KAR 63:015, Flares

Comments:

Potential H₂S emissions from the anaerobic reactor are based a maximum concentration in the raw biogas of 14,000 ppm. The biological scrubbing system has a design H₂S removal efficiency of 98 percent and a design outlet concentration (equal to the flare inlet H₂S concentration) of 250 ppmv. The biogas flare meets the minimum operating criteria of 40 CFR 60.8(h) and is assumed to oxidize 98 percent of H₂S to SO₂. The expected conditioned biogas heat content will be 637 Btu/ft³.

Potential PM, NO_x, and CO emissions were calculated using emission factors from AP-42 Table 2.4-4 for industrial flares. PM₁₀ and PM_{2.5} emissions were assumed equal to PM emissions. Potential VOC emissions were calculated based on factors given in the San Diego APCD's Air Toxics Emissions Calculation

Emission Unit 04: WWTP anaerobic digester/reactor

Procedures for Flares, Digester Gas Fired, Enclosed.

Refined modeling was conducted to determine if potential after control emissions of H₂S are in compliance with ambient air quality standards (401 KAR 53:010). Based on information submitted in the application, the modeling indicated the source to be in compliance.

Emission Unit 05: Mill Air Make-Up Units (7 Units)
Emission Unit 15: Corrugating Air Make-Up Units (7 units)

Initial Construction Date: 10/2022 for EU 05, 1/2023 for EU 15

Process Description:

EU 05: The mill operates seven direct-heat air make-up units (AMUs) to provide building heat during cold weather months. Each AMU operates a maximum of 4,000 hours per year (or an equivalent of 243.1 million ft³/yr of natural gas for all seven units). The AMUs are direct natural gas-fired units. 6 have a maximum heat input rating of 10.2 MMBtu/hr and one has a maximum heat input rating of 0.8 MMBtu/hr for a total heat input of 62.0 MMBtu/hr.

EU 15: The corrugating facility operates eight direct-heat AMUs to provide building heat during cold weather months. Each AMU operates a maximum of 4,000 hours per year (or an equivalent of 101.3 million ft³/yr of natural gas for all seven units). The AMUs are direct natural gas-fired and each has a maximum heat input rating of 3.23 MMBtu/hr, for a total heat input of 25.84 MMBtu/hr.

Applicable Regulations:

None

Comments:

Potential emissions were calculated using emission factors for natural gas combustion taken from AP-42 Section 1.4 (non-GHGs) and 40 CFR 1098 (for GHGs) PTE for these units is based on 8760 hours operation per year.

Emission Unit 06: Natural Gas Fired Emergency Generator

Initial Construction Date: 1/2023

Process Description:

The Emergency Generator is a 448 horsepower (hp) natural gas-fired generator engine. The rated heat input for the reciprocating internal combustion engine (RICE) from natural gas is about 3.42 MMBtu/hr.

Applicable Regulations:

401 KAR 60:005 Section 2(2)(eeee) 40 C.F.R. 60.4230 through 60.4248, Tables 1 to 4 (Subpart JJJJ), Standards of Performance for Stationary Spark Ignition Internal Combustion Engines.

401 KAR 63:002 Section 2(4)(eeee) 40 C.F.R. 63.6580 through 63.6675, Tables 1a to 8, and Appendix A (Subpart ZZZZ), National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. The requirements of 40 CFR 63 Subpart ZZZZ are met by meeting the requirements of 40 CFR 60 Subpart JJJJ. No further requirements apply under this part.

Comments:

Potential emissions for the Emergency Generator are based on 500 hrs/yr of operation in accordance with U.S. EPA policy. Emissions factors for PM, PM₁₀, PM_{2.5}, SO₂, and HAPs were taken from AP-42, Table 3.2-3 for 4-stroke rich engines. Emission factors for NO_x, CO, and VOC were provided by an equipment manufacturer and are equal to or better than the Tier 3 standards required for new spark-ignition RICE provided in 40 CFR Part 60, Subpart JJJJ.

