

## TECHNICAL FACT SHEET

### Update: September 21, 2023

*This document was updated on September 21, 2023, in response to questions from the public. The updates are intended to provide additional information and clarity related to the air permit application review. Changes include the addition of a new Table 1 – “Emission Limit Comparisons” to show the current permitted emission limits compared to emission limits in the proposed permit. Table 2 was changed to correct an incorrect reference. Additional tables were renumbered to reflect the addition of Table 2. No additional technical review was done and no changes were made to the proposed permit conditions.*

### Purpose and Summary

The Michigan Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD), is proposing to act on Permit to Install (PTI) application No. APP-2022-0207 from Graphic Packaging International, LLC (GPI). The permit application is to modify existing permit No. [PTI 133-19A](#) for a recently installed paperboard project to reflect the actual equipment installed. The proposed changes from the previous permit for the project include:

- Modifying the allowed oxides of nitrogen (NO<sub>x</sub>) emission limits and adding a continuous emissions monitoring system (CEMS) to EUBOILER#9 (boiler 9) and FGBOILERS 10-11 (boilers 10 and 11)
- Removing boiler 7
- Correcting the heat input capacity of EUK2CALENDARHEAT1 (heater 1), EUK2CALENDARHEAT2 (heater 2), and EUK2DRYER1 through EUK2DRYER7 (dryers 1 through 7)
- Updating the EUCOOLINGTW1 (cooling towers) exhaust stack parameters

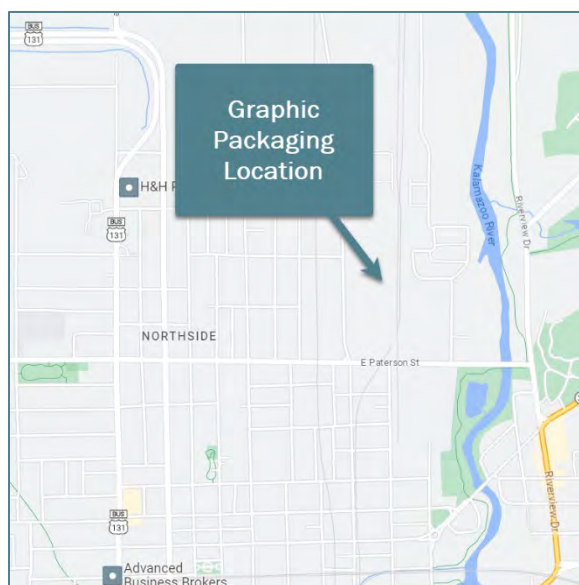


Figure 1: Location of Graphic Packaging

The proposed project is subject to the permitting requirements of EGLE’s Rules for Air Pollution Control. Prior to acting on this application and a related proposed Consent Order, the AQD is holding a public comment period and a virtual public hearing to allow all interested parties the opportunity to comment on the proposed PTI and Consent Order. All relevant information received during the comment period and at the virtual hearing will be considered by the decision maker prior to taking final action on the application and the proposed Consent Order.

This document contains the technical summary for the PTI application review only. More information on the proposed Consent Order can be found at [Michigan.gov/EGLEAirPublicNotice](https://Michigan.gov/EGLEAirPublicNotice), under “[Consent Order Public Notice Documents](#).” On this page you will find:

- [Enforcement Summary for Graphic Packaging International, LLC](#)
- [Proposed Consent Order](#)

## Facility

GPI consists of two divisions that specialize in the production of recycled coated paperboard and carton printing. The Paperboard Mill Division operates the facility's existing industrial boilers and existing paperboard machines with paperboard coating and converting processes, which includes several refrigerant containing chillers and air dryers. There are also several cold cleaners, a fire pump, and a gasoline storage tank. The Carton Plant Division includes six lithographic web press lines, each with an in-line flexographic coater, refrigerant chillers, and air dryers. There are also seven adhesive lines and cold cleaners in the Carton Plant Division.

## Background Information

PTI No. 133-19, issued on March 5, 2020, permitted the installation and operation of a new coated recycled paperboard machine process line, a diesel-fired emergency fire pump, and new 370 million British thermal units per hour (MMBTU/hr) natural gas boiler. The project included removing the ability to burn fuel oil and restricted the natural gas allowed to be burned in boilers 8 and 9. The company requested changes to the project in June 2020 which required a new PTI. GPI's current permit, [133-19A](#) was approved on January 26, 2021. In August 2022, the company submitted another application for additional modifications to the permit to reflect the capacities of the equipment as installed and to incorporate installation of a CEMS.

Boilers 10 and 11 were added under PTI No. 133-19A and were to replace the 370 MMBTU/hr boiler included in PTI No. 133-19. Originally GPI was going to demonstrate compliance with the federal requirements for these boilers through equipment parameter monitoring instead of a CEMS. The company has since decided to install a CEMS instead. As such, CEMS requirements were added to the proposed pending draft conditions for this application. Also, the emission limits previously grouped together were separated.

