



State of Ohio Environmental Protection Agency

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Columbus, OH 43216-1049

1/28/2009

Certified Mail

Jerry Bennett  
Schmack Biomass, LLC - Anaerobic Digestion Facility  
6279 Houchard Road  
Dublin, OH 43016

No	TOXIC REVIEW
No	PSD
No	SYNTHETIC MINOR
No	CEMS
No	MACT
Yes	NSPS
No	NESHAPS
No	NETTING
No	MAJOR NON-ATTAINMENT
No	MODELING SUBMITTED

RE: DRAFT AIR POLLUTION PERMIT-TO-INSTALL AND OPERATE  
Facility ID: 0125044001  
Permit Number: P0103795  
Permit Type: Initial Installation  
County: Franklin

Dear Permit Holder:

A draft of the Ohio Administrative Code (OAC) Chapter 3745-31 Air Pollution Permit-to-Install and Operate for the referenced facility has been issued for the emissions unit(s) listed in the Authorization section of the enclosed draft permit. This draft action is not an authorization to begin construction or modification of your emissions unit(s). The purpose of this draft is to solicit comments on the permit. A public notice will appear in the Ohio EPA Weekly Review and the local newspaper, The Columbus Dispatch. A copy of the public notice and the draft permit are enclosed. This permit has been posted to the Division of Air Pollution Control Web page <http://www.epa.state.oh.us/dapc> in Microsoft Word and Adobe Acrobat format. Comments will be accepted as a marked-up copy of the draft permit or in narrative format. Any comments must be sent to the following:

Andrew Hall  
Permit Review/Development Section  
Ohio EPA, DAPC  
122 South Front Street  
Columbus, Ohio 43215

and Ohio EPA DAPC, Central District Office  
50 West Town Street, 6th Floor  
P.O. Box 1049  
Columbus, OH 43216-1049

Comments and/or a request for a public hearing will be accepted within 30 days of the date the notice is published in the newspaper. You will be notified in writing if a public hearing is scheduled. A decision on issuing a final permit-to-install and operate will be made after consideration of comments received and oral testimony if a public hearing is conducted. Any permit fee that will be due upon issuance of a final Permit-to-Install and Operate is indicated in the Authorization section. Please do not submit any payment now. If you have any questions, please contact Ohio EPA DAPC, Central District Office at (614)728-3778.

Sincerely,

Michael W. Ahern, Manager  
Permit Issuance and Data Management Section, DAPC

Cc: U.S. EPA Region 5 *Via E-Mail Notification*  
Ohio EPA-CDO  
Teresa Mills

Ted Strickland, Governor  
Lee Fisher, Lieutenant Governor  
Chris Korleski, Director





## Permit Strategy Write-Up

1. Check all that apply:

Synthetic Minor Determination

Netting Determination

2. Source Description:

Kurtz Brothers Anaerobic Digestion LLC submitted an application for an air permit to install for a biogas production facility at 2500 Jackson Pike in Columbus, Ohio. The proposed facility consists of biogas production equipment (mixing tank, digester tank, dual-purpose tank, and biogas cleaning) as well as several air emissions units (2 biogas-fired boilers, CHPU [Combined Heat and Power Unit], excess gas flare, and facility roadways).

A similar, but smaller, facility was constructed in Akron, Ohio (PTI 16-02431). Another facility of comparable size and design was recently issued an air PTIO (06-08416), but this biogas production facility has not yet been constructed.

3. Facility Emissions and Attainment Status:

This facility is proposed for construction in Franklin County, which is non-attainment for PM<sub>2.5</sub> and ozone.

Air emissions from this facility will consist of the products of biogas combustion from the biogas boilers, CHPU, and excess gas flare. Emissions from this facility will not trigger Title V permitting requirements or major New Source Review permitting. Emissions of Hazardous Air Pollutants (HAPs) and Toxic Air Contaminants from this facility are from the CHPU, which has the potential for formaldehyde emissions from the combustion of biogas. The air toxics rule (3745-114) will apply to the emissions of formaldehyde. The CHPU generator set is designed to meet or exceed the emissions standards set forth in the Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (40 CFR Part 60, Subpart JJJJ), referred to herein as the NSPS. There is not a NESHAP or MACT standard that applies to this facility because the potential to emit of a single HAP does not exceed 10 tons per year and the potential to emit for combined HAPs does not exceed 25 tons per year. Please note that particulate emissions from unloading of biosolids into the facility building are not anticipated due to the high moisture content of incoming materials.

This facility has the potential for emissions of odors due to the nature of the material being handled and processed. The permittee has voluntarily proposed the installation of a biofilter for the removal of odor causing compounds from various processing activities and tank headspace exhaust. These odors are caused by organic and/or reduced sulfur compounds at very low concentrations. These compounds, while odorous, will not exceed emissions levels of 1 ton per year for air toxics modeling purposes so long as the biofilter is properly operated and maintained because of the mixture of these airstreams with incoming fresh air (dilution) prior to exhausting through the biofilter and the efficiency of the biofilter at reducing the emission of odor-causing compounds. The permit will contain monitoring provisions for biofilter operations as state-only enforceable restrictions.

Proposed facility emissions are as listed below.

Kurtz Brothers Central Ohio LLC Anaerobic Digestion System							
	Emissions Unit	NOx	CO	OC	SO2	PM	HAP/air toxic
Process	ID Number	TPY	TPY	TPY	TPY	TPY	TPY
Paved Roadways and Parking Lots	F001	0.0	0.0	0.0	0.0	0.5	0.0
CHPU	B001	15.5	77.6	7.1	10.7	0.6	0.03
Biogas Boiler #1	B002	0.4	0.4	0.0	0.0	0.0	0.0
Biogas Boiler #2	B003	0.4	0.4	0.0	0.0	0.0	0.0
Anaerobic Digester Flare	P001	4.4	5.7	0.1	13.0	0.0	0.0
	Total	20.8	84.1	7.3	23.8	1.0	0.03

#### 4. Source Emissions:

**B001:** The majority of emissions occur during the operation of emissions unit B001, a generator set designed to operate using biogas of approximately 60% methane as fuel. Natural gas may be fired in this engine as a backup fuel. Combustion chamber design and electronic cylinder ignition controls will be utilized to maintain emissions of oxides of nitrogen (NOx) below the levels required by the NSPS. The permittee will employ a selective catalytic reduction (SCR) / oxidation catalyst (catalytic converter) to control emissions of formaldehyde with an efficiency of 99.5% as BAT and to avoid air toxics modeling. This catalytic converter will be integral to the exhaust system of the CHPU, so monitoring of day-to-day operations will not be required. The permittee has not requested synthetic minor limits on potential to emit from this emissions unit, therefore emissions are calculated at the emissions unit's potential to emit.