Emission Unit 07: Diesel Fuel-Fired Fire Pump Engine

Initial Construction Date: 1/2023

Process Description:

The Fire Pump is a 327 horsepower (hp) diesel-fired engine driven water pump used for fire protection. The rated heat input for the compression-ignition RICE from diesel fuel oil is about 2.29 MMBtu/hr.

Applicable Regulations:

401 KAR 60:005 Section 2(ddd), 40 C.F.R. 60.4200 through 60.4219, Tables 1 to 8 (Subpart IIII), Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.

401 KAR 63:002 Section 2(eeee), 40 C.F.R. 63.6580 through 63.6675, Tables 1a to 8, and Appendix A (Subpart ZZZZ), National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. Pursuant to 40 CFR 63.6590 (c)(1), a new stationary RICE located at an area source must meet the requirements of Subpart ZZZZ by meeting the requirements of CFR part 60 subpart IIII, for compression ignition engines. No further requirements apply for such engines under Subpart ZZZZ.

Comments:

Potential emissions for the Fire Pump are based on 500 hrs/yr of operation in accordance with U.S. EPA policy. Emission factor for filterable PM, NO_x, CO, and VOC were provided by an KDAQ Title V Permit Application of 9 August 2021 equipment manufacturer and are equal to the Tier 3 standards required for new compression ignition RICE provided in 40 CFR Part 60, Subpart IIII. Emissions factors for the condensable fraction of PM₁₀ and PM_{2.5}, were taken from AP-42 Table 3.4-2. SO₂ emissions are based AP-42 Table 3.4-1 and burning diesel with 15 ppm sulfur. HAP emission factors were taken from AP- 42, Table 3.3-2

Emission Unit 08: Corrugating Boiler #1 (Clever-Brooks)				
Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
PM	0.10 lb/MMBtu	401 KAR 59:015, Section 4(1)(c)	AP-42 Chapter 1.4.	Assumed based upon natural gas combustion
Opacity	20% opacity	401 KAR 59:015, Section 4(2)	N/A	Assumed based upon natural gas combustion
SO ₂	0.8 lbs/MMBtu	401 KAR 59:015, Section 5(1)	AP-42 Chapter 1.4.	Assumed based upon natural gas combustion

Initial Construction Date: 1/2023

Process Description:
 Provides process steam to the corrugator to soften the paperboard for fluting and dry the finished corrugated web.
 Maximum Continuous Rating: 33.3 MMBtu/hr
 Fuel: Natural gas
 Control: Low NOx burners

Applicable Regulation:
401 KAR 59:015, New indirect heat exchangers

401 KAR 60:005, Section 2(2)(d) 40 C.F.R. 60.40c through 60.48c (Subpart Dc), Standards of Performance for Small Industrial Commercial-Institutional Steam Generating Units

Non-applicable Regulation:
401 KAR 63:002 Section 2(4)(jjjj) 40 C.F.R. 63.11193 through 63.11237, Tables 1 through 8 (Subpart JJJJJ), National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources is not applicable since the boiler combust only gaseous fuels.

Comments:
 Emission limits calculated from 401 KAR 59:015 based on source wide heat input capacity of >250 MMBtu/hr. See comments for EU 01 regarding nested source for boilers.

Emission Units #09-14 Flexo-Folder-Gluers and Rotary Die Cutters				
Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
VOC	≤ 25% by volume organic solvent	401 KAR 59:212, Section 6(1), to exempt source from 59:212 Section 3.	Formulation Data or Method 24A test	Recordkeeping and/or testing

Initial Construction Date: 1/2023

Process Description:

Several pieces of equipment will be operated to convert sheet produced by the corrugator to corrugated printed folded box products and printed corrugated sheet depending on customer specifications. Two types of equipment will be installed: flexo-folder-gluers (FFGs) and rotary die cutters (RDCs). FFGs will cut, print ink and apply glue to sheet and then fold the boxboard. RDCs will only print ink and cut the sheet. Each FFG and RDC will have multiple flexographic printing decks to accommodate multiple color printing.