Boiler 9 has current CEMS requirements already in the facilities [Renewable Operating Permit \(ROP\) MI-ROP-B1678-2015](#). Those conditions were also added to the pending draft conditions for this application.

Because the use of CEMS can demonstrate continuous compliance with emission limits, it is preferred over stack testing. CEMS are required to be tested for accuracy every year. Stack testing typically occurs once every 5 years. Therefore, the stack testing requirements were removed for boilers 9, 10, and 11. It should be noted however that the stack testing for boiler 9 has already occurred, so its removal does not represent any relaxation of conditions. Since boiler 9 is only having more stringent conditions added as part of this application, the unit did not undergo new source review (NSR).

The modifications to the heat capacities of the equipment compared to the last permitting of the project resulted in the need to re-calculate and re-model emissions.

The modification of the NO<sub>x</sub> emission limit for FGBOILERS10-11 from lb/MMBtu to the equivalent lb/hr at maximum capacity does not represent an increase in short-term emissions because the CEMS requirements were also added to FGBOILERS10-11 rather than demonstrating compliance through emissions testing, which could occur at less than maximum capacity.

The requirement to shutdown boiler 7 was included in PTI No. 133-19A. Since boiler 7 has been physically removed from the facility, all references to it in the permit have been completely removed during this proposed permitting action.

## Present Air Quality

The United States Environmental Protection Agency (USEPA) has developed health-protective standards for specific air pollutants. These standards are called the National Ambient Air Quality Standards (NAAQS). There are NAAQS for some pollutants, including sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), particulate matter equal to or less than 10 microns in diameter (PM<sub>10</sub>), particulate matter equal to or less than 2.5 microns in diameter (PM<sub>2.5</sub>), ozone, and lead.

GPI is located in Kalamazoo County which is in attainment with all the NAAQS. This means all the pollutants with NAAQS are meeting their health-based NAAQS standard. EGLE has conducted air monitoring for ozone and PM<sub>2.5</sub> at the Kalamazoo Fairgrounds for several years to evaluate the air quality for the region. Please see the [EGLE Air Monitoring Sites Web Map](#) for information on the air monitoring sites and the [EGLE AQI Website or AirNow.gov](#) for real-time air monitoring information. Please note, the purpose of the air monitoring stations is to assess the regional or area-wide air quality and is not used to determine if a specific source is in compliance with their air permit.

In April 2023, the Michigan Department of Health and Human Services (MDHHS) released an evaluation of air monitoring data collected near GPI from approximately 2020 through 2022. Among their conclusions, MDHHS noted that people with a lifetime of exposure to hydrogen sulfide (H<sub>2</sub>S) levels measured in the community close to GPI are at increased risk of developing nasal irritation and odor-induced health effects. In addition to H<sub>2</sub>S, some volatile organic compounds (VOCs) were also measured at high enough levels in the air to be detectable odors, and individuals sensitive to odors may experience temporary health effects.

## Pollutant Emissions

Each time a company makes changes to a project, the AQD ensures emissions will meet the applicable rules and regulations. As drafted, the proposed permit does not include any increases in emissions, however some limits have been modified due to the addition of the CEMS. The emissions related to the requested modification are summarized in Table 1.

**Table 1: Emission Limits Comparison**

		Active Permit (PTI 133-19A)			Proposed Draft (APP-2022-0207)		
Equipment	Pollutant	Limit		Averaging Time	Limit		Averaging Time
Boiler #8	NOx	40.4	tpy *	12-month rolling	40.4	tpy	12-month rolling
	NOx	154	lb/MMCF	Hourly	154	lb/MMCF	Hourly
Boiler #9	NOx	0.06	lb/MMBtu	24-hr	0.06	lb/MMBtu	Calendar Day
	NOx	NONE (Subsumed limit)**			0.10	lb/MMBtu	30-day rolling
	NOx	13.6	pph	Hourly	13.6	pph	Hourly
	NOx	59.6	tpy	12-month rolling	59.6	tpy	12-month rolling
	Total gaseous NMOC	0.025	lb/MMBtu	Hourly	0.025	lb/MMBtu	Hourly

		Active Permit (PTI 133-19A)			Proposed Draft (APP-2022-0207)		
Equipment	Pollutant	Limit		Averaging Time	Limit		Averaging Time
	Total gaseous NMOC	5.7	pph	Hourly	5.7	pph	Hourly
Air Makeup Units	NOx	6.6	tpy	12-month rolling	6.6	tpy	12-month rolling
FGK2MACHINE	VOC	29.3	tpy	12-month rolling	29.3	tpy	12-month rolling
	NOx	16.5	tpy	12-month rolling	16.5	tpy	12-month rolling
	Acetaldehyde	5,685	lb/yr	12-month rolling	5,685	lb/yr	12-month rolling
	Acrylamide	116	lb/yr	12-month rolling	116	lb/yr	12-month rolling
FGBOILERS10-11	NOx	NONE (Subsumed limit) **			0.10	lb/MMBtu	30-day rolling
	NOx	0.036	lb/MMBtu	Hourly	11.2	lb/hr ***	Hourly
	PM10	0.004	lb/MMBtu	Hourly	0.004	lb/MMBtu	Hourly
	PM2.5	0.004	lb/MMBtu	Hourly	0.004	lb/MMBtu	Hourly