Emissions calculations are as follows:

Generator emissions calculated based on GE Jenbacher emissions factors									
	g / bhp-hr	lb/MMBtu	BHP	MMBtu/hr	annual operating hours	lb / g	tons / lb	lb/hr MER	TPY MER
NOx	0.6	XX	2677	16.938	8760	0.0022	0.0005	3.54	15.51
CO	3	XX	2677	16.938	8760	0.0022	0.0005	17.71	77.57
SO2	**	XX	2677	16.938	8760	0.0022	0.0005	2.45	10.73
VOC	0.275	XX	2677	16.938	8760	0.0022	0.0005	1.62	7.11
PM*	XX	0.00745	2677	16.938	8760	0.0022	0.0005	0.13	0.55
formaldehyde	0.25	XX	2677	16.938	8760	0.0022	0.0005	0.01	0.03
* = Based on AP-42 emissions factor for natural gas combustion									
** = SO2 emissions calculated as follows									
max. H2S content of gas = 200 ppm at 16.938 MMBtu/hr and 550 Btu / cf									
16938000 BTU/hr @ 550 Btu/cf = 30,796.4 cf / hr fuel consumption									
30,796 cf / hr @ 200 ppm H2S = 30,796 cf / hr * (200 / 1000000) * (0.088 lb H2S / cf H2S) = 0.542 lb H2S / hr									
0.542 lb H2S / hr * 1.88 lb SO2 / lb H2S = 1.018 lb SO2 / hr									
for 500 ppm H2S content max = 2.545 lb SO2/hr									

**B002 and B003:** B002 and B003 are identical small (1.6 MMBtu / hr) biogas- and natural gas- fired boilers that provide heat for the anaerobic digester process (P001). Emissions factors for these units were provided by the boiler manufacturer. Emissions were calculated using these emissions factors and are displayed in the following table. Emissions displayed are for a single boiler, and are provided for informational purposes only.

Pollutant	lb/hr	tons per year
NOx	0.100	0.438
CO	0.100	0.438
VOC	0.007	0.028
SO2	0.000	0.002
PM	0.001	0.003

**P001:** P001 is the anaerobic digestion system. The system itself consists of several components necessary to the operation of the digester itself, including a processing building for material receiving, dewatering, and shipping, anaerobic digester tanks, storage and pasteurization tanks, and a biofilter for odor control. The application includes a flare that is used to dispose of excess gas produced by the digester system not combusted in other emissions units or during emergencies.

The digester system itself consists of a feedstock equalization tank, digester tank, and dual-purpose tank. The head spaces of these three tanks are vented together for biogas collection. The dual-purpose tank has a specialized roof construction that is essentially a gas bladder that can expand and collapse depending on the amount of gas being produced by the digester system. This roof also allows for the displacement of digester gas from the filling and emptying of tanks that are part of the digester system. Overpressure from this bladder (exceeds 95% of the available gas storage volume) will result in biogas being sent to the flare for combustion until the system is reduced to approximately 80% of available gas storage volume. The system is intended to be operated at approximately 60% of available gas storage volume during normal facility operations and the flare idle.

Emissions from the flare associated with this emissions unit are as follows:

	kg/hr MER	lb/hr MER	TPY MER
NOx	0.46	1.01	4.44
CO	0.59	1.30	5.70
SO2	-	2.98	13.04
VOC	0.01	0.02	0.10
PM*	0.0033	0.01	0.03
as at 550 Btu/CF and 36,000 cf / hr			
$36,000 \text{ cf/hr} * (200 \text{ cf H}_2\text{S} / 1,000,000 \text{ cf}) * 0.088 = 0.6336 \text{ lb H}_2\text{S} / \text{hr}$			
$0.6336 \text{ lb H}_2\text{S} / \text{hr} * 1.88 \text{ lb SO}_2 / \text{lb H}_2\text{S} = 1.191 \text{ lb SO}_2 / \text{hr}$			
at 500 ppm = 2.977 lb SO2/hr			

The facility has committed to venting emissions from the biosolids receiving pits and headspace vents from FOG receiving tanks and pasteurization system to a biofilter for odor control. These types of biological units are generally installed for odor control purposes only, although control of emissions of organics, amines, and reduced sulfur compounds will take place with relatively high efficiency (90-99% in peer-reviewed literature). Typically, biofilters are designed to receive relatively low concentrations of odorous compounds that have extremely low odor thresholds, like hydrogen sulfide. In addition to the voluntary installation of a biofilter for odor control, the permittee will be required to submit and follow a biofilter operation and maintenance plan to ensure that the biofilter is operated in a manner that will minimize emissions of air toxics and odorous compounds.

As an example, hydrogen sulfide has a TLV of 10 ppm ( $13,905 \mu\text{g}/\text{m}^3$ ) and a low odor threshold of  $0.7 \mu\text{g}/\text{m}^3$ . Odors from H<sub>2</sub>S will be detected during the odor monitoring long before the emissions reach the

TLV level on-site at the facility. Further, emissions at the TLV of H<sub>2</sub>S do not reach the 1 ton per year emissions rate required for air toxics modeling using the proposed air flow rate for the biofilter supplied by the applicant of ~1000 cfm (0.2 tons per year for H<sub>2</sub>S at a concentration of 10 ppm, which would be at the TLV for H<sub>2</sub>S at the biofilter exhaust). The MAGLC for H<sub>2</sub>S (331 µg/m<sup>3</sup>) is more than 450 times greater than the low odor threshold for H<sub>2</sub>S, which means that by minimizing odors at the biofilter exhaust and facility fence line, the facility will be in compliance with the air toxics rule when the biofilter is properly operated and maintained.

Each source of biosolids will be approved by Ohio EPA's Division of Surface Water prior to acceptance of that waste stream being utilized in the process. In addition, incoming sewage sludge streams test their incoming materials according to their NPDES permits. Only Ohio EPA, DSW approved source material will be accepted for use in the anaerobic digester, and use will be under the terms and conditions of DSW approval.

**F001:**

Emissions from roadways and parking lots were calculated and resulted in uncontrolled fugitive emissions of less than 10 tons per year using the AP-42 Chapter 13.2.1.3 predictive emissions factor (11/2006) for emissions from paved roadways using the silt loading emission factor for a municipal solid waste landfill. BAT does not apply to these fugitive emissions, and since the proposed location of the facility is an Appendix A area OAC rules 3745-17-07 and 17-08 apply to the roadways and parking lots. For information only, the emissions calculations are displayed below:

E = Emissions factor for paved roadways (lb/VMT)					
k = particle size multiplier (lb PM30 / VMT)					
sL = silt loading (in g/m <sup>2</sup> )					
W = average weight of vehicles on the road (in tons)					
p = mean number of days with 0.01 inch or more of precipitation					
variable	value				
k	0.082				
sL	7.4				
W	36.3				
p	120.0	0.671233			
E=	5.42	lb / VMT			
VMT=	3,375				
lb / year=	18298				
tons / year =	9.148999				

The permittee will be required to comply with the best available control measures to minimize emission of fugitive dust from the roadways and parking areas. Watering of roadways by permittee was applied a control efficiency of 99%, as is typical from the general PTIO.

Conclusion:

Compliance with facility emissions limitations and permit terms and conditions should ensure compliance with Ohio and federal air regulations and minimize odors from the facility.

Any questions please contact John McGreevy at 614-728-3818.