Applicable Regulation:

401 KAR 59:212, New graphic arts facilities using rotogravure and flexography

401 KAR 63:020, Potentially hazardous matter or toxic substances

Comments:

Pratt uses high-solids, waterborne inks containing about 1 percent by weight VOC or less. Cold set glues and adhesives are used which contain 0.5 percent by weight or less VOC. Source will meet exemption (401 KAR 59:212 Section 6(1)) to preclude applicability of 401 KAR 59:212, Section 3 VOC standard.

Potential VOC and HAP emissions from the converting equipment is based on the capacity of each machine in terms of in²/hr or ft²/hr of corrugated sheet along with the application rate for inks (2.0 lbs/million in²) and glue (0.5 lbs/MM in²).

Emission Unit 16: Three (3) Rental Boilers				
Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
PM	0.10 lb/MMBtu	401 KAR 59:015, Section 4(1)(c)	AP-42 Chapter 1.4.	Assumed based upon natural gas combustion
Opacity	20% opacity	401 KAR 59:015, Section 4(2)	N/A	Assumed based upon natural gas combustion
SO ₂	0.8 lbs/MMBtu	401 KAR 59:015, Section 5(1)	AP-42 Chapter 1.4.	Assumed based upon natural gas combustion

Initial Construction Date: Proposed 2024

Process Description:

Portable rental boilers for temporary use. Will operate only when the Mill Boiler is not operating. Each boiler shall operate no more than 1,000 hours per 12-month rolling period.

Maximum Continuous Rating: 90.2 MMBtu/hr, each (270.6 MMBtu/hr, total)

Fuel: Natural gas

Applicable Regulation:

401 KAR 59:015, New indirect heat exchangers

Precluded Regulation:

401 KAR 51:017, Prevention of significant deterioration of air quality is precluded since the source has accepted an operating limitation to limit emissions to below a PSD major source threshold.

Non-applicable Regulations:

401 KAR 60:005, Section 2(2)(d) 40 C.F.R. 60.40c through 60.48c (Subpart Dc), Standards of Performance for Small Industrial Commercial-Institutional Steam Generating Units is not applicable to temporary boilers. Subpart Dc defines temporary boilers as portable, not attached to a foundation and limited to remain on location for no more than 180 consecutive days.

401 KAR 63:002 Section 2(4)(jjjj) 40 C.F.R. 63.11193 through 63.11237, Tables 1 through 8 (Subpart JJJJJ), National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources is not applicable since the boiler combust only gaseous fuels.

Comments:

Emission limits calculated from 401 KAR 59:015 based on source wide heat input capacity of >250 MMBtu/hr. The facility requested a 1,000 hour, 12-month rolling period limitation for the usage of each rental boiler. Using the 1,000 hour limitation for each rental boiler along with reducing the hours for the mill boiler to 7760 hours per year (results in worst case scenario for NO_x and CO emissions increase), there is an increase in CO emissions of 2.82 tpy and an increase in NO_x emission of 9.17 tpy.

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS (CONTINUED)

Testing Requirements/Results

Emission Unit(s)	Control Device	Parameter	Regulatory Basis	Frequency	Test Method	Permit Limit	Test Result	Thruput and Operating Parameter(s) Established During Test	Activity Graybar	Date of last Compliance Testing
09, 10, 11, 12, 13, 14	None	VOC content	401 KAR 59:212	As requested	Method 24A	25% volatile	TBD	TBD	TBD	TBD
01	Low NO _x burner and FGR	NO _x	40 CFR Subpart 60 Db	Initial	See Subpart Db	0.20 lb/MMBtu	TBD	TBD	TBD	TBD
01	None	CO	401 KAR 52:020, Section 10	Initial	Method 10	None	TBD	TBD	TBD	TBD

Footnotes:

SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS

Table A - Group Requirements:

Emission and Operating Limit	Regulation	Emission Unit
50 tpy of NOx emissions	Pursuant to 401 KAR 51:160	01