\* tpy = tons per year

\*\* Subsumed Limit – Subsumed limits are allowed under the Clean Air Act. In this case, the Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units (40 CFR 60 Subpart Db) require the 0.10 lb/MMBtu emission limit. That limit is automatically met when the 0.06 lb/MMBtu limit is met. The existing permit PTI 133-19A used the 0.06 lb/MMBtu limit to restrict the emissions below 0.10 lb/MMBtu whereas the proposed draft permit contains the limits separately. The 0.06 lb/MMBtu is still not allowed to be exceeding the proposed draft so there is no increase to the emission limit.

\*\*\*11.2 lb/hr is the equivalent of 0.036 lb/MMBtu based upon the boilers being rated at 311 MMBtu/hr. Converting the limit to lb/hr allowed continuous emission monitoring to be used.

In addition, when reviewing proposed modifications to a project like this one, air quality rules require the re-evaluation of all project related emissions back to when the original project was proposed. This baseline calculates emissions as if there is no permit, emissions are unrestricted, and equipment is operating at maximum capacity (shown in Table 2 in the “Prior to project” column). The paperboard project was originally proposed and permitted with restrictions under PTI 133-19 in 2020. The increases in emissions for CO, VOCs and lead shown below were included during previous modifications of the paperboard project in 2020 and 2021 and were evaluated as part of the current active permit (PTI 133-19A). The CO, VOCs and lead emissions increases are not part of, nor have they undergone changes during the current requested modifications. Increases and decreases are included to show how the entire paperboard project emissions have evolved over time. The “After project complete” column refers to project emissions if the requested modifications are approved as proposed.

**Table 2: Project Emissions Summary\***

Pollutant	Prior to project (tpy)	After project complete (tpy)	Increases and (-) Decreases (tpy)
Particulate Matter (PM)	97.3	14.3	-83.0
PM10	102.6	23.9	-78.7
PM2.5	76.3	23.9	-52.4
SO <sub>2</sub>	1717.0	36.0	-1681
CO	139.5	216.7	77.2
NO <sub>x</sub>	491.8	220.1	-271.7
VOCs	10.3	51.3	41.1
Lead (Pb)	0.00049	0.0023	0.00181

*\*This table was updated to fix an error on September 21, 2023. The original table had incorrectly referenced emissions data from the Boilers post-project rather than pre-project. This update does not change the review conducted nor the proposed permit conditions.*

### Odor Concerns

This facility has a history of odor complaints. Direct emissions from this type of equipment have been determined to not be the source of the odors. If the existing source of the odors were found to originate from equipment similar to those proposed in this permit, then any necessary equipment or operational changes addressing the issue would also be applied to the new equipment.

The proposed draft permit conditions include a requirement for the facility to develop and implement a Nuisance Minimization Plan for Odors. This plan includes all of the facility including equipment outside of the current project being permitted. If the plan did not sufficiently address the odor issues, the AQD District Office Supervisor may request modifications to the plan.

### Key Permit Review Issues

Staff evaluated the proposed project to identify all state rules and federal regulations which are, or may be, applicable. The section below details why GPI is subject to certain rules and how the permit conditions comply with them. The tables in **Appendix 1** summarize these rules and regulations.

- #### Prevention of Significant Deterioration (PSD) Regulations

Prior to this project, GPI was both an existing facility-wide PSD major stationary source and a nested PSD source due to its boilers. Because the overall facility itself is not one of the listed 26 source categories, the PSD applicability threshold for the facility is a PTE of greater than 250 tons per year (tpy) of any regulated pollutant. Because the boilers are one of the 26 listed source categories, the PSD applicability threshold for the boilers is a PTE of greater than 100 tpy of any regulated pollutant. A modification at an existing PSD facility where the emissions of any regulated pollutant will increase by more than the significant level for that pollutant, results in the modification being subject to PSD for that pollutant.

In addition to the permitting of the recycled paperboard project, GPI is proposing to accept synthetic minor emission limits. The emissions from the existing equipment are being limited by associated operational restrictions and record keeping on the air makeup units (AMUs). This includes restrictions on the annual fuel use for the AMUs, the removal of boiler 7, fuel restrictions for boiler 8, and removal of fuel oil being permitted for combustion in boiler 9. The emissions from

the new equipment is being limited by a material restriction limiting the types and quantity of fuel allowed by the permit. Those emission limits will restrict total facility-wide PTE to less than 250 tpy for each regulated pollutant, making the over-all facility minor under the PSD regulations. Minor sources under PSD are subject to PSD NSR if the project emissions exceed the PSD threshold. Since the facility-wide PTE including the proposed project is less than this threshold, the project emissions must also be less than this threshold. No additional demonstration for facility-wide PSD applicability is needed. The PTE for the boilers will remain above 100 tpy making the boilers a major PSD source “nested” within the minor facility-wide PSD source. Any project involving the facility with greater PTE over significance for any regulated pollutant would trigger PSD.