5. Please provide additional notes or comments as necessary:

None

6. Total Permit Allowable Emissions Summary (for informational purposes only):

<u>Pollutant</u>	<u>Tons Per Year</u>
<u>NO<sub>x</sub></u>	<u>20.8</u>
<u>CO</u>	<u>84.1</u>
<u>VOC</u>	<u>7.3</u>
<u>SO<sub>2</sub></u>	<u>23.8</u>
<u>PM</u>	<u>1.0</u>
<u>formaldehyde</u>	<u>0.03</u>



PUBLIC NOTICE  
Issuance of Draft Air Pollution Permit-To-Install and Operate  
Schmack Biomass, LLC - Anaerobic Digestion Facility

Issue Date: 1/28/2009  
Permit Number: P0103795  
Permit Type: Initial Installation  
Permit Description: Anaerobic digester system with biogas engine and emergency flare.  
Facility ID: 0125044001  
Facility Location: Schmack Biomass, LLC - Anaerobic Digestion Facility  
2500 Jackson Pike (SR 104),  
Columbus, OH 43223  
Facility Description: Landscaping Services

Chris Korleski, Director of the Ohio Environmental Protection Agency, 50 West Town Street, Columbus Ohio has issued a draft action of an air pollution control, federally enforceable permit-to-install and operate (PTIO) for Schmack Biomass, LLC - Anaerobic Digestion Facility (formerly Kurtz Brother Central Ohio, LLC - Anaerobic Digestion System) at the location identified above on the date indicated. Comments concerning this draft action, or a request for a public meeting, must be sent in writing no later than thirty (30) days from the date this notice is published. All comments, questions, requests for permit applications or other pertinent documentation, and correspondence concerning this action must be directed to John McGreevy at Ohio EPA DAPC, Central District Office, 50 West Town Street, 6th Floor P.O. Box 1049 or (614)728-3778. The permit can be downloaded from the Web page: [www.epa.state.oh.us/dapc](http://www.epa.state.oh.us/dapc)





**State of Ohio Environmental Protection Agency  
Division of Air Pollution Control**

**DRAFT**

**Air Pollution Permit-to-Install and Operate  
for  
Schmack Biomass, LLC - Anaerobic Digestion Facility**

Facility ID: 0125044001  
Permit Number: P0103795  
Permit Type: Initial Installation  
Issued: 1/28/2009  
Effective: To be entered upon final issuance  
Expiration: To be entered upon final issuance





**Air Pollution Permit-to-Install and Operate**  
for  
Schmack Biomass, LLC - Anaerobic Digestion Facility

Table of Contents

- Authorization ..... 1
- A. Standard Terms and Conditions ..... 3
  - 1. What does this permit-to-install and operate ("PTIO") allow me to do?..... 4
  - 2. Who is responsible for complying with this permit? ..... 4
  - 3. What records must I keep under this permit? ..... 4
  - 4. What are my permit fees and when do I pay them?..... 4
  - 5. When does my PTIO expire, and when do I need to submit my renewal application? ..... 4
  - 6. What happens to this permit if my project is delayed or I do not install or modify my source? ..... 5
  - 7. What reports must I submit under this permit? ..... 5
  - 8. If I am required to obtain a Title V operating permit in the future, what happens to the operating provisions and PER obligations under this permit? ..... 5
  - 9. What are my obligations when I perform scheduled maintenance on air pollution control equipment?... 5
  - 10. Do I have to report malfunctions of emissions units or air pollution control equipment? If so, how must I report? ..... 6
  - 11. Can Ohio EPA or my local air agency inspect the facility where the emission unit(s) is/are located? ..... 6
  - 12. What happens if one or more emissions units operated under this permit is/are shut down permanently? ..... 6
  - 13. Can I transfer this permit to a new owner or operator?..... 6
  - 14. Does compliance with this permit constitute compliance with OAC rule 3745-15-07, "air pollution nuisance"? ..... 7
  - 15. What happens if a portion of this permit is determined to be invalid? ..... 7
- B. Facility-Wide Terms and Conditions..... 8
- C. Emissions Unit Terms and Conditions ..... 10
  - 1. B001, Combined Heat and Power Unit (CHPU) #1.....11
  - 2. F001, Paved Roadways and Parking Areas.....20
  - 3. P001, Anaerobic Digester Controlled by a flare.....23
  - 4. Emissions Unit Group - Biogas Boiler Group: B002, B003.....28





State of Ohio Environmental Protection Agency  
Division of Air Pollution Control

**Draft Permit-to-Install and Operate**

**Permit Number:** P0103795

**Facility ID:** 0125044001

**Effective Date:** To be entered upon final issuance

# Authorization

Facility ID: 0125044001

Application Number(s): A0035818, A0035839

Permit Number: P0103795

Permit Description: Anaerobic digester system with biogas engine and emergency flare.

Permit Type: Initial Installation

Permit Fee: \$2,000.00 *DO NOT send payment at this time - subject to change before final issuance*

Issue Date: 1/28/2009

Effective Date: To be entered upon final issuance

Expiration Date: To be entered upon final issuance

Permit Evaluation Report (PER) Annual Date: To be entered upon final issuance

This document constitutes issuance to:

Schmack Biomass, LLC - Anaerobic Digestion Facility  
2500 Jackson Pike (SR 104)  
Columbus, OH 43223

of a Permit-to-Install and Operate for the emissions unit(s) identified on the following page.

Ohio EPA District Office or local air agency responsible for processing and administering your permit:

Ohio EPA DAPC, Central District Office  
50 West Town Street, 6th Floor  
P.O. Box 1049  
Columbus, OH 43216-1049  
(614)728-3778

The above named entity is hereby granted this Permit-to-Install and Operate for the air contaminant source(s) (emissions unit(s)) listed in this section pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the described emissions unit(s) will operate in compliance with applicable State and Federal laws and regulations.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Chris Korleski  
Director



## Authorization (continued)

Permit Number: P0103795

Permit Description: Anaerobic digester system with biogas engine and emergency flare.

Permits for the following Emissions Unit(s) or groups of Emissions Units are in this document as indicated below:

<b>Emissions Unit ID:</b>	<b>B001</b>
Company Equipment ID:	Combined Heat and Power Unit (CHPU) #1
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>F001</b>
Company Equipment ID:	Paved Roadways and Parking Areas
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>P001</b>
Company Equipment ID:	Anaerobic digester
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable

**Group Name: Biogas Boiler Group**

<b>Emissions Unit ID:</b>	<b>B002</b>
Company Equipment ID:	Biogas Boiler #1
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>B003</b>
Company Equipment ID:	Biogas Boiler #2
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable



State of Ohio Environmental Protection Agency  
Division of Air Pollution Control

**Draft Permit-to-Install and Operate**

**Permit Number:** P0103795

**Facility ID:** 0125044001

**Effective Date:** To be entered upon final issuance

## **A. Standard Terms and Conditions**



**1. What does this permit-to-install and operate ("PTIO") allow me to do?**

This permit allows you to install and operate the emissions unit(s) identified in this PTIO. You must install and operate the unit(s) in accordance with the application you submitted and all the terms and conditions contained in this PTIO, including emission limits and those terms that ensure compliance with the emission limits (for example, operating, recordkeeping and monitoring requirements).

**2. Who is responsible for complying with this permit?**

The person identified on the "Authorization" page, above, is responsible for complying with this permit until the permit is revoked, terminated, or transferred. "Person" means a person, firm, corporation, association, or partnership. The words "you," "your," or "permittee" refer to the "person" identified on the "Authorization" page above.