Table B - Summary of Applicable Regulations:

Applicable Regulations	Emission Unit(s)
401 KAR 50:012 , General application	03
401 KAR 51:160 , NOx requirements for large utility and industrial boilers	01
401 KAR 51:190 , Banking and trading NOx allowances	01
401 KAR 53:010 , Ambient air quality standards	04
401 KAR 59:015 , New indirect heat exchangers	01, 08, 16
401 KAR 59:212 , New graphic arts facilities using rotogravure and flexography	09-14
401 KAR 60:005, Section 2(2)(c) 40 C.F.R. 60.40b to 60.49b (Subpart Db), Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units	01
401 KAR 60:005, Section 2(2)(d) 40 C.F.R. 60.40c through 60.48c (Subpart Dc), Standards of Performance for Small Industrial Commercial-Institutional Steam Generating Units	08
401 KAR 60:005 Section 2(dddd) , 40 C.F.R. 60.4200 through 60.4219, Tables 1 to 8 (Subpart IIII), Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.	07
401 KAR 60:005 Section 2(2)(eeee) 40 C.F.R. 60.4230 through 60.4248, Tables 1 to 4 (Subpart JJJJ), Standards of Performance for Stationary Spark Ignition Internal Combustion Engines.	06
401 KAR 63:002 Section 2(4)(eeee) 40 C.F.R. 63.6580 through 63.6675, Tables 1a to 8, and Appendix A (Subpart ZZZZ), National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.	06, 07
401 KAR 63:015 , Flares	04
401 KAR 63:020 , Potentially hazardous matter or toxic substances	09-14

Table C - Summary of Precluded Regulations:

N/A

SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS (CONTINUED)

Table D - Summary of Non Applicable Regulations:

Non Applicable Regulations	Emission Unit
401 KAR 51:017 , Prevention of significant deterioration of air quality	
401 KAR 60:005, Section 2(2)(d) 40 C.F.R. 60.40c through 60.48c (Subpart Dc), Standards of Performance for Small Industrial Commercial-Institutional Steam Generating Units	16
401 KAR 63:002 Section 2(4)(jjjj) 40 C.F.R. 63.11193 through 63.11237, Tables 1 through 8 (Subpart JJJJJ), National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources	

Air Toxic Analysis

401 KAR 63:020, Potentially Hazardous Matter or Toxic Substances

The Division for Air Quality (Division) has performed SCREEN View on August 11, 2021 of potentially hazardous matter or toxic substances (Glycol Ethers, Formaldehyde and Vinyl Acetate) that may be emitted by the facility based upon the process rates, material formulations, stack heights and other pertinent information provided by the applicant. Based upon this information, the Division has determined that the conditions outlined in this permit will assure compliance with the requirements of 401 KAR 63:020.

Single Source Determination

N/A

SECTION 5 – PERMITTING HISTORY

Permit	Permit Type	Activity#	Complete Date	Issuance Date	Summary of Action	PSD/Syn Minor
V-21-034	Initial	APE20210001	8/19/2021	1/17/2022	Initial Construction Permit	N/A
V-21-034 R1	Minor Revision	APE20220002	3/30/2022	8/12/2022	Modify equipment throughputs	N/A

SECTION 6 – PERMIT APPLICATION HISTORY

Permit Number: V-21-034

Activities: APE20210001

Received: August 5, 2021

Application Complete Date(s): August 19, 2021

Permit Action: Initial Renewal Significant Rev Minor Rev Administrative

Construction/Modification Requested? Yes No NSR Applicable? Yes No

Previous 502(b)(10) or Off-Permit Changes incorporated with this permit action Yes No

Description of Action:

Initial Title V construction permit for a new facility with no existing structures or equipment.