The project includes adding two new boilers (EUBOILER#10 and EUBOILER#11). This addition is a modification to the existing nested major PSD source containing the existing boilers. The PTE from the boilers after the proposed project are 138.4 tpy NO<sub>x</sub> and 350,247 tpy of greenhouse gasses (GHG) as carbon monoxide equivalents (CO<sub>2</sub>e) which exceed significance levels for PSD for the nested source. Therefore, in addition to the removal of boiler #7, GPI is taking emission reductions at boiler 8 to reduce the project NO<sub>x</sub> emissions to less than significance by using project emissions accounting. Emissions of CO<sub>2</sub>e are only subject to PSD review if PSD review is triggered for another pollutant. The table below shows that the emissions related to the boilers will not exceed significance levels and do not trigger PSD requirements due to the nested source (boilers):

**Table 3: Boilers PSD Analysis**

Pollutant	Baseline* (tpy)	PTE (tpy)	Difference (tpy)	Significance Level (tpy)	Significance or Greater?
NO <sub>x</sub>	107.5	138.4	30.8	40	No
CO	51.1	120.7	69.5	100	No
PM	1.3	11.4	10.1	25	No
PM10	5.1	12.9	7.8	15	No
PM2.5	5.1	12.9	7.8	10	No
SO <sub>2</sub>	0.4	1.7	1.3	40	No
VOC	3.7	16.0	12.3	40	No
Pb	0.000336	0.00146	0.0012	0.6	No
HF (hydrogen Fluoride)	0	0	0	3	No
H <sub>2</sub> S/TRS (total reduced sulfur)	0	0	0	10	No
H <sub>2</sub> SO <sub>4</sub> (sulfuric acid mist)	0.00405	0.016	0.0132	7	No
CO <sub>2</sub> e	82,715	350,247	267,532	75,000	Yes**

\* EUBOILER#8 and EUBOILER#7 are the only existing emission units undergoing NSR related to the project and therefore are the only emission units included in the baseline emissions.

\*\* A decision by the Supreme Court (*Utility Air Regulatory Group v. U.S. EPA*), No. 12-1146 (June 23, 2014) determined that PSD review for GHGs is only required if one or more of the other regulated new source review pollutants exceeds a PSD threshold.

*NOTE: An Actual to Potential analysis compares the past actual emissions from the equipment prior to the project (baseline emissions) to the potential emissions after the project is complete. The future potential emissions reflect the worst-case scenarios and is the most equipment*

*would be allowed to emit in the future. The future actual emissions would be less than the potential emissions used in the analysis.*

The future potential emissions from boiler 8 were calculated based upon the new fuel restrictions in the proposed permit conditions. The potential emissions from boilers 10 and 11 were based upon the maximum capacity of the units burning natural gas.

The previous permits, Nos. 133-19 and 133-19A for the project included a PSD applicability analysis covering the interim period prior to the new boilers being fully operational but before the new fuel restrictions would be effective for boiler 8. This interim period has passed so is not included in the proposed permit conditions or in the PSD applicability review for this application.

- **Federal New Source Performance Standards Regulations (NSPS)**

NSPS were established under Title 40 of the Code of Federal Regulations (40 CFR Part 60). 40 CFR 60 Subpart Db NSPS is for industrial commercial institutional steam generating units and is in effect for equipment constructed, modified, or reconstructed after June 19, 1984. Therefore, the existing boiler 8 is not subject to any requirements of that subpart since it was installed prior to June 19, 1984. Boilers 9, 10, and 11 must meet the subpart requirements. Compliance with the subpart NO<sub>x</sub> emission limits will be demonstrated by use of the CEMS.

- **Federal National Emission Standards for Hazardous Air Pollutants (NESHAP) Regulations**

NESHAP regulations were established under 40 CFR Part 61 and Part 63. None of the proposed equipment in the project is subject to the requirements a NESHAP.

- **Rule 224 TBACT Analysis**

Rule 224 requires Best Available Control Technology(T-BACT) for toxic air contaminants (TAC). However, the requirements of Rule 224 do not apply to any process subject to a federal NESHAP. In addition, the requirements of Rule 224 do not apply to TACs that are particulates or VOCs and are in compliance with Best Available Control Technology (BACT).

The only pollutant emitted from the starch silo will be starch, which is not a TAC. Also, the cooling tower is not subject to T-BACT because the water does not contact the exhaust stream and there are no additives, therefore only exhausting water vapor. Therefore, the requirements of T-BACT for TACs in the form of VOC emissions have been met through the VOC BACT analysis.