The permit applies only to the emissions unit(s) identified in the permit. If you install or modify any other equipment that requires an air permit, you must apply for an additional PTIO(s) for these sources.

**3. What records must I keep under this permit?**

You must keep all records required by this permit, including monitoring data, test results, strip-chart recordings, calibration data, maintenance records, and any other record required by this permit for five years from the date the record was created. You can keep these records electronically, provided they can be made available to Ohio EPA during an inspection at the facility. Failure to make requested records available to Ohio EPA upon request is a violation of this permit requirement.

**4. What are my permit fees and when do I pay them?**

There are two fees associated with permitted air contaminant sources in Ohio:

- PTIO fee. This one-time fee is based on a fee schedule in accordance with Ohio Revised Code (ORC) section 3745.11, or based on a time and materials charge for permit application review and permit processing if required by the Director.

You will be sent an invoice for this fee after you receive this PTIO and payment is due within 30 days of the invoice date. You are required to pay the fee for this PTIO even if you do not install or modify your operations as authorized by this permit.

- Annual emissions fee. Ohio EPA will assess a separate fee based on the total annual emissions from your facility. You self-report your emissions in accordance with Ohio Administrative Code (OAC) Chapter 3745-78. This fee assessed is based on a fee schedule in ORC section 3745.11 and funds Ohio EPA's permit compliance oversight activities. For facilities that are permitted as synthetic minor sources, the fee schedule is adjusted annually for inflation. Ohio EPA will notify you when it is time to report your emissions and to pay your annual emission fees.

**5. When does my PTIO expire, and when do I need to submit my renewal application?**

This permit expires on the date identified at the beginning of this permit document (see "Authorization" page above) and you must submit a renewal application to renew the permit. Ohio EPA will send a renewal notice to you approximately six months prior to the expiration date of this permit. However, it is



very important that you submit a complete renewal permit application (postmarked prior to expiration of this permit) even if you do not receive the renewal notice.

If a complete renewal application is submitted before the expiration date, Ohio EPA considers this a timely application for purposes of ORC section 119.06, and you are authorized to continue operating the emissions unit(s) covered by this permit beyond the expiration date of this permit until final action is taken by Ohio EPA on the renewal application.

**6. What happens to this permit if my project is delayed or I do not install or modify my source?**

This PTIO expires 18 months after the issue date identified on the "Authorization" page above unless otherwise specified if you have not (1) started constructing the new or modified emission sources identified in this permit, or (2) entered into a binding contract to undertake such construction. This deadline can be extended by up to 12 months, provided you apply to Ohio EPA for this extension within a reasonable time before the 18-month period has ended and you can show good cause for any such extension.

**7. What reports must I submit under this permit?**

An annual permit evaluation report (PER) is required in addition to any malfunction reporting required by OAC rule 3745-15-06 or other specific rule-based reporting requirement identified in this permit. Your PER due date is identified in the Authorization section of this permit.

**8. If I am required to obtain a Title V operating permit in the future, what happens to the operating provisions and PER obligations under this permit?**

If you are required to obtain a Title V permit under OAC Chapter 3745-77 in the future, the permit-to-operate portion of this permit will be superseded by the issued Title V permit. From the effective date of the Title V permit forward, this PTIO will effectively become a PTI (permit-to-install) in accordance with OAC rule 3745-31-02(B). The following terms and conditions will no longer be applicable after issuance of the Title V permit: Section B, Term 1.b) and Section C, for each emissions unit, Term a)(2).

The PER requirements in this permit remain effective until the date the Title V permit is issued and is effective, and cease to apply after the effective date of the Title V permit. The final PER obligation will cover operations up to the effective date of the Title V permit and must be submitted on or before the submission deadline identified in this permit on the last day prior to the effective date of the Title V permit.

**9. What are my obligations when I perform scheduled maintenance on air pollution control equipment?**

You must perform scheduled maintenance of air pollution control equipment in accordance with OAC rule 3745-15-06(A). If scheduled maintenance requires shutting down or bypassing any air pollution control equipment, you must also shut down the emissions unit(s) served by the air pollution control equipment during maintenance, unless the conditions of OAC rule 3745-15-06(A)(3) are met. Any emissions that exceed permitted amount(s) under this permit (unless specifically exempted by rule) must be reported as deviations in the annual permit evaluation report (PER), including nonexempt excess emissions that occur during approved scheduled maintenance.



**10. Do I have to report malfunctions of emissions units or air pollution control equipment? If so, how must I report?**

If you have a reportable malfunction of any emissions unit(s) or any associated air pollution control system, you must report this to the Ohio EPA DAPC, Central District Office in accordance with OAC rule 3745-15-06(B). Malfunctions that must be reported are those that result in emissions that exceed permitted emission levels. It is your responsibility to evaluate control equipment breakdowns and operational upsets to determine if a reportable malfunction has occurred.

If you have a malfunction, but determine that it is not a reportable malfunction under OAC rule 3745-15-06(B), it is recommended that you maintain records associated with control equipment breakdown or process upsets. Although it is not a requirement of this permit, Ohio EPA recommends that you maintain records for non-reportable malfunctions.

**11. Can Ohio EPA or my local air agency inspect the facility where the emission unit(s) is/are located?**

Yes. Under Ohio law, the Director or his authorized representative may inspect the facility, conduct tests, examine records or reports to determine compliance with air pollution laws and regulations and the terms and conditions of this permit. You must provide, within a reasonable time, any information Ohio EPA requests either verbally or in writing.

**12. What happens if one or more emissions units operated under this permit is/are shut down permanently?**

Ohio EPA can terminate the permit terms associated with any permanently shut down emissions unit. "Shut down" means the emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31.

You should notify Ohio EPA of any emissions unit that is permanently shut down by submitting a certification that identifies the date on which the emissions unit was permanently shut down. The certification must be submitted by an authorized official from the facility. You cannot continue to operate an emission unit once the certification has been submitted to Ohio EPA by the authorized official.

You must comply with all recordkeeping and reporting for any permanently shut down emissions unit in accordance with the provisions of the permit, regulations or laws that were enforceable during the period of operation, such as the requirement to submit a PER, air fee emission report, or malfunction report. You must also keep all records relating to any permanently shutdown emissions unit, generated while the emissions unit was in operation, for at least five years from the date the record was generated.

Again, you cannot resume operation of any emissions unit certified by the authorized official as being permanently shut down without first applying for and obtaining a permit pursuant to OAC Chapter 3745-31.

**13. Can I transfer this permit to a new owner or operator?**

You can transfer this permit to a new owner or operator. If you transfer the permit, you must follow the procedures in OAC Chapter 3745-31, including notifying Ohio EPA or the local air agency of the change in ownership or operator. Any transferee of this permit must assume the responsibilities of the transferor permit holder.



State of Ohio Environmental Protection Agency  
Division of Air Pollution Control

**Draft Permit-to-Install and Operate**

**Permit Number:** P0103795

**Facility ID:** 0125044001

**Effective Date:** To be entered upon final issuance

**14. Does compliance with this permit constitute compliance with OAC rule 3745-15-07, "air pollution nuisance"?**

This permit and OAC rule 3745-15-07 prohibit operation of the air contaminant source(s) regulated under this permit in a manner that causes a nuisance. Ohio EPA can require additional controls or modification of the requirements of this permit through enforcement orders or judicial enforcement action if, upon investigation, Ohio EPA determines existing operations are causing a nuisance.