V-21-034 Emission Summary		
Pollutant	2020 Actual (tpy)	PTE V-21-034 (tpy)
CO	N/A	106
NOx	N/A	82.0
PT	N/A	15.3
PM ₁₀	N/A	15.3
PM _{2.5}	N/A	12.2
SO ₂	N/A	8.73
VOC	N/A	201
Lead	N/A	0.001
Greenhouse Gases (GHGs)		
Carbon Dioxide	N/A	289012
Methane	N/A	123
Nitrous Oxide	N/A	4.93
CO ₂ Equivalent (CO ₂ e)	N/A	293556
Hazardous Air Pollutants (HAPs)		
Hydrogen Sulfide	N/A	0.08*
Glycol Ethers	N/A	3.87
Hexane	N/A	4.01
Combined HAPs:	N/A	8.80

* Controlled. Source must operate scrubber and flare at all times emissions are vented from EU 04. Uncontrolled emissions are 232 tpy.

Permit Number: V-21-034 R1

Activities: APE20220002

Received: March 17, 2022

Application Complete Date(s): March 30, 2022

Permit Action: Initial Renewal Significant Rev Minor Rev Administrative

Construction/Modification Requested? Yes No NSR Applicable? Yes No

Previous 502(b)(10) or Off-Permit Changes incorporated with this permit action Yes No

Description of Action:

Revision to modify throughputs for facility boilers, other combustion units and several insignificant activities. These modifications do not result in any changes to applicable regulations or necessitate any further review to preclude PSD.

V-21-034 R1 Emission Summary				
Pollutant	2020 Actual (tpy)	Previous PTE V-21-034 (tpy)	Change (tpy)	Revised PTE V-21-034 R1 (tpy)
CO	N/A	106	5	111
NO _x	N/A	82.0	1.0	83.0
PT	N/A	15.3	0.5	15.8
PM ₁₀	N/A	15.3	0.5	15.8
PM _{2.5}	N/A	12.2	0.7	12.9
SO ₂	N/A	8.73	0.08	8.81
VOC	N/A	201	1	202
Lead	N/A	0.001	0	0.001
Greenhouse Gases (GHGs)				
Carbon Dioxide	N/A	289012	15727	304739
Methane	N/A	123	0	123
Nitrous Oxide	N/A	4.93	0.29	5.22
CO ₂ Equivalent (CO ₂ e)	N/A	293556	15819	309375
Hazardous Air Pollutants (HAPs)				
Hydrogen Sulfide	N/A	0.08*	0	0.08**
Glycol Ethers	N/A	3.87	0	3.87
Hexane	N/A	4.01	0.24	4.25
Combined HAPs:	N/A	8.80	0.25	9.05

* Controlled. Source must operate scrubber and flare at all times emissions are vented from EU 04. Uncontrolled emissions are 232 tpy (V-21-034).

** With V-21-034 R1, facility revised parameters for EU 04 and uncontrolled emissions of HS are reduced to 229 tpy.

APPENDIX A – ABBREVIATIONS AND ACRONYMS

AAQS	– Ambient Air Quality Standards
BACT	– Best Available Control Technology
Btu	– British thermal unit
CAM	– Compliance Assurance Monitoring
CO	– Carbon Monoxide
Division	– Kentucky Division for Air Quality
ESP	– Electrostatic Precipitator
GHG	– Greenhouse Gas
HAP	– Hazardous Air Pollutant
HF	– Hydrogen Fluoride (Gaseous)
MSDS	– Material Safety Data Sheets
mmHg	– Millimeter of mercury column height
NAAQS	– National Ambient Air Quality Standards
NESHAP	– National Emissions Standards for Hazardous Air Pollutants
NO _x	– Nitrogen Oxides
NSR	– New Source Review
PM	– Particulate Matter
PM ₁₀	– Particulate Matter equal to or smaller than 10 micrometers
PM _{2.5}	– Particulate Matter equal to or smaller than 2.5 micrometers
PSD	– Prevention of Significant Deterioration
PTE	– Potential to Emit
SO ₂	– Sulfur Dioxide
TF	– Total Fluoride (Particulate & Gaseous)
VOC	– Volatile Organic Compounds