- **Rule 225 Toxics Analysis**

EGLE Rules for Air Pollution Control require the ambient air concentration of TACs be compared against their respective allowed [health-based screening levels](#). AQD Staff reviewed GPI's air quality modeling and evaluation of TAC impacts. The review found that all TACs will comply with the health-based requirements of Rule 225.

A generic one pound per hour (1 lb/hr) was modeled from each emission unit and was multiplied by the emission rate to determine the maximum concentration from each. The maximum concentrations were then added together for each TAC and compared to their respective allowed screening levels. This is conservative because it assumes the maximum concentration takes place at the same point. This method was used to screen all toxics except acetaldehyde and acrylamide. The Rule 225(3)(a) option that allows 10 times the initial risk screening level to be used on industrial property was used for these two TACs. Emission limits for these TACs and conditions pertaining to land use are included in the proposed permit.

- **Rule 702 Volatile Organic Compound Emissions**

This rule requires an evaluation of the following four items to determine what will result in the lowest maximum allowable emission rate of VOCs:

- a) BACT or a limit listed by the department on its own initiative.
- b) NSPS.
- c) VOC emission rate specified in another permit.
- d) VOC emission rate specified in the Part 6 rules for existing sources.

An evaluation of these four items determined that a VOC BACT limit (702(a)) would dictate the lowest maximum allowable emission rate of VOCs from the proposed new paperboard machine. The analysis identified possible add-on VOC control technologies as well as coating reformulation. Potential control devices were reviewed for technological feasibility. The remaining control technologies (recuperative thermal oxidizer, regenerative thermal oxidizer, catalytic incinerator, carbon adsorption, and flare) were evaluated for economic feasibility. The least costly control option was the catalytic oxidizer at \$7,799 per ton of VOCs destroyed. This value was determined to not be cost effective. As such, BACT was determined to be no add-on control equipment.

The VOC emissions from the other pieces of project related equipment are primarily from the combustion of natural gas which results in low VOC emissions. As such, add-on control equipment on them is not economically feasible. The use of only natural gas fuel and good combustion practices will be used to demonstrate compliance with Rule 702(a) in the new boiler and dryers.

- **Criteria Pollutants Modeling Analysis**

Computer dispersion modeling was performed to predict the impacts of air emissions from CO, NO<sub>x</sub>, PM10, and PM2.5. NO<sub>x</sub> refers specifically to nitrogen oxide and NO<sub>2</sub>, with the larger portion being NO<sub>2</sub>. NO<sub>2</sub> is a highly reactive gas and is the pollutant for which the USEPA established a NAAQS. Emissions from the proposed changes were evaluated against both the NAAQS and the PSD increments. The NAAQS are intended to protect public health. The PSD increments are intended to allow industrial growth in an area, while ensuring that the area will continue to meet the NAAQS

The first step in this evaluation is to determine the predicted impacts from the proposed project. After impacts are determined, they are compared to the applicable PSD Significant Impact Levels (SILs). If the project impacts are less than the SIL, then no further review is required. The following table considers the potential emissions from CO compared to the SIL.

**Table 4: Class II Significant Impact Levels**

Pollutant	Averaging Period	SIL (µg/m <sup>3</sup> )	Total Maximum Impact (µg/m <sup>3</sup> )	Above SIL?
CO	1-Hour	2,000	161	No
	8-Hour	500	114	No

The NAAQS modeling results showed the concentrations of the remaining pollutants: NO<sub>2</sub>, PM10, and PM2.5 were below NAAQS and Increment.

The PSD Increments are compared against the total facility impact plus other increment consuming facilities nearby. In the NAAQS analysis, total facility impact includes additional nearby



facilities, or offsite sources. The total facility impact and the background concentrations, which is data from ambient air monitors, are summed and compared to the NAAQS.

As the following tables show, emissions of NO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> from the proposed project will meet their respective PSD Increments and NAAQS.

**Table 5: PSD Increment Modeling Impacts**

Pollutant	Averaging Time	PSD Increment (µg/m³)	Predicted Impact (µg/m³)	Percent of Increment (%)
NO <sub>2</sub>	Annual	25	14.32	57.3
PM10	24-Hour	30	10.92	36.4
	Annual	17	1.79	10.5
PM2.5	24-Hour	9	8.41	93.4
	Annual	4	1.45	36.3

Please note, there is not a PSD Increment for NO<sub>2</sub> on a 1-hour average.

**Table 6: NAAQS Modeling Impacts**

Pollutant	Averaging Time	NAAQS (µg/m³)	Predicted Impact (µg/m³)*	Percent of NAAQS (%)
NO <sub>2</sub>	1-Hour	188	174.39	92.8
	Annual	100	30.69	30.7
PM10	24-Hour	150	43.36	28.9
PM2.5	24-Hour	35	28.32	80.9
	Annual	12	8.82	73.5

Please note, there is not a NAAQS for PM10 on an annual average.