**15. What happens if a portion of this permit is determined to be invalid?**

If a portion of this permit is determined to be invalid, the remainder of the terms and conditions remain valid and enforceable. The exception is where the enforceability of terms and conditions are dependent on the term or condition that was declared invalid.



State of Ohio Environmental Protection Agency  
Division of Air Pollution Control

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## **B. Facility-Wide Terms and Conditions**



State of Ohio Environmental Protection Agency  
Division of Air Pollution Control

**Draft Permit-to-Install and Operate**

**Permit Number:** P0103795

**Facility ID:** 0125044001

**Effective Date:** To be entered upon final issuance

1. This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).
  - a) For the purpose of a permit-to-install document, the facility-wide terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
    - (1) None.
  - b) For the purpose of a permit-to-operate document, the facility-wide terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
    - (1) None.



State of Ohio Environmental Protection Agency  
Division of Air Pollution Control

**Draft Permit-to-Install and Operate**

**Permit Number:** P0103795

**Facility ID:** 0125044001

**Effective Date:** To be entered upon final issuance

## **C. Emissions Unit Terms and Conditions**



**1. B001, Combined Heat and Power Unit (CHPU) #1**

**Operations, Property and/or Equipment Description:**

GE Jenbacher Biogas-Fueled Cogeneration Unit (16.9 MMBtu/hr)

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. d)(6)

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. b)(1)h., b)(1)i., b)(2)c., b)(2)d., c)(2), d)(5), e)(2), and f)(1).

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operations(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3)	Emissions of nitrogen oxides (NO <sub>x</sub> ) from this emissions unit shall not exceed 0.6 grams per base horsepower hour (g / bhp-hr) and 15.5 tons per year.  Emissions of carbon monoxide (CO) from this emissions unit shall not exceed 3.0 g / bhp-hr and 77.6 tons per year.  Emissions of sulfur dioxide (SO <sub>2</sub> ) shall not exceed 2.5 pounds per hour and 10.7 tons per year.  See b)(2)a.
b.	OAC rule 3745-31-05(A)(3)(a)(ii)	See b)(2)b.
c.	OAC rule 3745-31-05(F) [Voluntary restriction to avoid Air Toxics Modeling]	See b)(2)c.
d.	OAC rule 3745-18-06(G)	The sulfur dioxide (SO <sub>2</sub> ) emissions limitation specified by this rule is less stringent than the voluntary restriction



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		established pursuant to OAC rule 3745-31-05(F).
e.	OAC rule 3745-17-11(B)(5)(b)	Particulate emissions (PE) shall not exceed 0.062 pound / million Btu actual heat input.
f.	OAC rule 3745-17-07(A)(1)	Except as otherwise specified by rule, visible particulate emissions from any stack shall not exceed twenty per cent (20%) opacity, as a six-minute average.
g.	OAC rule 3745-110-03(F)(2)	The NO <sub>x</sub> emissions limitation specified by this rule is less stringent than the emissions limitation established pursuant to OAC rule 3745-31-05(A)(3).
h.	40 Code of Federal Regulations Part 60, Subpart JJJJ (40 CFR 60.4230 – 4248) Standards of Performance for Stationary Spark Ignition Internal Combustion Engines  [In accordance with 40 CFR 60.4230(a)(4)(i), this emissions unit is a stationary spark ignition (SI) internal combustion engine (ICE) were the SI ICE is an engine with a maximum engine power greater than or equal to 500 HP.]	The NO <sub>x</sub> emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).  The CO emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).  Emissions of volatile organic compounds (VOCs) from this emissions unit shall not exceed 1.0 g / bhp-hr. [40 CFR Part 60, Subpart JJJJ, Table 1]  See (2)d. and (2)e.
i.	40 CFR Part 60.1 – 19  (40 CFR 60.4246)	Table 3 to Subpart JJJJ of 40 CFR Part 60 – Applicability of General Provisions to Subpart JJJJ shows which parts of the General Provisions in 40 CFR 60.1 – 19 apply.

(2) Additional Terms and Conditions

a. Permit to Install and Operate P0103795 for this air contaminant source takes into account the following voluntary restrictions (including the use of any applicable air pollution control equipment) as proposed by the permittee for the purpose of avoiding Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3):

i. Biogas combusted in this emissions unit shall not exceed a hydrogen sulfide (H<sub>2</sub>S) concentration of 500 parts per million on a volume basis (ppm<sub>v</sub>).



- b. The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the particulate emissions (PE) and volatile organic compounds (VOC) from this air contaminant source since the uncontrolled potential to emit for PE and VOC is less than 10 tons/yr.
- c. Permit to Install and Operate P0103795 for this air contaminant source takes into account the following voluntary restrictions (including the use of any applicable air pollution control equipment) as proposed by the permittee for the purpose of avoiding Air Toxics modeling requirements under ORC 3704.03(F)(4)(b):

- i. The permittee shall install and operate a selective catalytic reduction (SCR) / oxidation catalyst system (catalytic converter) with a minimum control efficiency of 99.5% for formaldehyde emissions.

The catalytic converter shall be operated and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals. The conversion efficiency of the catalyst, as determined in an annual catalyst activity test, shall be at least 99.5% at a test temperature that is equal to that temperature at which the inlet to the catalyst bed is set. Formaldehyde loading during the catalyst activity test shall be consistent with the test laboratory's normal testing protocol.

- d. The spark ignition (SI) internal combustion engine is subject to and shall be operated in compliance with the requirements of 40 CFR Part 60, Subpart JJJJ, the standards of performance for stationary spark ignition, internal combustion engines. The engine shall be certified by the manufacturer to meet the applicable limits of 40 CFR 60.4231.

If the engine was not certified at the factory, the emission standard for the "owner/operator" should be referenced as from 60.4233(e).

- e. The permittee shall comply with the applicable requirements under 40 CFR Part 60, Subpart JJJJ, including the following sections.

60.4233(e)	Emission standards
60.4243(b)	Demonstrate compliance

c) Operational Restrictions

- (1) The permittee shall burn only natural gas and/or biogas fuel in this emissions unit.
- (2) The permittee shall comply with the applicable restrictions required under 40 CFR Part 60, Subpart JJJJ, including the following sections:

60.4243(g)	Emissions controls
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d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall perform daily checks, when the emissions unit is in operation firing biogas and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
  - a. the color of the emissions;
  - b. whether the emissions are representative of normal operations;
  - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
  - d. the total duration of any visible emission incident; and
  - e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emission incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

The permittee may, upon receipt of written approval from Ohio EPA Central District Office, modify the above-mentioned frequencies for performing the visible emissions checks if operating experience indicates that less frequent visible emissions checks would be sufficient to ensure compliance with the above-mentioned applicable requirements.

- (2) For each day during which the permittee burns a fuel other than natural gas and/or biogas fuel, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.
- (3) The permittee shall maintain monthly records of the natural gas and biogas fuel usage in this unit in millions of standard cubic feet.
- (4) The permittee shall maintain daily records of the average sulfur concentration (as H<sub>2</sub>S) in ppm<sub>v</sub> of the biogas combusted in this emissions unit.
- (5) The permittee shall comply with the applicable monitoring and record keeping requirements under 40 CFR Part 60, Subpart JJJJ, including the following sections.



60.4243(e)	Emergency operations, special record keeping
60.4245(a)	Record keeping requirements

(6) Modeling to demonstrate compliance with, the toxic Air Contaminant Statute, ORC 3704.03(F)(4)(b), was not necessary because the emissions unit's maximum annual emissions for each toxic air contaminant, as defined in OAC rule 3745-114-01, will be less than 1.0 ton per year. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any toxic air contaminant to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new permit to install.

(7) The permittee shall perform a preventative maintenance inspection of the catalytic converter on an annual basis to evaluate the performance of the catalyst. Each inspection shall consist of internal and visual inspections in accordance with the manufacturer's recommendations, and shall include a physical inspection of the unit and all of the associated equipment, including but not limited to controls, dampers, valves, and monitoring and recording equipment. Repair and replacement of equipment and the catalyst shall be performed as determined by the inspection. During each annual inspection a sample of the catalyst material shall be collected from the catalyst bed and used to perform a catalyst activity test. The permittee shall maintain a record of the results of each annual inspection and the results of each annual catalyst activity test.

The permittee shall also perform weekly inspections of the external integrity of the catalytic converter. Records shall be maintained of the inspections and the date(s) of catalyst replacement, and if only partial, the amount or percent of the total catalyst replaced.

e) Reporting Requirements

(1) Annual Permit Evaluation Report (PER) forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee shall submit the PER in the form and manner provided by the director by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit.

(2) The permittee shall submit reports and such other notifications to the Ohio EPA as are required pursuant to 40 CFR Part 60, Subpart JJJJ, per the following sections:

60.4245(c)	Reporting requirements
60.4245(d)	Reporting requirements



These reports and other such notifications shall be submitted to the following addresses:

Ohio Environmental Protection Agency  
DAPC - Permit Management Unit  
Lazarus Government Center  
P.O. Box 1049  
Columbus, OH 43216-1049

and

Ohio EPA, Central District Office  
Lazarus Government Center  
P.O. Box 1049  
Columbus, OH 43216-1049

f) Testing Requirements

- (1) Emissions limitation: Emissions of nitrogen oxides (NO<sub>x</sub>) from this emissions unit shall not exceed 0.6 grams per base horsepower hour (g / bhp-hr).

Emissions of carbon monoxide (CO) from this emissions unit shall not exceed 3.0 g / bhp-hr.

Emissions of volatile organic compounds (VOCs) from this emissions unit shall not exceed 1.0 g / bhp-hr.

Applicable compliance method: The permittee shall demonstrate compliance with these emissions limitations by complying with one of the two following options:

Option 1 – The permittee shall purchase and engine certified according to procedures specified in 40 CFR Part 60, subpart JJJJ for the same model year and demonstrating compliance according to one of the methods specified in 40 CFR Part 60.4243(a)(1) or 40 CFR Part 60.4243(a)(2).

Option 2 – The permittee shall conduct or have conducted, emissions testing for this emissions unit in accordance with the following requirements.

- a. The emission testing shall be conducted within 60 days after achieving the maximum production rate at which the emissions unit will be operated, but not later than 180 days after initial startup of the emissions unit.
- b. Subsequent emissions testing frequency shall be established in accordance with the requirements of 40 CFR Part 60, Subpart JJJJ and Ohio EPA Engineering Guide #16, but no less frequently than once every five years.
- c. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rates:

Emissions of nitrogen oxides (NO<sub>x</sub>) from this emissions unit shall not exceed 0.6 grams per base horsepower hour (g / bhp-hr).

Emissions of carbon monoxide (CO) from this emissions unit shall not exceed 3.0 g / bhp-hr.



Emissions of volatile organic compounds (VOCs) from this emissions unit shall not exceed 1.0 g / bhp-hr.

- d. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

For NO<sub>x</sub>, 40 CFR Part 60, Appendix A Methods 1-4 and 7E

For CO, 40 CFR Part 60, Appendix A Methods 1-4 and 10

For VOC, 40 CFR Part 60, Appendix A Methods 1-4 and 25, 25A or 40 CFR Part 63, Appendix A, Method 320.

Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

- e. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Ohio EPA Central District Office.

- f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Central District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA Central District Office's refusal to accept the results of the emission test(s).

- g. Personnel from the Ohio EPA Central District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

- h. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Central District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio EPA Central District Office.

- (2) Compliance with the emission limitations specified in b)(1) of these terms and conditions shall be determined in accordance with the following methods:

- a. Emissions Limitation: Emissions of nitrogen oxides (NO<sub>x</sub>) from this emissions unit shall not exceed 15.5 tons per year.

Emissions of carbon monoxide (CO) from this emissions unit shall not exceed 77.6 tons per year.



Applicable Compliance Method: Compliance with the annual limitation shall be assumed as long as compliance with the hourly limitations is maintained (each annual limitation was calculated using the following formula:

Annual tons per year emissions (for NO<sub>x</sub> or CO) =

$$(g / \text{bhp-hr}) * (0.0022 \text{ lb} / \text{g}) * (\text{bhp of engine}) * (8760 \text{ hours} / \text{year}) / (2000 \text{ lbs} / \text{ton})$$

Where:

**g / bhp-hr** = 0.6 for NO<sub>x</sub> or 3.0 for CO until such time as the compliance testing in f)(1) is completed.

Following the completion of compliance testing in f)(1), the g / bhp-hr value for NO<sub>x</sub> and CO shall be the g / bhp-hr value measured during the most recent compliance test.

**bhp of engine** = 2677 bhp

- b. Emissions Limitation: Emissions of sulfur dioxide (SO<sub>2</sub>) shall not exceed 2.5 pounds per hour and 10.7 tons per year.

Applicable Compliance Method: The permittee shall demonstrate compliance with the short-term and annual emissions limitation through the monitoring and recordkeeping in d)(3) and d)(4) and the following equation:

$$F * (\text{H}_2\text{S ppm}_v / 1,000,000) * 0.88 \text{ lb H}_2\text{S/ft}^3 \text{ H}_2\text{S} * 1.88 \text{ lb SO}_2/\text{lb H}_2\text{S} = \text{SO}_2 \text{ lb/hr}$$

Where:

F = biogas fuel consumption in cubic feet per day, from d)(3)

H<sub>2</sub>S ppm<sub>v</sub> = average concentration of H<sub>2</sub>S in biogas, from d)(4)

Compliance with the annual emissions limitation shall be demonstrated by multiplying the calculated SO<sub>2</sub> lb/hr by 8,760 hours per year and dividing by 2,000 pounds per ton.

If required, sulfur dioxide emissions shall be determined according to test Methods 1 - 4, and 6 as set forth in 40 CFR, Part 60 Appendix A.

Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Central District Office.

- c. Emissions Limitation: Particulate emissions (PE) shall not exceed 0.062 pound / million Btu actual heat input.