\*Includes background data.

## Key Aspects of Draft Permit Conditions

This section provides information about conditions in the permit and how the permit conditions limit emissions and impacts.

- ### Emission Limits (By Pollutant)

The proposed permit includes NO<sub>x</sub> emission limits for boilers 8, 9, 10, and 11. The NSPS subpart Db required emission limits are no longer being subsumed for boilers 9 and 10. Without the new fuel restrictions on boiler 8 and the use of only natural gas in boiler 9, the overall facility would have remained a major source under PSD and the proposed project would have exceeded significance for NO<sub>x</sub> and would have been subject to review under PSD. FGK2MACHINE also contains an annual NO<sub>x</sub> emission limit which is from the natural gas combustion in the dryers and AMUs. The annual NO<sub>x</sub> emissions will be restricted by limiting the natural gas for the flexible group.

The proposed conditions for boilers 10 and 11 contain a PM10 emission limit which is used to demonstrate compliance with the NAAQS and PSD Increments. The starch silo also has particulate (PM, PM10, PM2.5) emission limits to demonstrate compliance with Michigan Rule 331, NAAQS, and PSD Increments.

The flexible group for the paperboard machine process, FGK2MACHINE contains emission limits for VOCs, acetaldehyde, and acrylamide. This group is the primary source of emissions for these pollutants which are released through evaporation rather than combustion. These emission limits are needed to demonstrate compliance with Michigan Air Pollution Control Rule 702 for VOCs and Michigan Air Pollution Control Rules 224-225 for TACs. GPI will be required to maintain a record of the contents and amounts of the materials it uses in order to demonstrate compliance with these limits.

- **Usage Limits**

The proposed permit eliminates the ability to burn fuel oil in boiler 8 and includes a reduction in the permitted natural gas usage for boiler 8 to 525 MMCF/yr. Boilers 9, 10, and 11 will be restricted to burn natural gas only.

- **Process/Operational Restrictions**

The proposed permit limits the paperboard machine to a maximum of 657,000 tons of production per year. This in-turn will restrict the amount of VOC and TAC containing materials used in the process.

The proposed permit requires that VOC and/or HAP containing materials used in the paperboard machine process to be done so in a manner to minimize the generation of fugitive emissions. This includes covering containers at all times, except when operator access is necessary.

Boiler 9 also is restricting the fuel to only natural gas as part of the project. The existing AMUs were previously operated under permit exemptions but are being permitted with annual natural gas usage limits.

The proposed permit requires the facility to implement and maintain a malfunction abatement plan (MAP) for the four boilers and EUK2STARARCH. The MAP will minimize potential malfunctions as well as setting the parameters for identifying and correcting a malfunction. If the MAP is not found to be adequate, the AQD can request that it be modified.

A condition was added that restricted the capacity of the total load on boilers 8 and 9 simultaneously to demonstrate compliance with NAAQS modeling.

- **Federal Regulations**

Boilers 9, 10, and 11 are subject to the NSPS for industrial commercial institutional steam generating units, 40 CFR Part 60, Subpart Db. This regulation limits NO<sub>x</sub> emissions and compliance with the limit will be demonstrated by use of the CEMS.

- **Emission Control Device Requirements**

Boilers 10 and 11 will each be equipped with low NO<sub>x</sub> burners and flue gas recirculation to reduce NO<sub>x</sub> emissions.

To control particulate emissions, the proposed permit requires that the starch silo be equipped with a bin vent filter.

- **Testing and Monitoring Requirements**

Boiler 8 will continue to be required to stack test NO<sub>x</sub> emissions once every 60 months.

Per NSPS 40 CFR Part 60, Subpart Db, monitoring NO<sub>x</sub> emissions from boilers 10 and 11, is required. These boilers are also required to test for PM<sub>10</sub> once every 60 months.

Boiler 9 will continue to be required to test non-methane organic compounds emission rates once every 60 months. The previous NO<sub>x</sub> testing requirement for boiler 9 has been removed since that required testing was completed. Ongoing compliance with the NO<sub>x</sub> emission limit will be demonstrated by use of the CEMS.

The proposed permit requires testing, using federal Reference Test Method 24/24A, of the VOC content of any materials used in the paperboard machine upon request of the AQD District Supervisor.

The permit requires testing of particulate emission rates (PM, PM10, and PM2.5) from the starch silo upon request of the District Supervisor.

## Conclusion

Based on the analyses conducted to date, AQD staff concludes that the proposed project would comply with all applicable state and federal air quality requirements. AQD staff also concludes this project, as proposed, would not violate the federal NAAQS or the state and federal PSD Increments.

Based on these conclusions, AQD staff has developed proposed permit terms and conditions which would ensure that the proposed facility design and operation are enforceable, and that sufficient monitoring, recordkeeping, and reporting would be performed by the applicant to determine compliance with these terms and conditions. If the permit application is deemed approvable, the delegated decision maker may determine a need for additional or revised conditions to address issues raised during the public participation process.

If you would like additional information about this proposal, please contact Ambrosia Brown, AQD, at 517-730-1158 or [BrownA39@Michigan.gov](mailto:BrownA39@Michigan.gov).

**Appendix 1**  
**STATE AIR REGULATIONS**

State Rule	Description of State Air Regulations
R 336.1201	Requires an Air Use Permit for new or modified equipment that emits, or could emit, an air pollutant or contaminant. However, there are other rules that allow smaller emission sources to be installed without a permit (see Rules 336.1279 through 336.1291 below). Rule 336.1201 also states that the Department can add conditions to a permit to assure the air laws are met.
R 336.1205	Outlines the permit conditions that are required by the federal Prevention of Significant Deterioration (PSD) Regulations and/or Section 112 of the Clean Air Act. Also, the same types of conditions are added to their permit when a plant is limiting their air emissions to legally avoid these federal requirements. (See the Federal Regulations table for more details on PSD.)
R 336.1224	New or modified equipment that emits toxic air contaminants must use the Best Available Control Technology for Toxics (T-BACT). The T-BACT review determines what control technology must be applied to the equipment. A T-BACT review considers energy needs, environmental and economic impacts, and other costs. T-BACT may include a change in the raw materials used, the design of the process, or add-on air pollution control equipment. This rule also includes a list of instances where other regulations apply and T-BACT is not required.
R 336.1225 to R 336.1232	The ambient air concentration of each toxic air contaminant emitted from the project must not exceed health-based screening levels. Initial Risk Screening Levels apply to cancer-causing effects of air contaminants and Initial Threshold Screening Levels apply to non-cancer effects of air contaminants. These screening levels, designed to protect public health and the environment, are developed by Air Quality Division toxicologists following methods in the rules and United States Environmental Protection Agency (USEPA) risk assessment guidance.
R 336.1279 to R 336.1291	These rules list equipment to processes that have very low emissions and do not need to get an Air Use permit. However, these sources must meet all requirements identified in the specific rule and other rules that apply.
R 336.1301	Limits how air emissions are allowed to look at the end of a stack. The color and intensity of the color of the emissions is called opacity.
R 336.1331	The particulate emission limits for certain sources are listed. These limits apply to both new and existing equipment.
R 336.1370	Material collected by air pollution control equipment, such as dust, must be disposed of in a manner that does not cause more air emissions.
R 336.1401 and R 336.1402	Limit the sulfur dioxide emissions from power plants and other fuel burning equipment.
R 336.1601 to R 336.1651	Volatile organic compounds (VOCs) are a group of chemicals found in such things as paint solvents, degreasing materials, and gasoline. VOCs contribute to the formation of smog. The rules set VOC limits or work practice standards for existing equipment. The limits are based upon Reasonably Available Control Technology (RACT). RACT is required for all equipment listed in Rules 336.1601 through 336.1651.
R 336.1702	New equipment that emits VOCs is required to install the Best Available Control Technology (BACT). The technology is reviewed on a case-by-case basis. The VOC limits and/or work practice standards set for a particular piece of new equipment cannot be less restrictive than the RACT limits for existing equipment outlined in Rules 336.1601 through 336.1651.
R 336.1801	Nitrogen oxide emission limits for larger boilers and stationary internal combustion engines are listed.
R 336.1901	Prohibits the emission of an air contaminant in quantities that cause injurious effects to human health and welfare or prevent the comfortable enjoyment of life and property. As an example, a violation may be cited if excessive amounts of odor emissions were found to be preventing residents from enjoying outdoor activities.
R 336.1910	Air pollution control equipment must be installed, maintained, and operated properly.