Applicable Compliance Method: If required, the permittee shall determine particulate emissions according to test Methods 1 - 5, as set forth in 40 CFR, Part 60 and the procedures specified in OAC rule 3745-17-03(B)(10).



Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Central District Office.

- d. Emissions Limitation: Except as otherwise specified by rule, visible particulate emissions from any stack shall not exceed twenty per cent (20%) opacity, as a six-minute average.

Applicable Compliance Method: If required, compliance shall be determined through visible emission observations performed in accordance with U.S. EPA Method 9.

- g) Miscellaneous Requirements

- (1) None.



**2. F001, Paved Roadways and Parking Areas**

**Operations, Property and/or Equipment Description:**

Paved Roadways and Parking Areas

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operations(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC Rule 3745-31-05(A)(3)(a)(ii)	See b)(2)a.
b.	OAC rule 3745-17-07(B)(4)	There shall be no visible particulate emissions from the paved roadways and/or parking areas except for a period of time not to exceed six minutes during any 60-minute observation period.
c.	OAC rule 3745-17-08(B)	See b)(2)b. through b)(2)e.

(2) Additional Terms and Conditions

a. The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the fugitive particulate matter (PM) from this air contaminant source since the uncontrolled potential to emit for PM is less than 10 tons/yr.

b. The permittee shall employ best available control measures on all paved roadways and parking areas for the purpose of ensuring compliance with the



above-mentioned applicable requirements, including treating the paved roadways and parking areas by application of chemical stabilization/dust suppressants and/or watering at sufficient treatment frequencies to ensure compliance. Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance.

- c. The needed frequencies of implementation of the control measures shall be determined by the permittee's inspections pursuant to the monitoring section of this permit. Implementation of the control measures shall not be necessary for paved roadways and parking areas that are covered with snow and/or ice or if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned applicable requirements. Implementation of any control measure may be suspended if unsafe or hazardous driving conditions would be created by its use.
- d. The permittee shall promptly remove, in such a manner as to minimize or prevent resuspension, earth and/or other material from paved streets onto which such material has been deposited by trucking or earth moving equipment or erosion by water or other means.
- e. Open-bodied vehicles transporting materials likely to become airborne shall have such materials covered at all times if the control measure is necessary for the materials being transported.

c) Operational Restrictions

- (1) None.

d) Monitoring and/or Recordkeeping Requirements

- (1) Except as otherwise provided in this section, the permittee shall perform inspections of each of the roadway segments and parking areas in accordance with the following frequencies:

<u>paved roadways and parking areas</u>	<u>minimum inspection frequency</u>
all roads and parking areas	daily

- (2) The purpose of the inspections is to determine the need for implementing the above-mentioned control measures. The inspections shall be performed during representative, normal traffic conditions. No inspection shall be necessary for a roadway or parking area that is covered with snow and/or ice or if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned applicable requirements. Any required inspection that is not performed due to any of the above-identified events shall be performed as soon as such event(s) has (have) ended, except if the next required inspection is within one week.

- (3) The permittee shall maintain records of the following information:

- a. the date and reason any required inspection was not performed, including those inspections that were not performed due to snow and/or ice cover or precipitation;



- b. the date of each inspection where it was determined by the permittee that it was necessary to implement the control measures;
    - c. the dates the control measures were implemented; and
    - d. on a calendar quarter basis, the total number of days the control measures were implemented and the total number of days where snow and/or ice cover or precipitation were sufficient to not require the control measures.
  - (4) The information required in d)(3)d. shall be updated on a calendar quarter basis within 30 days after the end of each calendar quarter.
- e) Reporting Requirements
  - (1) Annual Permit Evaluation Report (PER) forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee shall submit the PER in the form and manner provided by the director by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit.
- f) Testing Requirements
  - (1) Compliance with the emission limitations in b)(1) shall be determined in accordance with the following methods:
    - a. Emission Limitations: There shall be no visible particulate emissions from the paved roadways and/or parking areas except for a period of time not to exceed six minutes during any 60-minute observation period.  
  
Applicable Compliance Method: If required, compliance with the visible emission limitation for the paved roadways and/or parking areas identified in this permit shall be determined in accordance with U.S. EPA Method 22 and the modifications listed in paragraphs (B)(4)(a) through (B)(4)(d) of OAC rule 3745-17-03.
- g) Miscellaneous Requirements
  - (1) None.



**3. P001, Anaerobic digester controlled by a flare**

**Operations, Property and/or Equipment Description:**

Anaerobic Digester System (includes solids and liquid reception tanks and bins, anaerobic digestion tanks, pasteurization, dewatering, and biogas collection)

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. b)(1)g.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operations(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
	<u>Material Handling and Processing</u>	
a.	OAC rule 3745-31-05(F) [Voluntary restriction to control odors]	See b)(2)a.
	<u>Process Flare</u>	
b.	OAC rule 3745-31-05(A)(3)	Emissions of sulfur dioxide (SO <sub>2</sub> ) shall not exceed 3.0 pounds per hour and 13.1 tons per year.  See b)(2)b.
c.	OAC rule 3745-31-05(A)(3)(a)(ii)	See b)(2)c.
d.	OAC rule 3745-17-11(B)	See b)(2)d.
e.	OAC rule 3745-17-07(A)	See b)(2)e.
f.	OAC rule 3745-18-06(E)(2)	The sulfur dioxide (SO <sub>2</sub> ) emissions limitation specified by this rule is less stringent than the voluntary restriction established pursuant to OAC rule 3745-31-05(A)(3) in b)(2)b.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
	<u>Biofilter</u>	
g.	OAC rule 3745-31-05(E) [State-only enforceable restriction to ensure compliance with ORC 3704.03(F)(4)(b) (Toxic Air Contaminant Statute)]	See d)(3).
h.	OAC rule 3745-31-05(F) [Voluntary restriction to control odors]	See b)(2)a.

(2) Additional Terms and Conditions

- a. Permit to install and operate P0103795 for this air contaminant source takes into account the following voluntary restrictions (including the use of any applicable air pollution control equipment) as proposed by the permittee for the purpose of controlling odors from material handling and processing:
  - i. Daily cleaning of the processing building load-in and load-out areas to minimize the presence of residual feedstock and digestate.
  - ii. Installation and operation of a biofilter to control emissions of odors from material handling and processing operations;
  - iii. The direction of air flow through all processing building openings during normal operations shall be into the building and vented at all times through a closed vent system exhausted through a biofilter;
  - iv. Processing building openings during the load-in of solid feedstock and load-out of digestate shall be minimized;
  - v. Processing building air shall be vented at all times during normal operation through a closed vent system exhausted through a biofilter; and
  - vi. Headspace from storage tanks, including liquid feedstock buffer tanks, pasteurization tanks and belt press filtrate holding tank shall be vented through a closed-vent system exhausted through a biofilter.
- b. Permit to install and operate P0103795 for this air contaminant source takes into account the following voluntary restrictions (including the use of any applicable air pollution control equipment) as proposed by the permittee for the purpose of avoiding the Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3):
  - i. Biogas combusted in the flare shall not exceed a hydrogen sulfide (H<sub>2</sub>S) concentration of 500 parts per million on a volume basis (ppm<sub>v</sub>).
- c. The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>) particulate emissions (PE), and volatile organic compounds (VOC) from this air



contaminant source since the uncontrolled potential to emit for CO, NO<sub>x</sub>, PE, and VOC is less than 10 tons/yr.