**STATE AIR REGULATIONS**

State Rule	Description of State Air Regulations
R 336.1911	When requested by the Department, a facility must develop and submit a malfunction abatement plan. This plan is to prevent, detect, and correct malfunctions and equipment failures.
R 336.1912	A facility is required to notify the Department if a condition arises which causes emissions that exceed the allowable emission rate in a rule and/or permit.
R 336.2001 to R 336.2060	Allow the Department to request that a facility test its emissions and to approve the protocol used for these tests.
<p>R 336.2801 to R 336.2804  <b>Prevention of Significant Deterioration (PSD) Regulations</b></p> <p><b>Best Available Control Technology (BACT)</b></p>	<p>The PSD rules allow the installation and operation of large, new sources and the modification of existing large sources in areas that are meeting the National Ambient Air Quality Standards (NAAQS). The regulations define what is considered a large or significant source, or modification.</p> <p>In order to assure that the area will continue to meet the NAAQS, the permit applicant must demonstrate that it is installing the BACT. By law, BACT must consider the economic, environmental, and energy impacts of each installation on a case-by-case basis. As a result, BACT can be different for similar facilities.</p> <p>In its permit application, the applicant identifies all air pollution control options available, the feasibility of these options, the effectiveness of each option, and why the option proposed represents BACT. As part of its evaluation, the Air Quality Division verifies the applicant's determination and reviews BACT determinations made for similar facilities in Michigan and throughout the nation.</p>
R 336.2901 to R 336.2903 and R 336.2908	<p>Applies to new "major stationary sources" and "major modifications" as defined in R 336.2901. These rules contain the permitting requirements for sources located in nonattainment areas that have the potential to emit large amounts of air pollutants. To help the area meet the NAAQS, the applicant must install equipment that achieves the Lowest Achievable Emission Rate (LAER). LAER is the lowest emission rate required by a federal rule, state rule, or by a previously issued construction permit. The applicant must also provide emission offsets, which means the applicant must remove more pollutants from the air than the proposed equipment will emit. This can be done by reducing emissions at other existing facilities.</p> <p>As part of its evaluation, the AQD verifies that no other similar equipment throughout the nation is required to meet a lower emission rate and verifies that proposed emission offsets are permanent and enforceable.</p>

**FEDERAL AIR REGULATIONS**

Citation	Description of Federal Air Regulations or Requirements
<p><b>Section 109 of the Clean Air Act – National Ambient Air Quality Standards (NAAQS)</b></p>	<p>The USEPA has set maximum permissible levels for seven pollutants. These NAAQS are designed to protect the public health of everyone, including the most susceptible individuals, children, the elderly, and those with chronic respiratory ailments. The seven pollutants, called the criteria pollutants, are carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter less than 10 microns, particulate matter less than 2.5 microns, and sulfur dioxide. Portions of Michigan are currently nonattainment for either sulfur dioxide or ozone. Further, in Michigan, State Rules 336.1225 to 336.1232 are used to ensure the public health is protected from other compounds.</p>

**FEDERAL AIR REGULATIONS**

Citation	Description of Federal Air Regulations or Requirements
<p><b>40 CFR 52.21 – Prevention of Significant Deterioration (PSD) Regulations</b></p> <p><b>Best Available Control Technology (BACT)</b></p>	<p>The PSD regulations allow the installation and operation of large, new sources and the modification of existing large sources in areas that are meeting the NAAQS. The regulations define what is considered a large or significant source, or modification.</p> <p>In order to assure that the area will continue to meet the NAAQS, the permit applicant must demonstrate that it is installing BACT. By law, BACT must consider the economic, environmental, and energy impacts of each installation on a case-by-case basis. As a result, BACT can be different for similar facilities.</p> <p>In their permit application, the applicant identifies all air pollution control options available, the feasibility of these options, the effectiveness of each option, and why the option proposed represents BACT. As part of its evaluation, the Air Quality Division verifies the applicant’s determination and reviews BACT determinations made for similar facilities in Michigan and throughout the nation.</p>
<p><b>40 CFR 60 – New Source Performance Standards (NSPS)</b></p>	<p>The USEPA has set national standards for specific sources of pollutants. These New Source Performance Standards (NSPS) apply to new or modified equipment in a particular industrial category. These NSPS set emission limits or work practice standards for over 60 categories of sources.</p>
<p><b>40 CFR 63— National Emissions Standards for Hazardous Air Pollutants (NESHAP)</b></p>	<p>The USEPA has set national standards for specific sources of pollutants. The National Emissions Standards for Hazardous Air Pollutants (NESHAP) (a.k.a. Maximum Achievable Control Technology (MACT) standards) apply to new or modified equipment in a particular industrial category. These NESHAPs set emission limits or work practice standards for over 100 categories of sources.</p>
<p><b>Section 112 of the Clean Air Act</b></p> <p><b>Maximum Achievable Control Technology (MACT)</b></p> <p><b>Section 112g</b></p>	<p>In the Clean Air Act, Congress listed 189 compounds as Hazardous Air Pollutants. For facilities which emit, or could emit, HAPS above a certain level, one of the following two requirements must be met:</p> <ol style="list-style-type: none"> <li>1) The USEPA has established standards for specific types of sources. These MACT standards are based upon the best-demonstrated control technology or practices found in similar sources.</li> <li>2) For sources where a MACT standard has not been established, the level of control technology required is determined on a case-by-case basis.</li> </ol>

**Notes:** An “Air Use Permit,” sometimes called a “Permit to Install,” provides permission to emit air contaminants up to certain specified levels. These levels are set by state and federal law and are set to protect health and welfare. By staying within the levels set by the permit, a facility is operating lawfully, and public health and air quality are protected.

**The Air Quality Division does not have the authority to regulate noise, local zoning, property values, off-site truck traffic, or lighting.**

These tables list the most frequently applied state and federal regulations. Not all regulations listed may be applicable in each case. Please refer to the proposed permit conditions provided to determine which regulations apply.