- d. The uncontrolled mass rate of particulate emissions (PE) from this emissions unit is less than 10 pounds/hour. Pursuant to OAC rule 3745-17-11(A)(2)(a)(ii), Figure II of OAC rule 3745-17-11 does not apply. In addition, Table I of OAC rule 3745-17-11 does not apply because the process weight rate is equal to zero. "Process weight" is defined in OAC rule 3745-17-01(B)(17).
- e. This emissions unit is exempt from the visible PE limitations specified in OAC rule 3745-17-07(A) pursuant to OAC rule 3745-17-07(A)(3)(h) because the emissions unit is not subject to the requirements of OAC rule 3745-17-11.
- f. Emissions from P001 shall be vented to the flare during any instance during which biogas is present in the feedstock equilibrium tank, primary digester, or dual purpose tank and emissions unit B001 is not operating.

c) Operational Restrictions

- (1) A pilot flame shall be maintained at all times in the flare's pilot light burner.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall maintain the following records on a daily basis:
  - a. all periods of time during which there was no pilot flame or the flare was inoperable and biogas was present in the feedstock equilibrium tank, primary digester, or dual purpose tank and emissions unit B001 is not operating;
  - b. all periods of time that the voluntary restrictions in b)(2)a. are not employed or followed; and
  - c. the average sulfur concentration (as H<sub>2</sub>S) in ppm<sub>v</sub> of the biogas combusted in the flare.
- (2) Modeling to demonstrate compliance with, the A Toxic Air Contaminant Statute, ORC 3704.03(F)(4)(b), was not necessary because the emissions unit's maximum annual emissions for each toxic air contaminant, as defined in OAC rule 3745-114-01, will be less than 1.0 ton per year so long as the permittee complies with the voluntary restrictions in b)(2)a and the monitoring and recordkeeping requirements in d)(3).

OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any toxic air contaminant to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new permit to install.

- (3) The permittee shall submit an operation and maintenance plan for biofilter operation to Ohio EPA, Central District Office for approval within sixty (60) days of startup of emissions unit P001. This plan shall, at a minimum, include the following information:



- a. a description of the biofilter, including materials of construction and key operating parameter value(s) or range(s);
- b. a description of how the biofilter will be operated and maintained, including a schedule for routine biofilter maintenance and material replacement, equipment specifications of the biofilter odorous air blower, and dimensions and location of the biofilter;
- c. a description of how biofilter key operating parameters will be monitored and corrective actions performed if any key operating parameter(s) fall outside its (their) expected value(s) or range(s);
- d. a description of any periodic sampling or testing performed on the biofilter or biofilter emissions for odor-causing compounds;
- e. a description of how biofilter emissions will be monitored for odor-causing compounds at the biofilter and at the facility fenceline;
- f. a description of how odor-causing compound emissions from the biofilter, detected at the facility fenceline, will be minimized or eliminated; and
- g. a description of how biofilter malfunctions, including emissions of odor-causing compounds detected at the facility fenceline, will be reported to Central District Office.

Any changes or revisions to this operation and maintenance plan shall be submitted to Ohio EPA, Central District Office for approval within thirty (30) days of making the change or revision.

e) Reporting Requirements

- (1) Annual Permit Evaluation Report (PER) forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee shall submit the PER in the form and manner provided by the director by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit.

f) Testing Requirements

- (1) Compliance with the emission limitations specified in b)(1) of these terms and conditions shall be determined in accordance with the following methods:

- a. Emissions Limitation: Emissions of sulfur dioxide (SO<sub>2</sub>) shall not exceed 3.0 pounds per hour and 13.1 tons per year.

Applicable Compliance Method: The permittee shall demonstrate compliance with the short-term and annual emissions limitation through the monitoring and recordkeeping in d)(1) and the following equation:

$$SO_2 \text{ lb/hr} = F * (H_2S \text{ ppm}_v / 1,000,000) * 0.88 \text{ lb } H_2S/\text{ft}^3 \text{ } H_2S * 1.88 \text{ lb } SO_2/\text{lb } H_2S$$

Where:



$F = 36,000$  cubic feet per hour (maximum flare exhaust volume)

$H_2S \text{ ppm}_v$  = average concentration of  $H_2S$  in biogas, from d)(1)

Compliance with the annual emissions limitation shall be demonstrated by multiplying the calculated  $SO_2$  lb/hr by 8,760 hours per year and dividing by 2,000 pounds per ton.

If required, sulfur dioxide emissions shall be determined according to test Methods 1 - 4, and 6 as set forth in 40 CFR, Part 60 Appendix A.

Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Central District Office.

g) Miscellaneous Requirements

- (1) If required, the permittee shall confirm, through the applicable methods and procedures specified in 40 CFR Part 60.18, that the flare's exit velocity and the net heating value of the biogas conform to the maximum design values specified in the permit application for this emissions unit.



4. Emissions Unit Group - Biogas Boiler Group: B002, B003,

EU ID	Operations, Property and/or Equipment Description
B002	1.6 MMBtu / hr Biogas-Fueled Boiler No. 1
B003	1.6 MMBtu / hr Biogas-Fueled Boiler No. 2

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operations(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC Rule 3745-31-05(A)(3)(a)(ii)	See b)(2)a.
b.	OAC rule 3745-17-07(A)(1)	Visible particulate emissions shall not exceed 20% opacity as a six-minute average, except as provided by rule.
c.	OAC rule 3745-17-10(B)(1)	Emissions shall not exceed 0.020 pound particulate emissions per million BTU actual heat input.
d.	OAC rule 3745-18-06	See b)(2)b.

(2) Additional Terms and Conditions

a. The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), particulate emissions (PE), and volatile organic compounds (VOC) from this air contaminant source since the uncontrolled potential to emit for SO<sub>2</sub>, NO<sub>x</sub>, CO, PE, and VOC is less than 10 tons/yr.

b. This emissions unit is exempt from the requirements of OAC rule 3745-18-06(D) pursuant to OAC rule 3745-18-06(B).



- c) Operational Restrictions
  - (1) The permittee shall only burn biogas and/or natural gas in this emissions unit.
- d) Monitoring and/or Recordkeeping Requirements
  - (1) For each day during which the permittee burns a fuel other than biogas or natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.
- e) Reporting Requirements
  - (1) Annual Permit Evaluation Report (PER) forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee shall submit the PER in the form and manner provided by the director by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit.
- f) Testing Requirements
  - (1) Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):
    - a. Emission Limitation: Visible particulate emissions shall not exceed 20% opacity as a six-minute average, except as provided by rule.  
  
Applicable Compliance Method If required, visible particulate emissions shall be determined according to USEPA Method 9.  
  
Emission Limitation: Emissions shall not exceed 0.020 pound particulate emissions per million BTU actual heat input.  
  
Applicable Compliance Method: If required, particulate emissions shall be determined according to test Methods 1 - 5, as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources", and the procedures specified in OAC rule 3745-17-03(B)(9). Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Central District Office.
- g) Miscellaneous Requirements
  - (1) None.